ServerView Resource Orchestrator Cloud Edition V3.0.0

Reference Guide
for Infrastructure Administrators (Resource Management)

Windows/Linux

Preface

Purpose

This manual provides details of the commands, configuration files of ServerView Resource Orchestrator (hereinafter Resource Orchestrator), and details of the information about the corrective actions for displayed messages.

Target Readers

This manual is written for system administrators who will use Resource Orchestrator to operate the infrastructure in private cloud or data center environments.

When setting up systems, it is assumed that readers have the basic knowledge required to configure the servers, storage, network devices, and server virtualization software to be installed. Additionally, a basic understanding of directory services such as Active Directory and LDAP is necessary.

Organization

This manual is composed as follows:

Title	Description
Chapter 1 Command Reference	Provides an overview of the commands available in Resource Orchestrator.
Chapter 2 Resource Configuration Information and User Definition Information (XML Files)	Explains resource configuration information and user definition information (XML files).
Chapter 3 Messages	Explains the messages displayed by Resource Orchestrator.
Chapter 4 Troubleshooting	Explains how to solve problems and gather troubleshooting data for a technical investigation.
Chapter 5 Script Execution when Operating L-Servers	Explains the function for executing user-created scripts that have been prepared and deployed in advance, and the timing in relation to L-Server operations.
Appendix A GUI/CLI	Provides references for operation using the GUI/CLI based on functions.
Glossary	Explains the terms used in this manual. Please refer to it when necessary.

Notational Conventions

The notation in this manual conforms to the following conventions.

- When using Resource Orchestrator and the functions necessary differ due to the necessary basic software (OS), it is indicated as follows:

[Windows]	Sections related to Windows (When not using Hyper-V)
[Linux]	Sections related to Linux
[VMware]	Sections related to VMware
[Hyper-V]	Sections related to Hyper-V
[Xen]	Sections related to RHEL5-Xen
[Oracle VM]	Sections related to Oracle VM
[Windows/Hyper-V]	Sections related to Windows and Hyper-V

[Windows/Linux]	Sections related to Windows and Linux
[Linux/VMware]	Sections related to Linux and VMware
[VM host]	Sections related to Windows Server 2008 with VMware or Hyper-V enabled

- Unless specified otherwise, the blade servers mentioned in this manual refer to PRIMERGY BX servers.

- References and character strings or values requiring emphasis are indicated using double quotes (").

- Window names, dialog names, menu names, and tab names are shown enclosed by brackets ([ ]).

- Button names are shown enclosed by angle brackets (< >) or square brackets ([ ]).

- The order of selecting menus is indicated using [ ]-[ ].

- Text to be entered by the user is indicated using bold text.

- Variables are indicated using italic text and underscores.

- The ellipses ("...") in menu names, indicating settings and operation window startup, are not shown.

- The ">" used in Windows is included in usage examples. When using Linux, read ">" as meaning "#".

Menus in the ROR console

Operations on the ROR console can be performed using either the menu bar or pop-up menus.
By convention, procedures described in this manual only refer to pop-up menus.

Command Examples

The paths used in command examples are abbreviated. When executing commands, do so using the path given in "Name".

Documentation Road Map

The following manuals are provided with Resource Orchestrator. Please refer to them when necessary:

Manual Name	Abbreviated Form	Purpose
ServerView Resource Orchestrator Cloud Edition V3.0.0 Setup Guide	Setup Guide CE	**Please read this first.** Read this when you want information about the purposes and uses of basic functions, and how to install Resource Orchestrator.
ServerView Resource Orchestrator Cloud Edition V3.0.0 Installation Guide	Installation Guide CE	Read this when you want information about how to install Resource Orchestrator.
ServerView Resource Orchestrator Cloud Edition V3.0.0 Operation Guide	Operation Guide CE	Read this when you want information about how to operate systems that you have configured.
ServerView Resource Orchestrator Cloud Edition V3.0.0 User's Guide for Infrastructure Administrators (Resource Management)	User's Guide for Infrastructure Administrators (Resource Management) CE	Read this when you want information about how to operate the GUI (resource management) used by infrastructure administrators and dual-role administrators.
ServerView Resource Orchestrator Cloud Edition V3.0.0 User's Guide for Infrastructure Administrators	User's Guide for Infrastructure Administrators CE	Read this when you want information about how to operate the GUI (for operations other than resource management) used by infrastructure administrators and dual-role administrators.
ServerView Resource Orchestrator Cloud Edition V3.0.0 User's Guide for Tenant Administrators	User's Guide for Tenant Administrators CE	Read this when you want information about how to operate the GUI used by tenant administrators.

Manual Name	Abbreviated Form	Purpose
ServerView Resource Orchestrator Cloud Edition V3.0.0 User's Guide for Tenant Users	User's Guide for Tenant Users CE	Read this when you want information about how to operate the GUI used by tenant users.
ServerView Resource Orchestrator Cloud Edition V3.0.0 Reference Guide for Infrastructure Administrators (Resource Management)	Reference Guide (Resource Management) CE	Read this when you want information about commands used by infrastructure administrators and dual-role administrators to manage resources, messages output by the system, and how to perform troubleshooting.
ServerView Resource Orchestrator Cloud Edition V3.0.0 Reference Guide for Infrastructure Administrators	Reference Guide CE	Read this when you want information about the commands used by infrastructure administrators and dual-role administrators for operations other than resource management.
ServerView Resource Orchestrator Cloud Edition V3.0.0 Messages	Messages CE	Read this when you want detailed information about the corrective actions for displayed messages.

In some cases this manual may ask you to refer to the following Virtual Edition manuals.
Please refer to them when necessary:

Manual Name	Abbreviated Form	Purpose
ServerView Resource Orchestrator Virtual Edition V3.0.0 Setup Guide	Setup Guide VE	Read this when you want information about the purposes and uses of basic functions, and how to install Resource Orchestrator.
ServerView Resource Orchestrator Virtual Edition V3.0.0 Installation Guide	Installation Guide VE	Read this when you want information about how to install Resource Orchestrator.
ServerView Resource Orchestrator Virtual Edition V3.0.0 Operation Guide	Operation Guide VE	Read this when you want information about how to operate systems that you have configured.
ServerView Resource Orchestrator Virtual Edition V3.0.0 User's Guide	User's Guide VE	Read this when you want information about how to operate the GUI.
ServerView Resource Orchestrator Virtual Edition V3.0.0 Command Reference	Command Reference	Read this when you want information about how to use commands.
ServerView Resource Orchestrator Virtual Edition V3.0.0 Messages	Messages VE	Read this when you want detailed information about the corrective actions for displayed messages.

Related Documentation

Please refer to these manuals when necessary.

- When using VMware

  - vSphere Virtual Machine Administration Guide

  - vSphere Resource Management Guide

- When using the Linux virtual machine function of Red Hat(R) Enterprise Linux(R) 5.4 (for x86) or Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64)

  - Red Hat Enterprise Linux 5 Virtualization Guide

- When using NetApp storage

  - Data ONTAP Storage Management Guide

- When using ETERNUS storage

    - ETERNUS SF Storage Cruiser User's Guide

    - ETERNUS SF Storage Cruiser Message Guide

    - ETERNUS SF Express V15.0/ AdvancedCopy Manager Operation Guide for Copy Control Module

- When using EMC storage

    EMC Navisphere Manager Administrator's Guide

Abbreviations

The following abbreviations are used in this manual:

Abbreviation	Products
Windows	Microsoft(R) Windows Server(R) 2008 Standard Microsoft(R) Windows Server(R) 2008 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter Microsoft(R) Windows Server(R) 2003 R2, Standard Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition Windows(R) 7 Professional Windows(R) 7 Ultimate Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate Microsoft(R) Windows(R) XP Professional operating system
Windows Server 2008	Microsoft(R) Windows Server(R) 2008 Standard Microsoft(R) Windows Server(R) 2008 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter
Windows 2008 x86 Edition	Microsoft(R) Windows Server(R) 2008 Standard (x86) Microsoft(R) Windows Server(R) 2008 Enterprise (x86)
Windows 2008 x64 Edition	Microsoft(R) Windows Server(R) 2008 Standard (x64) Microsoft(R) Windows Server(R) 2008 Enterprise (x64)
Windows Server 2003	Microsoft(R) Windows Server(R) 2003 R2, Standard Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
Windows 2003 x64 Edition	Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
Windows 7	Windows(R) 7 Professional Windows(R) 7 Ultimate
Windows Vista	Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate
Windows XP	Microsoft(R) Windows(R) XP Professional operating system
Linux	Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64)

Abbreviation	Products
	Red Hat(R) Enterprise Linux(R) 5.1 (for x86) Red Hat(R) Enterprise Linux(R) 5.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.2 (for x86) Red Hat(R) Enterprise Linux(R) 5.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.3 (for x86) Red Hat(R) Enterprise Linux(R) 5.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.5 (for x86) Red Hat(R) Enterprise Linux(R) 5.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.6 (for x86) Red Hat(R) Enterprise Linux(R) 5.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.7 (for x86) Red Hat(R) Enterprise Linux(R) 5.7 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64) SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T
Red Hat Enterprise Linux	Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.1 (for x86) Red Hat(R) Enterprise Linux(R) 5.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.2 (for x86) Red Hat(R) Enterprise Linux(R) 5.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.3 (for x86) Red Hat(R) Enterprise Linux(R) 5.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.5 (for x86) Red Hat(R) Enterprise Linux(R) 5.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.6 (for x86) Red Hat(R) Enterprise Linux(R) 5.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.7 (for x86) Red Hat(R) Enterprise Linux(R) 5.7 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64)
Red Hat Enterprise Linux 5	Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.1 (for x86) Red Hat(R) Enterprise Linux(R) 5.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.2 (for x86) Red Hat(R) Enterprise Linux(R) 5.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.3 (for x86) Red Hat(R) Enterprise Linux(R) 5.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.5 (for x86) Red Hat(R) Enterprise Linux(R) 5.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.6 (for x86) Red Hat(R) Enterprise Linux(R) 5.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.7 (for x86) Red Hat(R) Enterprise Linux(R) 5.7 (for Intel64)
Red Hat Enterprise Linux 6	Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64)

Abbreviation	Products
RHEL5-Xen	Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Linux Virtual Machine Function
RHEL-KVM	Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64) Virtual Machine Function
DOS	Microsoft(R) MS-DOS(R) operating system, DR DOS(R)
SUSE Linux Enterprise Server	SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T
Oracle VM	Oracle VM Server for x86
ESC	ETERNUS SF Storage Cruiser
GLS	PRIMECLUSTER GLS
Navisphere	EMC Navisphere Manager
Solutions Enabler	EMC Solutions Enabler
MSFC	Microsoft Failover Cluster
SCVMM	System Center Virtual Machine Manager 2008 R2 System Center 2012 Virtual Machine Manager
VMware	VMware vSphere(R) 4 VMware vSphere(R) 4.1 VMware vSphere(R) 5
VMware FT	VMware Fault Tolerance
VMware DRS	VMware Distributed Resource Scheduler
VMware DPM	VMware Distributed Power Management
VMware vDS	VMware vNetwork Distributed Switch
VIOM	ServerView Virtual-IO Manager
ServerView Agent	ServerView SNMP Agents for MS Windows (32bit-64bit) ServerView Agents Linux ServerView Agents VMware for VMware ESX Server
ROR VE	ServerView Resource Orchestrator Virtual Edition
ROR CE	ServerView Resource Orchestrator Cloud Edition
Resource Coordinator	Systemwalker Resource Coordinator Systemwalker Resource Coordinator Virtual server Edition

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April 2012, 1.5	J2X1-7616-01ENZ0(05)

Contents

Chapter 1 Command Reference

This chapter explains the commands available in Resource Orchestrator.

1.1 Overview

This section provides an overview of the commands available in Resource Orchestrator.

The following types of commands are available:

- Login Command

  rcxlogin (*1)

- Resource Operation Commands

  rcxadm lserver

  rcxadm vstorage

  rcxadm storage

  rcxadm disk

  rcxadm network

  rcxadm netdevice

  rcxadm netconfig

  rcxadm pool

  rcxadm folder

  rcxadm addrset

  rcxadm chassis (*2)

  rcxadm server (*2)

  rcxadm tenant

  rcxadm tenant (for Basic mode)

  rcxadm firewall

- Image Operation Command

  rcxadm image (*2)

- L-Server Template Operation Command

  rcxadm template

- User Operation Commands

  rcxadm user

  rcxadm usergroup

  rcxadm user (for Basic mode)

  rcxadm usergroup (for Basic mode)

- Control and Environment Setup Commands

  rcxadm storagemgr (*2)

  rcxadm imagemgr (*2)

  rcxadm vmmgr

  rcxadm agtctl (*1)

  rcxadm certctl (*1)

*1: An existing Virtual Edition command. For details, refer to the "Command Reference".
*2: This is an extended Virtual Edition command.

User accounts with administrative privileges within the operating system can execute all commands. Other user accounts can execute the commands within the allowed scope by logging in beforehand using the rcxlogin command.

Executing privileged commands within a script requires the user to be logged in with administrative privileges for the operating system. Otherwise, the rcxlogin command should first be run with the -save option to grant access to privileged commands from scripts.
For details, refer to the "Command Reference".

With Resource Orchestrator, you can restrict the privileges of users by setting combinations of resources that can be accessed and operations that can be performed (roles).
For details on user accounts and roles, refer to "Appendix B Access Control by Roles" in the "Operation Guide CE".

Note

Multibyte characters cannot be used for files or storage folders used by the commands available in Resource Orchestrator.

Information

If, in Windows Server 2008, a user account with administrative privileges that does not have the user name "Administrator" starts up a command prompt from the menu, commands executed in that prompt cannot be executed with administrative privileges.
Right-click the command prompt in the menu, select [Run as administrator] from the displayed menu to start up the command prompt, and run the required command from there.

Point

Commands available on the admin server are all located under the following folder:

[Windows]
Installation_folder\Manager\bin

[Linux]
/opt/FJSVrcvmr/bin

1.2 Login Operations

This section explains the command for logging in to Resource Orchestrator.

1.2.1 rcxlogin

rcxlogin is an existing ROR VE command.
For details, refer to "2.1 rcxlogin" in the "Command Reference".

1.3 Resource Operations

This section explains the commands used to manage resources in Resource Orchestrator.

1.3.1 rcxadm lserver

Name

[Windows]
Installation_folder**Manager\bin\rcxadm lserver** - L-Server operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm lserver - L-Server operations

Format

```
rcxadm lserver create -file file.xml [-nowait]
rcxadm lserver delete -name name [-allow deldisk] [-nowait]
rcxadm lserver modify -name name -file file.xml [-nowait]
rcxadm lserver list
rcxadm lserver show -name name [-format {text|xml}]
rcxadm lserver start -name name [-nowait]
rcxadm lserver stop -name name [-force] [-nowait]
rcxadm lserver restart -name name [-force] [-nowait]
```

```
rcxadm lserver move -name name [-to folder] [-nowait]
rcxadm lserver attach -name name {-size size [-disk disk] [-from {pool|vstorage}]|-disk disk} [-exist]
[-index index] [-nowait]
rcxadm lserver detach -name name -disk disk [-online] [-system] [-force] [-allow deldisk] [-nowait]
rcxadm lserver migrate -name name [-to vmhost] [-mode {live|cold}] [-nowait]
rcxadm lserver setup -name name -type network [-dryrun]
rcxadm lserver set -name name -attr attr[,attr[...]] [-net network_name]
rcxadm lserver convert [-name name] -with with [-label label] [-comment comment] [-to folder] [-nowait]
rcxadm lserver revert -name name [-nowait]
```

Description

rcxadm lserver is the command used to perform L-Server management and operations.

Subcommands

create

    Creates an L-Server.

delete

    Deletes an L-Server. The resources allocated to the L-Server are automatically released, and the L-Server definition is also deleted.

modify

    Modifies the resources comprising an L-Server.

list

    Displays a list of L-Servers.

    The following detailed information is displayed:

    - For Physical L-Servers

Table 1.1 Physical L-Server Information

Item Name	Description
NAME	L-Server name
TYPE	Server type
SPEC (*1)	CPU performance, number of CPUs, and memory size
DISKS	Disk size
IPADDRESSES	IP address
STATUS	L-Server operation status
RESOURCES	Resource allocation status

    *1: Not displayed when using rack mount servers on which agents have not been registered.

    - For Virtual L-Servers

Table 1.2 Virtual L-Server Information

Item Name	Description
NAME	L-Server name
TYPE	Server type
SPEC	CPU performance, number of CPUs, and memory size
DISKS	Disk size When there are multiple disks, they are displayed separated by commas.

Item Name	Description
IPADDRESSES	IP address When there are multiple IP addresses, they are displayed separated by commas.
STATUS	L-Server operation status
RESOURCES	Resource allocation status

show

Displays the detailed information for an L-Server.

The following detailed information is displayed:

- For Physical L-Servers

Table 1.3 Detailed Information for Physical L-Servers

Item Name	Description
Name	L-Server name
Label	Label
Comment	Comment
ServerType	Server type
OSType	Type of OS
CPUArch	CPU architecture
CPUPerf(SPEC) (*1)	CPU performance specified (the performance of the CPU allocated to the physical server)
NumOfCPU(SPEC) (1)	Number of CPUs specified (the number of CPUs (Cores) allocated to the physical server)
MemorySize(SPEC) (*1)	Memory size specified (the amount of memory allocated to the physical server)
Model	Model name of the server to allocate to L-Server This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated)
PhysicalServer	Physical server name This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated)
OriginalServer	The physical server or resource pool to allocate to L-Servers
LastServer	The physical server that last started the L-Server This is displayed when a physical L-Server status is one of the following: - Servers have been released (preserved)
Status	L-Server operation status
PowerStatus	L-Server power status
Resources	Resource allocation status
ControlledResources	Scope of controlled resources Combinations of Server and Storage are displayed. This is displayed for L-Servers linked to configured physical servers.

Item Name	Description
NumOfDisk	The number of disks
Disk[*num*]	The disk name to allocate to L-Servers The index number of the disk element is configured in *num*. The number is "0" or larger. This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated) - Servers have been released (preserved)
DiskType[*num*]	The connection method of the disk to allocate to the L-Server The index number of the disk element is configured in *num*. The number is "0" or larger.
DiskSize[*num*]	The disk size to allocate to L-Servers The index number of the disk element is configured in *num*. The number is "0" or larger.
DiskType[*num*]	Virtual disk type of the disk to be allocated to the L-Server The index number of the disk element is configured in *num*. The number is "0" or larger.
Shared[*num*]	Shared status of disks The index number of the disk element is configured in *num*. The number is "1" or larger. When the disk is used by multiple L-Servers, "Yes" is displayed. When the disk is not used by multiple L-Servers, "No" is displayed.
OriginalStorage	Virtual storage or resource pool to create the disk to allocate to L-Servers
NumOfNIC	Number of NICs
NIC[*num*]	The network resource name assigned to L-Servers The network element of index number is configured in *num*. The number is "0" or larger.
NIC[*num*][MACAddress]	MAC address of NIC
NIC[*num*][PhysicalNum]	The number of the physical NIC corresponding to the NIC of an L-Server The number is "0" or larger.
NIC[*num*][IPAddress]	IP address to allocate to L-Servers The network element of index number is configured in *num*. The number is "0" or larger.
NIC[*num*][*netlinknum*][IpAddress]	IP address
NIC[*num*][*netlinknum*][VlanMode]	VLAN mode
NIC[*num*][*netlinknum*][DNSServer]	DNS server address
NIC[*num*][*netlinknum*][DefaultGateway]	Default gateway address
NICGroup[*num*][*netlinknum*][IpAddress]	IP address
NICGroup[*num*][*netlinknum*][VlanMode]	VLAN mode
NICGroup[*num*][*netlinknum*][DNSServer]	DNS server address

Item Name	Description
NICGroup[*num*][*netlinknum*][DefaultGateway]	Default gateway address
NICGroup[*num*][*netlinknum*][NicLinks]	NIC number to be bound
Redundancy	Server redundancy to assign to L-Servers
Positioning	Physical location of the server to allocate to L-Servers
WWNN[*num*]	WWNN to assign to an L-Server The index number of the disk element is configured in *num*. The number is "0" or larger.
WWPN[*num*]	WWPN to assign to an L-Server The index number of the disk element is configured in *num*. The number is "0" or larger.
FCConnectionPattern	FC connection pattern file

AliveMonitoring	Alive monitoring setting status
	One of the following is displayed:
	
	- on
	
	    This is displayed when alive monitoring is enabled.
	
	- off
	
	    This is displayed when alive monitoring is disabled.

Priority	Priority order for L-Server creation or startup
ReserveResources	Retaining server resources
iSCSI	Name of the disk resource to allocate to the L-Server
iSCSI DISK Index	Index number of the disk to allocate to the L-Server
iSCSI IQN[*num*][IQN]	IQN name used for the disk connected to the L-Server using iSCSI The index number of the disk element is configured in *num*. The number is "1" or larger.
iSCSI IpAddress	IP address used for the disk connected to the L-Server using iSCSI
iSCSI port	iSCSI communication port number used for the disk connected to the L-Server using iSCSI
FCSinglePath	SAN Path Status When single-path is set, "true" is displayed.

*1: Not displayed when using rack mount servers on which agents have not been registered.

- For Virtual L-Servers

Table 1.4 Detailed Information for Virtual L-Servers

Item Name	Description
Name	L-Server name
Label	Label
Comment	Comment
Template	L-Server template name
ServerImage	Image name and version

Item Name	Description
	When the L-Server version cannot be distinguished, it will not be displayed.
ServerType	Server type
VMType	VM type
OSType	Type of OS
CPUArch	CPU architecture
CPUPerf	CPU performance When the limit is not set, a hyphen ("-") is displayed.
CPUReserve (*1)	The minimum number of CPU resources to be allocated
CPUShare (*1)	The relative proportion for allocation of CPU resources
CPUWeight (*2)	The priority for allocation of CPU resources
NumOfCPU	Number of CPUs
MemorySize	Memory size
MemoryReserve (*1)	The minimum amount of memory resources to be allocated
MemoryShare (*1)	The relative proportion for allocation of memory resources
StartupRAM (*2)	Initial memory capacity to be allocated at startup
MemoryBuffer (*2)	Available memory to be reserved as a buffer
MemoryWeight (*2)	The priority for allocation of memory resources

DynamicMemory (*2)	Dynamic memory settings
	
	One of the following is displayed:
	
	- on
	
	  Displayed when dynamic memory settings are enabled.
	
	- off
	
	  Displayed when dynamic memory settings are disabled.

MaxDefinableMemory (*3)	Maximum memory size
VmHost	VM host name This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated)
VmGuest	VM name for an L-Server This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated)
OriginalServer	VM host or resource pool to create a virtual machine to allocate to L-Servers
LastServer	VM host that started the last L-Server virtual machine This is displayed when an L-Server status is one of the following: - Servers have been released (preserved)
Status	L-Server operation status
PowerStatus	L-Server power status
Resources	Resource allocation status
ControlledResources	Scope of controlled resources Combinations of Server and Storage are displayed.

Item Name	Description
	This is displayed for L-Servers linked to configured virtual machines.
NumOfDisk	The number of disks

Disk[*num*]	The disk name to allocate to L-Servers
	
	The index number of the disk element is configured in *num*. The number is "0" or larger.
	
	This is displayed when an L-Server status is one of the following:
	
	  - Resources have been allocated (allocated)
	
	  - Servers have been released (preserved)

DiskSize[*num*]	The disk size to allocate to L-Servers The index number of the disk element is configured in *num*. The number is "0" or larger.
Shared[*num*]	Shared status of disks The index number of the disk element is configured in *num*. The number is "1" or larger. The status is displayed when the disk is used by multiple L-Servers.
DiskType[*num*]	Virtual disk type of the disk to be allocated to the L-Server The index number of the disk element is configured in *num*. The number is "0" or larger.
DevicePath[num]	Device path of the disk to be allocated to the L-Server The index number of the disk element is configured in *num*. The number is "0" or larger.
OriginalStorage	Virtual storage or resource pool to create the disk to allocate to L-Servers
NumOfNIC	Number of NICs
NIC[*num*]	The network resource name assigned to L-Servers The network element of index number is configured in *num*. The number is "0" or larger.
NIC[*num*][IPAddress]	IP address to allocate to L-Servers The network element of index number is configured in *num*. The number is "0" or larger.
NIC[*num*][MACAddress]	MAC address to allocate to the L-Server The network element of index number is configured in *num*. The number is "0" or larger.

Redundancy	Server redundancy to assign to L-Servers
	
	One of the following is displayed:
	
	  - HA
	
	  - None
	
	  - VMware FT

SecondaryServer	VM host name on which a VMware FT secondary virtual machine operates If access to the VM host failed, a hyphen ("-") is displayed.
Positioning	Physical location of the server to allocate to L-Servers

AliveMonitoring	Alive monitoring setting status
	
	One of the following is displayed:
	
	  - on
	
	    This is displayed when alive monitoring is enabled.
	
	  - off
	
	    This is displayed when alive monitoring is disabled.
	
	  - A hyphen ("-")

Item Name	Description
	This is displayed when alive monitoring is not performed from Resource Orchestrator.
Exclusion	Exclusion When an operation, in which a resource set to be operated exclusively is outside the range of their user access, is performed, only the resource name is displayed.
Priority	Priority order for L-Server creation or startup
OverCommit	Setting for overcommit Only displayed when overcommit settings are enabled.
ReserveResources	Retaining server resources
Snapshot[*num*]	Snapshot collected from L-Servers The version, collected date, and comments are displayed.

*1: When values are set for VMware, it is displayed.
*2: When values are set for Hyper-V, it is displayed.
*3: In RHEL-KVM, the status of allocated resources is displayed as below.
- Resources have been allocated (allocated)
- Servers have been released (preserved)

start

Powers on an L-Server.

stop

Powers off an L-Server.

restart

Restarts the L-Server.

move

Moves an L-Server to the specified resource folder.

attach

Connects a disk resource to an L-Server and enables it to be accessed.

Note

- When an L-Server is powered on, the disk to be attached to must be recognized by the L-Server. Follow the procedure provided by the OS.

- When using physical L-Servers, disks cannot be attached to L-Servers that use iSCSI boot.

detach

Releases a disk resource from an L-Server and disables it from being accessed.

Note

When deleting the disk while the physical L-Server is powered on, it is necessary to detach the disk to be deleted in advance.

migrate

Changes the location of an L-Server to a specified host.

Specify either to perform a live migration, which changes the location of the L-Server without stopping it, or a cold migration, which changes the location of the L-Server after temporarily stopping it.
For physical L-Servers, specification is not possible.

setup

When using a physical L-Server, the network information is sent to a specified L-Server.

The information is stored as a file in the destination server.
The storage location and file are as follows:

- File name

net_info.conf

- Storage location of the file

[Windows]
Agent_installation_folder\Resource Orchestrator\Agent\etc\net

[Linux]
/etc/opt/FJSVrcxat/net/

set

Configures specific parameters, for a physical L-Server.

When the -attr option is specified, the boot mode can be set.

convert

Links an L-Server with a configured virtual machine or physical server.

revert

Cancels the link between an L-Server and a configured physical server or virtual machine.

Note

. . . .

- When the disk resource is a LUN that has been created in advance, a LUN for iSCSI boot, or a disk resource for a virtual L-Server, the data on the disk will not be deleted.
  When releasing a disk using delete or detach, it is recommended to delete the data on the disk.
  For details on the method for deleting the data on a disk, refer to cautionary notes in "7.5 Storage Resources" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- To prevent a disk that has been saved after detachment from virtual storage from being re-used unintentionally in an L-Server, such disks cannot be automatically selected and are not selected by create or attach when using pool specification.
  To connect a disk that has been saved after separation from virtual storage when deleting the disk to an L-Server using create or attach, specify the disk explicitly.

. . . .

Options

-file *file*.xml

In *file*.xml, specify the path of the XML file that defines the resources that comprise the L-Server.

When modifying the basic information or specifications of an L-Server, only elements to be modified can be specified in the XML file. When modifying an L-Server for which only the configuration definition has been created, unmodified information must be described also.

For details on the XML file definition, refer to "2.3 L-Servers".

[Xen]
When the VM type is "RHEL-Xen", the image name cannot be specified.

-format text|xml

Specify the display format. You can specify text or xml format.

When -format is omitted, it is displayed in text format.

When performing the following operation, specify the XML and obtain the information.

For XML, refer to "2.2 L-Server Template" or "2.3 L-Servers".

- When changing an L-Server using a command

- When creating an L-Server template from an existing L-Server

- When creating an L-Server with the same configuration as an existing L-Server using a command

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the L-Server specified in the subcommand to complete its execution.

-name *name*

In *name*, specify the name of the target L-Server to perform an operation with.
To specify an L-Server that is located in a tenant folder or a resource folder, it is necessary to also specify the tenant folder name or the resource folder name connected with a slash ("/").

When specifying the convert subcommand, specify the name for the L-Server. For the characters that can be used for L-Server names, refer to the list of items specified in XML Definitions in "2.3.1 Definition Information for Physical L-Servers (XML)" and "2.3.2 Definition Information for Virtual L-Servers (XML)".

When specifying the convert subcommand and omitting the -name option, the L-Server name is set as follows.

- When linking a physical server to an L-Server

  - If the physical server name of the configured physical server is a possible value for the L-Server name described in "Table 2.3 List of Items Specified in XML Definitions for Physical L-Servers" in "2.3.1 Definition Information for Physical L-Servers (XML)"

  The physical server name will be set as the L-Server name.

  - If a value other than a possible value is used for the L-Server name

  An error will occur and the operation will be aborted.

- When linking a configured virtual machine to an L-Server

  - If the VM name of the configured virtual machine is a possible value for the L-Server name described in "Table 2.5 List of Items Specified in XML Definitions for Virtual L-Servers" in "2.3.2 Definition Information for Virtual L-Servers (XML)"

  The VM name will be set as the L-Server name.

  - If a value other than a possible value is used for the L-Server name

  An error will occur and the operation will be aborted.

-to *vmhost*

For virtual L-Servers, specify the name of the destination VM host in *vmhost*. The VM host must be registered in a VM pool.
If this option is not specified, a VM host is automatically selected from the VM pools.

Specify a destination VM host with available CPU capacity and memory. If there is insufficient CPU capacity or memory, migration between servers or starting of L-Servers may fail.

-mode live|cold

For virtual L-Servers, specify the migration method.

- When performing a live migration

  Specify "live".

- When performing a cold migration

  Specify "cold".

This may not be able to be specified, depending on the power state of the VM guest.
When omitted, the appropriate type will be chosen depending on the state of the VM guest.

-force

For stop/restart, use this option to forcibly stop or restart an L-Server without shutting down the operating system it is running on.

For detach, also use this option to release disk resources, ignoring any errors which occur when releasing disk resources for physical L-Servers. Specify this option only for physical L-Servers.

-to *folder*

Specify a resource folder to place an L-Server in for *folder*. For the hierarchized resource folder, specify the resource folder name using slashes ("/"). When omitted, the L-Server is placed in the home folder.

When executed by a user who has multiple access scopes specified, it cannot be omitted. Specify a resource folder.

-size *size*

In *size*, specify the disk capacity, in units of gigabytes. Up to one decimal place can be specified.

-from *pool*|*vstorage*

Specify the name of the resource pool or virtual storage resource from which to take the disk capacity to allocate to the L-Server.

For a resource pool or a virtual storage resource located in the resource folder, specify the resource folder name using slashes ("/").

When omitted, resource selection is performed automatically with priority given to storage pools.

-disk *disk*

Specify the name of the disk resource to allocate to the L-Server or release from the L-Server.

-index *index*

Specify the disk number of the disk resource. By default, the number of the last disk allocated plus one is used. The maximum value differs according to the server type.

-online

Use this option only when removing the disk from the L-Server while the server is running. If you remove a disk in use while the server is running, inconsistencies may occur in the data or the OS management information. Use this option after checking the status of the OS and applications.

[Oracle VM]
The disk cannot be removed while the L-Server is running.

-exist

Specify when connecting an already created LUN or a disk resource created (and saved) from virtual storage.

Specify this option only for physical L-Servers or virtual L-Servers with RHEL-KVM or Hyper-V.

When specifying this option for virtual L-Servers with Hyper-V, the -size option cannot be specified at the same time.

-dryrun

The network information file is output.

```
NIC0_MacAddress="xx:xx:xx:xx:xx:xx"

# Single NIC Information
SingleNics="0"
NIC0_NetworkLinks="0"

NIC0_0_VlanMode="untagged"
NIC0_0_IpAddress="192.168.24.124"
NIC0_0_Vlanid=1
NIC0_0_Netmask="255.255.255.0"
NIC0_0_DefaultGateway="192.168.24.254"
```

-attr *attr*

For physical L-Servers, set the boot mode and SAN path status.

- For boot mode, specify "-attr boot={default|pxe}".

  - When setting the boot mode to PXE

    Specify "pxe".

  - When setting the initial boot mode.

    Specify "default".

- When setting SAN path status, specify "-attr fcsinglepath={true|false}".

  - When setting a single-path to the SAN for the physical L-Server

    Specify "true".

  - When setting a multi-path to the SAN for the physical L-Server

    Specify "false".

  - If the SAN path status for the physical L-Server and the value specified in this option are the same

    The current settings are kept.

  - If the physical L-Server is powered on

    If this option is specified, an error will occur.

Both boot and fcsinglepath can be specified at the same time.

-net *network_name*

In *network_name*, specify the network resource name to perform PXE boot.

When PXE is set for the boot mode, perform PXE boot from the network of the specified network resource.

-allow deldisk

This option can only be specified for deldisk.

Specify this option when there are no problems even if disk contents are deleted by the following operations. Omitting this option will cause an operational failure when there is the possibility that disk contents will be deleted by these operations.

- Deleting an L-Server

- Releasing disk resources from an L-Server

-deny deldisk

This option can only be specified for deldisk.

Specify this option when the content of the disk is to be saved rather than deleting the disk resource from virtual storage, as the following procedure describes.

- Releasing disk resources from an L-Server

Specify this option only for physical L-Servers or virtual L-Servers with Hyper-V. This option and the -allow deldisk option cannot be specified at the same time.
When the disk resource is not a LUN created in advance, either -allow deldisk or -deny deldisk must be specified.

The option is only valid when detaching a disk. The disk resource cannot be saved permanently by using this option.
When this option is to be used to save the content of the disk rather than deleting the disk resource from virtual storage, the disk resource is automatically registered in the storage pool in which the virtual storage resource that is the origin of the disk resource is registered.

-type network

For physical L-Servers, specify in order to send network information to the L-Server that is specified for the -name option.

-label *label*

In *label*, specify the label for the L-Server.

-comment *comment*

In *comment*, specify the comments for the L-Server.

-with *with*

In *with*, specify the virtual machine or physical server linked to an L-Server.

Specify the resource folder name or the resource pool name connected with slashes ("/").

```
/Resource_folder_name/Resource_pool_name/VM_host_name/Virtual_machine_name
/Resource_folder_name/Resource_pool_name/Physical_server name
/Resource_pool_name/VM_host_name/Virtual_machine_name
/Resource_pool_name/Physical_server_name
```

Examples

- To display the list of L-Servers:

```
>rcxadm lserver list <RETURN>
NAME            TYPE        SPEC            DISKS           IPADDRESSES
STATUS    RESOURCES
----            ----        --------------  --------------  -----------
------    ---------
L-Server1       Virtual     1.0GHz,1,2.0GB  30.0GB,100.0GB  10.20.30.40,10.20.40.50
normal    allocated
L-Server2       Virtual     1.0GHz,1,2.0GB  30.0GB,100.0GB  10.20.30.41
stop      preserved
L-Server3       Virtual     1.0GHz,1,2.0GB  30.0GB,100.0GB  -
stop      defined
L-Server11      Physical    2.3GHz,2,72.0GB 30.0GB          10.30.40.2
normal    allocated
L-Server12      Physical    2.3GHz,2,72.0GB 30.0GB          10.30.40.3
stop      preserved
L-Server13      Physical    2.3GHz,2,72.0GB 30.0GB          -
stop      defined
```

- To display the detailed information for a virtual L-Server:

```
>rcxadm lserver show -name /TenantA/test4 <RETURN>
Name: test4
ServerType: Virtual
VMType: VMware
OSType: Microsoft Windows Server 2008 (32-bit)
CPUArch: IA
CPUPerf: 1GHz
CPUReserve: 0.7GHz
CPUShare: 1000
NumOfCPU: 1
MemorySize: 1GB
MemoryReserve: 0.7GB
MemoryShare: 1000
VmHost: vmhost
VmGuest: test4-62
Status: stop
PowerStatus: off
Resources: allocated
NumOfDisk: 1
Disk[0]: test4-0-disk0
DiskSize[0]: 4GB
NumOfNIC: 1
NIC[0]: vnet1
NIC[0][IPAddress]: 192.168.1.2
NIC[0][MACAddress]: 00:50:56:91:09:21
Redundancy: None
```

```
Positioning: Fixed
Priority: 128
Repurpose: true
OverCommit: true
```

- To display the detailed information for a physical L-Server (when created with CPU Performance, Number of CPU, and Memory Size specifications):

```
>rcxadm lserver show -name /TenantA/test5 <RETURN>
Name: test5
ServerType: Physical
...
CPUPerf(SPEC): 1.8GHz (2.0GHz)
NumOfCPU(SPEC): 1 (2)
MemorySize(SPEC): 8.0GB (12.0GB)
PhysicalServer: BX920-1
PhysicalServerModel: PRIMERGY BX922 S4
...
```

- To display the detailed information for a physical L-Server (when created with the Model Name specification):

```
>rcxadm lserver show -name /TenantA/test6 <RETURN>
Name: test6
ServerType: Physical
...

Model: PRIMERGY BX922 S4
CPUPerf(SPEC): - (2.0GHz)
NumOfCPU(SPEC): - (2)
MemorySize(SPEC): -(12.0GB)
PhysicalServer: BX920-1
PhysicalServerModel: PRIMERGY BX922 S4
...
```

1.3.2 rcxadm vstorage

Name

[Windows]
Installation_folder**Manager\bin\rcxadm vstorage** - virtual storage resource operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm vstorage - virtual storage resource operations

Format

```
rcxadm vstorage list [-verbose]
rcxadm vstorage show -name name
rcxadm vstorage move -name name -to pool [-nowait]
rcxadm vstorage modify -name name [-label label] [-comment comment]
```

Description

rcxadm vstorage is the command used to perform operations on the virtual storage resources provided by storage management software and VM management software. Virtual storage is a storage resource that can be allocated part of a disk resource by specifying a size.

Virtual storage resources enable you to create disk resources to connect to L-Servers.

Subcommands

list

Displays a list of virtual storage resource information.

The following detailed information is displayed:

Table 1.5 Virtual Storage Resource Information

Item Name	Description
NAME	Virtual storage resource name
LABEL	Virtual storage resource label
COMMENT (*1)	Virtual storage resource comment
TOTAL	Total virtual storage resource size [Oracle VM] If the virtual storage resource is a storage repository of Oracle VM, it is not displayed.

FREE	Virtual storage resource free space
	
	When the allocated size that is created using Thin Provisioning and Automatic Storage Layering exceeds the total size of the virtual storage resources, the excessive size is displayed with a minus sign ("-").
	For details on the virtual storage resources that Thin Provisioning and Automatic Storage Layering can be applied to, refer to "4.3.1.1 Storage Environment Preparation" in the "Setup Guide CE".
	
	[VMware]
	The excess size, with a minus sign ("-"), is displayed only when the storage resource is registered in a storage pool that thin provisioning has been applied to.
	
	In the following cases, the actual free space is displayed:
	
	  - The storage resource is registered in a storage pool that thin provisioning is not applied to
	
	  - The storage resource is not registered in a storage pool
	
	[Oracle VM]
	For the displayed value, refer to "E.5.5 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE".

USED (*1)	Virtual storage resource used space
	
	For virtual storage resources that Thin Provisioning and Automatic Storage Layering are applied to, the virtually allocated space is displayed.
	
	[VMware]
	Virtually allocated space is displayed only when the storage resource is registered in a storage pool that thin provisioning has been applied to.
	
	In the following cases, actual amount of used space is displayed.
	
	  - The storage resource is registered in a storage pool that thin provisioning is not applied to
	
	  - The storage resource is not registered in a storage pool
	
	[Oracle VM]
	If the virtual storage resource is a storage repository of Oracle VM, it is not displayed.

STATUS	Virtual storage resource status

ATTRIBUTES (*1)	One of the following is displayed:
	
	  - Thin
	
	    Displayed when the thin provisioning attribute is applied.

Item Name	Description
	- Thick Displayed when the thick provisioning attribute is applied. [VMware] One of the following is displayed: - A hyphen ("-") Displayed when the virtual storage resource is not registered in a storage pool. - Thin Displayed when the virtual storage resource is registered in a storage pool to which the thin provisioning attribute is applied. - Thick Displayed when the virtual storage resource is registered in a storage pool to which the thin provisioning attribute is not applied.

*1: When specifying -verbose for the option, it is displayed.

show

Displays the detailed information for a virtual storage resource.

The following detailed information is displayed:

Table 1.6 Detailed Information for Virtual Storage Resources

Item Name	Description
NAME	Virtual storage resource name
LABEL	Virtual storage resource label
COMMENT	Virtual storage resource comment
TOTAL SIZE	Total virtual storage resource size [Oracle VM] If the virtual storage resource is a storage repository of Oracle VM, it is not displayed.
FREE SIZE	Virtual storage resource free space When the allocated size that is created using Thin Provisioning and Automatic Storage Layering exceeds the total size of the virtual storage resources, the excessive size is displayed with a minus sign ("-"). For details on the virtual storage resources that Thin Provisioning and Automatic Storage Layering can be applied to, refer to "4.3.1.1 Storage Environment Preparation" in the "Setup Guide CE". [VMware] The excess size, with a minus sign ("-"), is displayed only when the storage resource is registered in a storage pool that thin provisioning has been applied to. In the following cases, the actual free space is displayed: - The storage resource is registered in a storage pool that thin provisioning is not applied to - The storage resource is not registered in a storage pool [Oracle VM] For the displayed value, refer to "E.5.5 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE".
USED SIZE	Virtual storage resource used space

Item Name	Description

	For virtual storage resources that Thin Provisioning and Automatic Storage Layering are applied to, the virtually allocated space is displayed.
	
	[VMware]
	
	Virtually allocated space is displayed only when the storage resource is registered in a storage pool that thin provisioning has been applied to.
	
	In the following cases, actual amount of used space is displayed.
	
	  - The storage resource is registered in a storage pool that thin provisioning is not applied to
	
	  - The storage resource is not registered in a storage pool
	
	[Oracle VM]
	If the virtual storage resource is a storage repository of Oracle VM, it is not displayed.

STATUS	Virtual storage resource status

ATTRIBUTES	One of the following is displayed:
	
	  - Thin
	
	    Displayed when the thin provisioning attribute is applied.
	
	  - Thick
	
	    Displayed when the thick provisioning attribute is applied.
	
	[VMware]
	One of the following is displayed:
	
	  - A blank space (" ")
	
	    Displayed when the virtual storage resource is not registered in a storage pool.
	
	  - Thin
	
	    Displayed when the virtual storage resource is registered in a storage pool to which the thin provisioning attribute is applied.
	
	  - Thick
	
	    Displayed when the virtual storage resource is registered in a storage pool to which the thin provisioning attribute is not applied.

move

Moves a virtual storage resource to the specified resource pool.

modify

Changes labels and comments of virtual storage resources.

Options

-name *name*

In *name*, specify the name of the target virtual storage resource to perform an operation with.

-to *pool*

Specify the destination resource pool in *pool*.

For the resource pool allocated in the resource folder, specify the resource folder name using slashes ("/").

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the virtual storage resource specified in the subcommand to complete its execution.

-label *label*

>In *label*, specify the new label.

-verbose

>Specify when displaying detailed information.

-comment *comment*

>In *comment*, specify the new comments.

Examples

- To display the list of the virtual storage resource information:

```
>rcxadm vstorage list <RETURN>
NAME                   LABEL    TOTAL       FREE        STATUS
----                   -----    -----       ----        ------
vCenterServer_Storage1  -       100.0GB      80.0GB
normal
vCenterServer_data02    -       100.0GB      40.0GB
normal
vCenterServer_data03    -       100.0GB      40.0GB
normal
vCenterServer_data04    -       100.0GB      20.0GB
normal
```

- To display the details of the virtual storage resource information:

```
>rcxadm vstorage list -verbose <RETURN>
NAME                   LABEL  COMMENT  TOTAL    FREE     USED     STATUS     ATTRIBUTES
----                   -----  -------  -----    ----     ----     ------     ----------
vCenterServer_Storage1  -      -        100.0GB  80.0GB  20.0GB  normal  Thin
vCenterServer_data02    -      -        100.0GB  40.0GB  60.0GB  normal  Thick
vCenterServer_data03    -      -        100.0GB  40.0GB  60.0GB  normal  Thick
vCenterServer_data04    -      -        100.0GB  20.0GB  80.0GB  normal
Thick
```

- To display the detailed information for a virtual storage resource:

```
>rcxadm vstorage show -name vCenterServer_Storage1 <RETURN>
Name: vCenterServer_Storage1
Label:
Comment:
Total Size: 100.0GB
Free Size: 80.0GB
Used Size: 20.0GB
Status: normal
Attributes: Thin
```

1.3.3 rcxadm storage

Name

[Windows]
Installation_folder**Manager\bin\rcxadm storage** - physical storage unit resource operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm storage - physical storage unit resource operations

Format

```
rcxadm storage list [-verbose]
rcxadm storage show -name name
rcxadm storage modify -name name {[-label label] [-comment comment]}
```

Description

rcxadm storage is the command used to perform operations on the physical storage unit resources managed by storage management software.

Subcommands

list

Displays a list of physical storage unit resource information.

The following detailed information is displayed:

Table 1.7 Physical Storage Unit Resource Information

Item Name	Description
NAME	Physical storage unit resource name
LABEL	Physical storage unit resource label
COMMENT (*1)	Physical storage unit resource comment
IP ADDRESS	Physical storage unit resource IP address
STATUS	Physical storage unit resource status
MODEL (*1)	Physical storage unit resource model name
DEVICE ID (*1)	Physical storage unit resource unit identifier

*1: When specifying -verbose for the option, it is displayed.

show

Displays details of physical storage unit resource information.

The following detailed information is displayed:

Table 1.8 Detailed Information for Physical Storage Unit Resources

Item Name	Description
NAME	Physical storage unit resource name
LABEL	Physical storage unit resource label
COMMENT	Physical storage unit resource comment
MODEL	Physical storage unit resource model name
SERIAL NUMBER	Physical storage unit resource serial number
IP ADDRESS	Physical storage unit resource IP address
STATUS	Physical storage unit resource status
PORT NUMBER	Physical storage unit resource port number
MANAGEMENT SOFTWARE	Storage management software name
DEVICE ID	Physical storage unit resource unit identifier

modify

   Changes labels and comments of physical storage unit resources.

Options

-name *name*

   In *name*, specify the name of the target physical storage unit resource to perform an operation with.

-verbose

   Specify when displaying detailed information.

-label *label*

   In *label*, specify the new label.

-comment *comment*

   In *comment*, specify the new comments.

Examples

  - To display a list of physical storage unit resource information:

```
>rcxadm storage list <RETURN>
NAME                    LABEL    IP ADDRESS       STATUS
----                    -----    ----------       ------
DX90-1                  -        192.168.0.201    normal
```

  - To display the details of physical storage unit resource information:

```
>rcxadm storage list -verbose <RETURN>
NAME          LABEL    COMMENT  IP ADDRESS      STATUS   MODEL                    DEVICE ID
----          -----    -------  ----------      ------   -----
---------
DX90-1        -        -        192.168.0.201   normal   ETERNUSDXL(ET09E24A)
192.168.0.201
```

  - To display the detailed information for a virtual storage resource:

```
>rcxadm storage show -name DX90-1 <RETURN>
Name: DX90-1
Label:
Comment:
Model: ETERNUSDXL(ET09E24A)
Serial number: 1234567890
IP address: 192.168.0.201
Status: normal
Port number: 6
Management software: ETERNUS SF Storage Cruiser
Device ID: 192.168.0.201
```

1.3.4 rcxadm disk

Name

[Windows]
Installation_folder**Manager\bin\rcxadm disk** - disk resource operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm disk - disk resource operations

Format

```
rcxadm disk register -file file.xml
rcxadm disk unregister -name name
rcxadm disk modify -name name {{[-label label] [-comment comment]} | -file file.xml}
rcxadm disk list [-verbose]
rcxadm disk show -name name
rcxadm disk move -name name -to pool [-nowait]
```

Description

rcxadm disk is the command used to perform operations on disk resources. The following disk resources are the resources to be allocated to the L-Server.

- Virtual disks of VM guests

- LUNs of ETERNUS and EMC CLARiiON

- EMC Symmetrix DMX

- EMC Symmetrix V+MAX Devices

- FlexVol of NetApp

Disk resources provide virtual disks to L-Servers.

Subcommands

register

[KVM]
Creates a disk resource for a virtual L-Server and registers the disk resource in a storage pool.

In the following cases, an error will occur and the settings will not be modified.

- The specified tenant does not exist

- The specified physical resource pool does not exist

- The specified file does not exist

- Errors or inconsistencies exist in the xml file

Disk resources for virtual L-Servers can be registered in a storage pool, regardless of whether the Thin Provisioning attribute is applied to that storage pool. It is recommended to register disk resource in a storage pool which has the same attributes as the disk allocation method in order to standardize the operation so the disk allocation method can be specified when selecting storage pools such as VMware.

unregister

[KVM]
Releases the registration of a disk resource for a virtual L-Server.

The registration in the storage pool cannot be canceled. When a disk resource has been registered in a storage pool, cancel registration of the disk resource from the storage pool using the rcxadm pool command, and then cancel registration of the disk resource using this subcommand.
In the following cases, an error will occur and the settings will not be modified.

- The specified disk resource does not exist

- The specified disk resource is not a raw device or a partition

- The disk resource for deletion is registered in the storage pool

[Hyper-V]
Unregister a disk resource of automatically created LUNs.

The registration in the storage pool cannot be canceled. When the disk resource has been registered in a storage pool, cancel registration of the disk resource using this subcommand after canceling registration of the disk resource from the storage pool using the rcxadm pool command. In the following cases, an error will occur and the operation will be aborted:

- The specified disk resource is not an automatically created LUN that is being retained

- The specified disk resource is used for an L-Server.

- The disk resource for deletion is registered in the storage pool

modify -name *name* {[-label *label*] [-comment *comment*]}

Changes labels and comments of disk resources.

modify -name *name* -file *file*.xml

[KVM]
Modifies the properties of a disk resource for a virtual L-Server.
The following operations can be performed:

- Adding or deleting of a VM host that uses the disk resource

- Modifying of the device path

- Modifying of the size

In the following cases, an error will occur and the settings will not be modified.

- Pool elements are specified

- The specified disk resource does not exist

- The specified disk resource is not a raw device or a partition

- There is an L-Server that uses the disk resource for deletion

- Errors or inconsistencies exist in the xml file

The IP address of a VM host is only used to identify the VM host.
If the IP address is modified after the registration of raw device or partition information, specify the new IP address.
The IP address of the VM host cannot be modified with this command.
The disk resource name cannot be modified.
To move the disk resource between resource pools, use the rcxadm disk move command.

list

Displays a list of disk resource information.

The following detailed information is displayed:

Table 1.9 Disk Resource Information

Item Name	Description
NAME	Disk resource name
LABEL	Disk resource label
COMMENT (*1)	Disk resource comment
TOTAL	Total disk resource size
STATUS	Disk resource status
VSTORAGE NAME (*1)	Virtual storage resource name that is the source for disk resource creation
SHARED (*1)	Shared status of disks One of the following is displayed:

Item Name	Description
	- Yes The status is displayed when the disk is used by multiple L-Servers. - No The status is displayed when the disk is not used by multiple L-Servers.
UNIT_NAME (*1)	Identifier of the physical storage unit resource where disk resources exist
VOLUME_ID (*1)	Volume identifier of the physical storage unit corresponding to disk resources
PRE_CREATED (*1)	One of the following is displayed: - Yes Displayed when the disk was created using storage management software beforehand. - No Displayed when the disk was created using Resource Orchestrator.
ATTRIBUTES (*1)	One of the following is displayed: - Thin Displayed when the thin provisioning attribute is applied. - Thick Displayed when the thick provisioning attribute is applied. - A hyphen ("-") Displayed for a disk resource using an iSCSI connection, or a disk resource for a virtual L-Server.
LAST_L-SERVER (*1)	The name of the L-Server that was last used is displayed if the disk resource is not connected to any L-Server. If it is an L-Server located in the tenant folder or resource folder, the name of the tenant folder or resource folder is also displayed. The information in this item is not changed even if the name of the L-Server is changed or the L-Server is deleted after reducing disks in the L-Server.

*1: When specifying -verbose for the option, it is displayed.

show

Displays the detailed information for a disk resource.

The following detailed information is displayed:

Table 1.10 Detailed Information for Disk Resources

Item Name	Description
NAME	Disk resource name
LABEL	Disk resource label
COMMENT	Disk resource comment
TOTAL	Total disk resource size
STATUS	Disk resource status
VSTORAGE NAME	Virtual storage resource name that is the source for disk resource creation
SHARED	Shared status of disks One of the following is displayed:

Item Name	Description
	- Yes The status is displayed when the disk is used by multiple L-Servers. - No The status is displayed when the disk is not used by multiple L-Servers.
POOL_NAME	Name of the storage pool where disk resources have been registered
UNIT_NAME	Identifier of the physical storage unit resource where disk resources exist
VOLUME_ID	Volume identifier of the physical storage unit corresponding to disk resources
L-SERVER[*num*]	Name of the L-Server to which disk resources are being connected (*diskindex*) In *diskindex*, the index number corresponding to the disk element of the L-Server to which disk resources are being connected is set. When the disk resource is being shared among multiple L-Servers, the index number of the L-Server is set in *num*. The number is "0" or larger.
LAST_L-SERVER	The name of the L-Server that was last used is displayed if the disk resource is not connected to any L-Server. If it is an L-Server located in the tenant folder or resource folder, the name of the tenant folder or resource folder is also displayed. The name of the L-Server that was last used is displayed if the disk resource is not connected to any L-Server. The information in this item is not changed even if the name of the L-Server is changed or the L-Server is deleted after reducing disks in the L-Server.
PRE_CREATED	One of the following is displayed: - Yes Displayed when the disk was created using storage management software beforehand. - No Displayed when the disk was created using Resource Orchestrator.
ATTRIBUTES	One of the following is displayed: - Thin Displayed when the thin provisioning attribute is applied. - Thick Displayed when the thick provisioning attribute is applied. - A hyphen ("-") Displayed for a disk resource using an iSCSI connection, or a disk resource for a virtual L-Server.
Alias	If an alias has been set for the ETERNUS LUN corresponding to the disk resource, the alias name is displayed. This item is not displayed in the following cases. - If an alias has not been set for the ETERNUS LUN corresponding to the disk resource - If the disk resource is not an ETERNUS LUN

Item Name	Description
	If the alias name of the ETERNUS LUN corresponding to the disk separated from the virtual storage has been changed using the ETERNUS WebGUI, the alias name in the disk details will be updated a certain time later.
iSCSI[*num*] [STORAGE IQN]	IQN name of the storage port used by disk resources with which iSCSI connection is made The index number of the disk element is configured in *num*. The number is "1" or larger.
iSCSI[*num*] [STORAGE IPAddress]	IP address of the storage port used by disk resources with which iSCSI connection is made The index number of the disk element is configured in *num*. The number is "1" or larger.
iSCSI[*num*] [SERVER IQN]	IQN name of the server used by disk resources with which iSCSI connection is made The index number of the disk element is configured in *num*. The number is "1" or larger.
iSCSI[*num*] [SERVER IPAddress]	IP address of the server used by disk resources with which iSCSI connection is made The index number of the disk element is configured in *num*. The number is "1" or larger.
iSCSI[*num*] [port]	iSCSI communication port number used by disk resources with which iSCSI connection is made The index number of the disk element is configured in *num*. The number is "1" or larger.

iSCSI[*num*] [Authentication Method]	Authentication mode adapted to iSCSI communication used by disk resources with which iSCSI connection is made
	
	One of the following is displayed:
	
	- NONE
	
	  Displayed when not using authentication for iSCSI communications.
	- CHAP
	
	  Displayed when using CHAP authentication.
	- MutualCHAP
	
	  Displayed when using mutual authentication.
	
	The index number of the disk element is configured in *num*. The number is "1" or larger.

FilePath	[Hyper-V] The file path corresponding to the path on VM management software is displayed when a disk resource that is created (and saved) from virtual storage has no connection with any L-Servers.

move

    Moves disk resources to the specified resource pool. Only disk resources created in advance can be moved.

Options

-file *file*.xml

[KVM]
In *file*.xml, specify the XML file that defines the disk resource information for a virtual L-Server.
When the register subcommand is specified, the disk resource information that is unregistered will be written to the XML file.
When specifying the modify subcommand, registered disk resource information that is already registered will be written to the XML file.
For details on the XML file definition, refer to "2.4.1 Disk Resources [KVM]".
For details on the commands that help the creation of XML file definitions, refer to "1.7.21 rcxvmdisk" and "1.7.20 rcxvmdiskagt".

-pool *pool*

Specify the target resource pool name by level.
Resource_folder_name/*Resource_pool_name*

-disk *disk*

Specify the disk resource to delete.

> **Note**
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>
> Registration of a raw device disk resource or a partition disk resource for a virtual L-Server cannot be released using the rcxadm pool unregister command.
>
> To release the registration, use the rcxadm disk unregister command.
> ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

-verbose

Specify when displaying detailed information.

-name *name*

In *name*, specify the name of the target disk resource to perform an operation with.

-to *pool*

Specify the destination resource pool in *pool*.
For the resource pool allocated in the resource folder, specify the resource folder name using slashes ("/").

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the disk resource specified in the subcommand to complete its execution.

-label *label*

In *label*, specify the new label.

-comment *comment*

In *comment*, specify the new comments.

Examples

- To display the list of disk resource information:

```
>rcxadm disk list <RETURN>
NAME                          LABEL       TOTAL    STATUS
----                          -----       -----    ------
P192-168-0-201_R0x0000_V0x0004   -          15.0GB   normal
P192-168-0-201_R0x0000_V0x0006   -           6.0GB   normal
```

- To display a list of detailed disk resource information:

```
>rcxadm disk list -verbose <RETURN>
NAME             LABEL COMMENT TOTAL   STATUS VSTORAGE_NAME   SHARED UNIT_NAME
VOLUME_ID PRE_CREATED ATTRIBUTES LAST_L-SERVER
----             ----- ------- -----   ------ -------------   ------ ---------
--------- ----------- ---------- ------
P192-168-0-201_V0x0004 -     -      15.0GB normal P192-168-0-201 No   192.168.0.201
0x0004  Yes Thin  /tenant01/lserver03
P192-168-0-201_V0x0006 -     -       6.0GB normal P192-168-0-201 No   192.168.0.201
0x0006  Yes Thin  -
```

- To display the detailed information for a disk resource:

```
>rcxadm disk show -name Physical-L-Server-0-disk0 <RETURN>
Name: Physical-L-Server-0-disk0
Label:
Comment:
Total Size: 10.0GB
Status: normal
Vstorage Name: P192-168-0-201_R0x0003
Shared: No
Pool Name: /StoragePool
Unit Name: DX90-1(192.168.0.201)
Volume Id: 0x0065
L-Server: /Physical-L-Server(0)
Pre Created: No
Attributes: Thin
Alias: Physical-L-00000
```

- To display the detailed information for a disk resource with which has an iSCSI connection:

```
>rcxadm disk show -name iSCSI-Disk-0 <RETURN>
Name: iSCSI-Disk-0
Label:
Comment:
Total Size: 10.0GB
Status: normal
Vstorage Name: iSCSI-vstorage
Shared: No
Pool Name: /StoragePool
Unit Name: iSCSI-storagemgr
Volume Id:
L-Server:
Pre Created: Yes
Attributes: -
iSCSI[0] [STORAGE IQN]: iqn.2011-03.com.fujitsu:iscsi:storage-0
iSCSI[0] [STORAGE IPAddress]: 192.168.0.1
iSCSI[0] [SERVER IQN]: iqn.2011-03.com.fujitsu:iscsi:server-01
iSCSI[0] [SERVER IPAddress]: 192.168.0.10
iSCSI[0] [port]: 3260
iSCSI[0] [Authentication Method]: CHAP
iSCSI[1] [STORAGE IQN]: iqn.2011-03.com.fujitsu:iscsi:storage-1
iSCSI[1] [STORAGE IPAddress]: 192.168.0.2
iSCSI[1] [SERVER IQN]: iqn.2011-03.com.fujitsu:iscsi:server-01
iSCSI[1] [SERVER IPAddress]: 192.168.0.11
iSCSI[1] [port]: 3260
iSCSI[1] [Authentication Method]: CHAP
```

1.3.5 rcxadm network

Name

[Windows]
Installation_folder**Manager\bin\rcxadm network** - network resource operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm network - network resource operations

Format

```
rcxadm network create -file file.xml [-nowait]
rcxadm network list
rcxadm network show -name name [-format {text|xml}]
rcxadm network move -name name -to pool [-nowait]
rcxadm network delete -name name [-nowait]
rcxadm network modify -name name -file file.xml [-nowait]
```

Description

rcxadm network is the command used to operate network resources.
Define network resources in the network used for a communication path using this command. IP address ranges to be allocated and subnet mask information can be managed.

Subcommands

create

Creates a network resource.

When the network device auto-configuration function is used, the script deployed for the configuration is executed and the network devices are automatically configured (network device definitions are added).

modify

Changes a network resource.

When the network device auto-configuration function is used, the script deployed for the configuration modification is executed and the network devices are automatically configured (network devices definitions are modified).

list

Displays a list of network resources.

The following detailed information is displayed:

Table 1.11 Network Resource Information

Item Name	Description
NAME	Network resource name
VLAN_ID	Network resource VLAN ID
SUBNET	Network resource subnet
LABEL	Network resource label

TYPE	Network Resource Type
	
	One of the following is displayed:
	
	- For an admin LAN
	
	  "admin" is displayed.
	
	- For a public LAN or iSCSI LAN
	
	  A blank space is displayed.

show

Displays the details for a network resource.

The following detailed information is displayed:

Table 1.12 Detailed Information for Network Resources

Item Name	Description
NAME	Network resource name

TYPE	Network Resource Type
	
	One of the following is displayed:
	
	- For an admin LAN
	
	  "admin" is displayed.
	
	- For a public LAN or iSCSI LAN
	
	  A blank space is displayed.

LABEL	Network resource label

AUTO	Automatic configuration for network resources
	
	One of the following is displayed:
	
	- When a network environment configured automatically is used
	
	  "true" is displayed.
	
	- When a network environment configured manually is used
	
	  "false" is displayed.

COMMENT	Network resource comment
VLAN_ID	Network resource VLAN ID
PHYSICAL_LAN_SEGMENT	Network resource physical VLAN segment name If no physical LAN segment is set, no content is displayed.

AUTO_SWITCH_CONFIGURATION	Automatic configuration for network devices (L2 switches)
	
	One of the following is displayed:
	
	- When performing automatic configuration for network devices (L2 switches)
	
	  "true" is displayed.
	
	- When not performing automatic configuration for network devices (L2 switches)
	
	  "false" is displayed.
	
	When auto-configuration of network devices (L2 switches) is not configured, only the item name is displayed and the content of auto-configuration is not displayed.

RULESET_NAME	Name of the ruleset used for network resources When there is no ruleset registered, only the item name is displayed and the ruleset name is not displayed.
SUBNET	Network resource subnet
MASK	Network resource subnet mask
START - END	IP address range auto-configuration

Item Name	Description
EXCLUDE_ADDRESS_RANGE [*num*]	Exclusion range of IP addresses for auto-configuration In *num*, the index number of an IP address range to be excluded is displayed. The number is an integer starting from "0".
DEFAULT_GATEWAY	Default gateway If no default gateway is set, this item is not displayed.

VLAN_AUTO_SETTING	Automatic VLAN configuration for external connection ports
	
	One of the following is displayed:
	
	- When automatically performing VLAN configuration for external connection ports
	
	  "true" is displayed.
	
	- When not automatically performing VLAN configuration for external connection ports
	
	  "false" is displayed.

EXTERNAL_PORT_CHASSIS [*num*]	External port chassis name In *num*, the index number of an external connection port element is displayed. The number is an integer starting from "0".
EXTERNAL_PORT_SWITCH [*num*]	External port switch name In *num*, the index number of an external connection port element is displayed. The number is an integer starting from "0".
EXTERNAL_PORT_NUMBER [*num*]	External port port number This item is displayed when a physical port is specified. In *num*, the index number of an external connection port element is displayed. The number is an integer starting from "0".
EXTERNAL_PORT_LAG [*num*]	Link aggregation port name of the external port This item is displayed when a port that is part of a link aggregation configuration is specified. [changed] is displayed if the link aggregation group that was specified when the network resource was created or changed is removed. In *num*, the index number of an external connection port element is displayed. The number is an integer starting from "0".
L_SERVER [*num*]	Name of the L-Server connected to the network resource, and the IP address being used In *num*, the index number of an L-Server connected to the network resource is displayed. The number is an integer starting from "0".

move

Moves a network resource to the specified resource pool.

delete

Deletes a network resource.

When the network device auto-configuration function is used, the script deployed for the configuration deletion is executed and the network devices are automatically configured (network devices definitions are deleted).

Options

-file *file*.xml

In *file*.xml, specify the XML file that defines the network resource.
For details on the XML file definition, refer to "2.5.1 Creation".

-format text|xml

Specify the display format.

When -format is omitted, it is displayed in text format.

text

The information is displayed in text format.

xml

The information is displayed in XML format with XML tags.

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the network resource specified in the subcommand to complete its execution.

-name *name*

In *name*, specify the name of the target network resource to perform an operation with.

-to *pool*

Specify the destination resource folder in *pool*.

For the hierarchized resource folder, specify the resource folder name using slashes ("/").

Examples

- To display the list of network resource information:

```
>rcxadm network list <RETURN>
NAME                VLAN_ID SUBNET          LABEL      TYPE
----                ------- ------          -----      ----
net_aa1             -         20.10.10.0    net_label  admin
net_aa2             -          20.10.11.0   -
```

- To display the detailed information for a network resource:

```
>rcxadm network show -name net_aa1 <RETURN>
name: net_aa1
type: admin
label: net_label
auto: true
comment: net_comment
vlan_id: 1234
physical_lan_segment: A
auto_switch_configuration: true
ruleset_name: rule1
subnet: 20.10.10.0
mask: 255.255.255.0
start - end: 20.10.10.1 - 20.10.10.254
exclude_address_range[0]: 20.10.10.1 - 20.10.10.10
exclude_address_range[1]: 20.10.10.51 - 20.10.10.55
default_gateway: 20.10.10.1
vlan_auto_setting: true
external_port_chassis[0]: chassis
external_port_switch[0]: switch_aa
external_port_lag[0]: linkaggregation1
```

```
external_port_chassis[1]: chassis
external_port_switch[1]: switch_bb
external_port_number[1]: 41
external_port_chassis[2]: chassis2
external_port_switch[2]: switch_cc
external_port_lag[2]: linkaggregation2 [changed]
l_server[0]: a (20.10.10.2)
```

1.3.6 rcxadm netdevice

Name

[Windows]
Installation_folder**Manager\bin\rcxadm netdevice** - network device operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm netdevice - network device operations

Format

```
rcxadm netdevice create -file file.xml [-nowait]
rcxadm netdevice delete -name name [-nowait]
rcxadm netdevice list
rcxadm netdevice modify -name name -file file.xml [-nowait]
rcxadm netdevice set -name name -attr {mode={active|maintenance}|auto_conf={true|false}} [-nowait]
rcxadm netdevice show -name name
```

Description

rcxadm netdevice is the command used to operate network devices.

Subcommands

create

Creates a network device.

🛈 **Note**

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If two or more pieces of network device information are defined in the network configuration information definition file, the resource creation process is terminated and device registration fails.
When registering two or more network devices for resources in one operation, use the rcxadm netconfig command.

· ·

delete

Deletes a network device.

list

Displays a list of network devices.

The following detailed information is displayed:

Table 1.13 Network Device Information

Item Name	Description
NAME	Network device name
IPADDRESS	Admin IP address for the network device

Item Name	Description
NETDEVICE_TYPES	Network device type When there is more than one, they are displayed separated by commas.

STATUS	Network device operation status
	
	One of the following is displayed:
	
	- For normal status
	
	  "normal" is displayed.
	
	- For error status
	
	  "error" is displayed.
	
	- For unknown status
	
	  "unknown" is displayed.

MAINTENANCE	Maintenance mode setting status for the network device
	
	One of the following is displayed:
	
	- When maintenance mode is set
	
	  "ON" is displayed.
	
	- When maintenance mode is not set
	
	  "OFF" is displayed.

modify

    Modifies a network device.

set

    For a network device, switch the maintenance mode setting or the auto-configuration target.

show

    Displays the detailed information for a network device.

    The following information is displayed:

Table 1.14 Detailed Information for Network Devices

Item Name	Description
Name	Network device name
SystemName	System name
IPAddress	Admin IP address
ProductName	Device name (product name)
ModelName	Model name
VendorName	Vendor name
Firmware	Firmware version
Location	The location of the device is displayed.
Status	Network device operation status One of the following is displayed: - For normal status "normal" is displayed.

Item Name	Description

	- For error status
	
	  "error" is displayed.
	
	- For unknown status
	
	  "unknown" is displayed.

NetdeviceTypes	Network device type When there is more than one, they are displayed separated by commas. When the type is omitted, only the item name is displayed and the type is not displayed.

Maintenance	Maintenance mode setting status for the network device
	
	One of the following is displayed:
	
	- When maintenance mode is set
	
	  "ON" is displayed.
	
	- When maintenance mode is not set
	
	  "OFF" is displayed.

AutoConfiguration	Selection target status during auto-configuration
	
	The status of whether the network device can be selected as the target of auto-configuration.
	One of the following is displayed:
	
	- When the network device can be selected as a target of auto-configuration
	
	  "true" is displayed.
	
	- When the network device cannot be selected as a target of auto-configuration
	
	  "false" is displayed.
	
	After the registration, the content ("true" or "false") specified for "auto-configuration for the network device (the AutoConfiguration element)" is displayed.
	If auto configuration for a network device for which "true" has been set when registering the network device fails, the network device will be excluded from the auto-configuration target and the display will change to "false".

Redundancy	Group ID
Redundancy[GroupDevice]	Group device name When there is more than one, they are displayed separated by commas.
Port[*num*]	Port name In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
Port[*num*][Link]	Port link status One of the following is displayed: - For link-up status "up" is displayed.

Item Name	Description
	- For link-down status "down" is displayed. - For unknown status "unknown" is displayed. In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
Port[*num*][PhysicalState]	Port communication status This is displayed in the format of line speed/communication mode. The unit of line speed is in Mbps. For the communication mode, one of the following is displayed: - For full duplex line "F" is displayed. - For half duplex line "H" is displayed. - For unknown status A hyphen ("-") is displayed. In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
Vlan[*num*]	VLAN ID In *num*, the index number of a VLAN element is displayed. The number is an integer starting from "0".
Vlan[*num*][UntaggedPort]	Name of the port belonging to an Untagged port of VLAN ID In *num*, the index number of a VLAN element is displayed. The number is an integer starting from "0". When there is more than one, they are displayed separated by commas.
Vlan[*num*][TaggedPort]	Name of the port belonging to a Tagged port of VLAN ID In *num*, the index number of a VLAN element is displayed. The number is an integer starting from "0". When there is more than one, they are displayed separated by commas.
Link[*num*][NeighborResourceName]	Name of the resource linked to the port number [*num*] In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
Link[*num*][NeighborPort]	Name of the port of the resource linked to the port number [*num*] In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
AllocatedResources[Firewall]	Firewall name assigned by auto-configuration When there is more than one, they are displayed separated by commas.
AllocatedResources[Network]	Network resource name assigned by auto-configuration When there is more than one, they are displayed separated by commas.

Item Name	Description
LoginInfo[*num*][User]	User name of the account In *num*, the index number of an account element is displayed. The number is an integer starting from "0".
LoginInfo[*num*][IPAddress]	Destination IP address of the account In *num*, the index number of an account element is displayed. The number is an integer starting from "0".
LoginInfo[*num*][Port]	Destination port number of the account In *num*, the index number of an account element is displayed. The number is an integer starting from "0".
LoginInfo[*num*][Protocol]	Protocol name used by the account In *num*, the index number of an account element is displayed. The number is an integer starting from "0".

LoginInfo[*num*][Authority]	Account privileges
	
	One of the following is displayed:
	
	  - For administrator authority
	
	    "administrator" is displayed.
	
	  - For user authority
	
	    "user" is displayed.
	
	In *num*, the index number of an account element is displayed. The number is an integer starting from "0".

LoginInfo[*num*][Tenant]	Tenant name of the account The tenant name is displayed only when the type is "Firewall" and the tenant name has been configured. In other cases, the item name and tenant name are not displayed. In *num*, the index number of an account element is displayed. The number is an integer starting from "0".

LoginInfo[*num*][AuthType]	Management method of account authentication information
	
	One of the following is displayed:
	
	  - When the information is managed within a network device
	
	    "local password" is displayed.
	
	  - When the information is managed within an external server
	
	    "external server" is displayed.
	
	In *num*, the index number of an account element is displayed. The number is an integer starting from "0".

LoginInfo[*num*][LoginCheck]	Check results of account availability
	
	One of the following is displayed:
	
	  - When the account can be used
	
	    "Successful" is displayed.
	
	  - When the account cannot be used
	
	    "Failed" is displayed.
	
	  - When the account has not been checked

Item Name	Description
	"Unchecked" is displayed.
	In *num*, the index number of an account element is displayed. The number is an integer starting from "0".
Ruleset[*num*]	Ruleset name
	In *num*, the index number of a ruleset element is displayed. The number is an integer starting from "0".
	When the ruleset is omitted, the item name and ruleset name are not displayed.
Ruleset[*num*][Info]	Description of a ruleset
	In *num*, the index number of a ruleset element is displayed. The number is an integer starting from "0".
	When the ruleset is omitted, the item name and description of the ruleset are not displayed.
SnmpCommunityName	SNMP community name
FaultMonitoringMethod	Method of fault monitoring
	One of the following is displayed:
	- When alive or not is monitored using ping
	"ping" is displayed.
	- When the status is monitored using SNMP
	"SNMP" is displayed.
	When there are multiple monitoring methods employed, they are displayed separated by commas.
FaultMonitoringInterval(s)	Fault monitoring interval (unit: seconds)
FaultMonitoringRetry	Fault monitoring retry count
FaultMonitoringTimeout(s)	Fault monitoring timeout (unit: seconds)

Options

-attr {mode={active|maintenance}|auto_conf={true|false}}

For a network device, switch the maintenance mode settings or the auto-configuration target.

-attr mode=active

Release maintenance mode.

-attr mode=maintenance

Places into maintenance mode.

-attr auto_conf=true

Use this option to select the network device as a target of auto-configuration.

-attr auto_conf=false

Use this option not to select the network device as a target of auto-configuration.

-file *file*.xml

In *file*.xml, specify the XML file that defines the network resource for creation.
For details on the XML file definition, refer to "2.6.1 Creation".

-name *name*

In *name*, specify the name of a network device.

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the network device specified in the subcommand to complete its execution.

Examples

- To display a list of network device information:

```
>rcxadm netdevice list <RETURN>
NAME                    IPADDRESS      NETDEVICE_TYPES    STATUS   MAINTENANCE
----                    ---------      --------           ------   -----------
cat4503.network.com     192.168.5.17   L2-Switch          normal   OFF
Firewall1               192.168.5.1    Firewall           normal   OFF
Firewall2               192.168.5.2    Firewall           normal   OFF
```

- To display the detailed information for a network device:

```
>rcxadm netdevice show -name Firewall1 <RETURN>
Name: Firewall1
SystemName: Firewall1
IPAddress: 192.168.5.1
ProductName: IPCOMEXSC
ModelName: IPCOM EX2000 SC
VendorName: Fujitsu
Firmware: E20L10
Location: NUMAZU_B1
Status: normal
NetdeviceTypes: Firewall
Maintenance: OFF
AutoConfiguration: true
Redundancy: 1
Redundancy[GroupDevice]: Firewall1,Firewall2
Port[0]: LAN0.0
Port[0][Link]: up
Port[0][PhysicalState]: 1000M / F
Vlan[0]: 1
Vlan[0][UntaggedPort]: LAN0.1,LAN0.2
Vlan[0][TaggedPort]: LAN0.3
Link[0][NeighborResourceName]: Firewall2
Link[0][NeighborPort]: LAN0.0
AllocatedResources[Firewall]: fw1
AllocatedResources[Network]: network1,network2
LoginInfo[0][User]: admin
LoginInfo[0][IPAddress]: 192.168.5.1
LoginInfo[0][Port]: 8080
LoginInfo[0][Protocol]: remote_login
LoginInfo[0][Authority]: administrator
LoginInfo[0][Tenant]: TenantA
LoginInfo[0][AuthType]: local password
LoginInfo[0][LoginCheck]: Successful
Ruleset[0]: Rule1
Ruleset[0][info]: Firewall rule
SnmpCommunityName: public
FaultMonitoringMethod: SNMP
FaultMonitoringInterval(s): 300
FaultMonitoringRetry: 3
FaultMonitoringTimeout(s): 10
```

1.3.7 rcxadm netconfig

Name

[Windows]
Installation_folder**Manager\bin\rcxadm netconfig** - network device batch operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm netconfig - network device batch operations

Format

```
rcxadm netconfig export -file file.xml
rcxadm netconfig import -file file.xml [-dryrun|-nowait]
```

Description

rcxadm netconfig is the command used to manage network devices in one operation.

Subcommands

export

Exports the network configuration information of all network devices registered in XML format.

import

Imports all network configuration information defined in the XML file.
For network device resources, they are created or modified according to the registration mode (the Mode element defined in the network configuration information.
For link information, it is replaced with the link information defined in the network configuration information.

🔔 Note

....

- If importing is performed for network devices (with the status (unregistered)) detected by LAN switch searching, the import process is terminated and registration fails.

  For registration of network devices with the status unregistered, after deleting those network devices, either import the network configuration information file again or create new network devices.
  For creation and deletion of network devices, use the rcxadm netdevice command.
  For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

- For a network device with the status "registered", when importing the XML definitions specifying "add" in Mode elements (Registration mode), the target network device is not modified. The importing process will be continued for other network devices defined in the XML definitions.

- For the link information, delete all registered link information, and then register the link information specified in the XML definitions. When the current link information should be kept, do not specify the link information using the Links element and its child elements.

....

Options

-dryrun|-nowait

-dryrun

Use this option to verify the XML file format that defines the network configuration information, without registering resources.

-nowait

> Use this option to return the command without waiting for completion of the operation for the network configuration information specified in the subcommands.

-file *file*.xml

- For the import subcommand

   In *file*.xml, specify the XML file that defines all network resources for creation.

- For the export subcommand

   In *file*.xml, specify the destination file name for the XML file to be exported.

For details on the XML file definition, refer to "2.6.1 Creation".

ℹ️ **Note**

. . . .

For the export subcommand, do not use the existing XML file name when specifying a file name with the -file option.

. . . .

1.3.8 rcxadm pool

Name

[Windows]
Installation_folder**Manager\bin\rcxadm pool** - resource pool operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm pool - resource pool operations

Format

```
rcxadm pool create -name name -type type [-priority priority] [-label label] [-comment comment] [-
nowait]
rcxadm pool list [-reserve] [-extend attributes]
rcxadm pool list -name name [-template template_name] [-resource] [-info lserver] [-reserve] [-extend
{attributes|disksize}]
rcxadm pool show -name name
rcxadm pool register -name name {-resource resource_name|-from vstorage} -type resource_type [-force]
[-nowait]
rcxadm pool unregister -name name {-resource resource_name|-from vstorage} -type resource_type [-
nowait]
rcxadm pool modify -name name {[-new_name new_name] [-priority priority] [-label label] [-comment
comment]} [-nowait]
rcxadm pool move -name name [-to folder] [-nowait]
rcxadm pool delete -name name [-force] [-nowait]
```

Description

rcxadm pool is the command used to manage resource pools. A resource pool is a type of resource folder in the orchestration tree, which stores the resources to select when creating or adding an L-Server. A resource pool type is specified when creating a resource pool, and only resources of a specific type are stored in each type of resource pool.

Resource pools enable you to manage all the resources allocated when creating an L-Server.

ℹ️ **Note**

. . . .

- When the disk resource is a LUN that has been created in advance, a LUN for iSCSI boot, or a disk resource for a virtual L-Server, deleting L-Servers or removing disks from an L-Server does not delete the content of disks.

When using disk resources that are registered in global pools, perform operation carefully, as the disk resources will be allocated to other users.

- When using a LUN that has been created in advance, a LUN for iSCSI boot, or a disk resource for a virtual L-Server, it is recommended to operate the LUN in a local pool, and delete data on the disk during deletion of L-Servers or detachment of disks.
  For details on the method for deleting the data on a disk, refer to cautionary notes in "7.5 Storage Resources" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- To operate disk resources used for iSCSI boot, use the iSCSI boot information operation command (rcxadm iscsictl).
  When deleting disk resources using this command, they are unregistered from the resource pools, but the disk resource information will remain.
  To delete the disk resource information, register the disk resources to resource pools again, and then delete them by executing the rcxadm iscsictl command.

Subcommands

create

Creates a resource pool.

list

Displays a list of resource pools.
The following detailed information is displayed:

- When specifying -extend attributes for the option

  Additional information is displayed.

- When not specifying -name for the option

  The information for all the resource pools that can be accessed is displayed.

  - For VM pools

  When a calculation for the available space for the VM pool used for overcommit is set with a reservation value, it will be reflected on the information output in the following item names:

  - CPU(*max*)

  - MEMORY(*max*)

Table 1.15 VM Pool Information

Item Name	Description
NAME	VM pool name
TYPE	Resource pool types
PRIORITY	Priority
CPU(*max*)	The free size and the total size of the VM host CPUs In *max*, the maximum number of CPUs which can be allocated to a VM guest is displayed in "*Performance*GHz * *Cores*" format.
RESERVE-CPU (*1)	The CPU reservation size of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.
MEMORY(*max*)	The free size and the total size of the VM host memory In *max*, the maximum memory which can be allocated to a VM host is displayed in "*Space*GB" format.

Item Name	Description
RESERVE-MEMORY (*1)	The memory reservation capacity of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.

*1: When specifying -reserve for the option, this is displayed.

- For server pools

Table 1.16 Server Pool Information

Item Name	Description
NAME	Server pool name
TYPE	Resource pool types
PRIORITY	Priority
SERVER	The total and unused number of physical servers

- For storage pools

Table 1.17 Storage Pool Information

Item Name	Description
NAME	Storage pool name
TYPE	Resource pool types
PRIORITY	Priority

CAPACITY(*max*)	The total size and the free size of the virtual storage memory
	
	For a storage pool to which the thin provisioning attribute is applied, it is displayed as follows:
	
	- Virtual storage free space
	
	  When the allocated size exceeds the total size of the virtual storage resource, the excess is displayed with a minus sign ("-").
	
	- *max*
	
	  In *max*, the maximum value is displayed.
	  If free space values of all of registered virtual storage are negative values, the lowest value (the highest number with a minus sign) will be displayed.
	
	[Oracle VM]
	For the free space of virtual storage resources, refer to "E.5.5 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE".
	The total size of virtual storage resources will not be displayed when the virtual storage resource is an Oracle VM storage repository.
	In *max*, the maximum disk space which can be allocated to a virtual storage resource is displayed in "*Space*GB" format.
	
	[Oracle VM]
	For the maximum disk space which can be allocated to a virtual storage resource, refer to "Virtual storage resource free space" in "E.5.5 Advisory Notes for Oracle VM Usage" of the "Setup Guide CE".

ATTRIBUTES (*1)	One of the following is displayed: - For a storage pool to which the thin provisioning attribute is applied "Thin=true" is displayed.

Item Name	Description
	- For a storage pool to which the thin provisioning attribute is not applied "Thin=false" is displayed.

*1: When specifying -extend attributes for the option, this is displayed.

- For network pools

Table 1.18 Network Pool Information

Item Name	Description
NAME	Network pool name
TYPE	Resource pool types
PRIORITY	Priority
VLANID	Total number and unused number of VLAN IDs
NETWORKDEVICE(in use)	Total number of network devices, and the number of in use network devices

- For address pools

Table 1.19 Address Pool Information

Item Name	Description
NAME	Address pool name
TYPE	Resource pool types
PRIORITY	Priority
ADDRESS	Total number and unused number of addresses

- For image pools

Table 1.20 Image Pool Information

Item Name	Description
NAME	Image pool name
TYPE	Resource pool types
PRIORITY	Priority
IMAGE	Image number

- When specifying -name for the option

The specified resource pool and a list of the resources included in the resource pool are displayed.

- For VM pools

When a calculation for the available space for the VM pool used for overcommit is set with a reservation value, it will be reflected on the information output in the following item names:

- CPU(*max*)

- MEMORY(*max*)

- CPU(*FREE*)

- MEMORY(*FREE*)

Table 1.21 VM Pool Information

Item Name	Description
NAME	VM pool name

Item Name	Description
TYPE	Resource pool types
PRIORITY	Priority
CPU(*max*)	The free size and the total size of the VM host CPUs In *max*, the maximum number of CPUs which can be allocated to a VM guest is displayed in "*Performance*GHz * *Cores*" format.
RESERVE-CPU (*1)	The CPU reservation size of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.
MEMORY(*max*)	The free size and the total size of the VM host memory In *max*, the maximum memory which can be allocated to a VM host is displayed in "*Space*GB" format.
RESERVE-MEMORY (*1)	The memory reservation capacity of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.
PER-TEMPLATE (*2)	Number of L-Servers which can be created in the specified L-Server template definition

*1: When specifying -reserve for the option, this is displayed.
*2: When specifying -template for the option, this is displayed.

Table 1.22 Resource Information Included in VM Pools

Item Name	Description
NAME	Resource name included in the resource pool
TYPE	Type of resources included in the resource pools
CPU(*FREE*)	The free size and the total size of the VM host CPUs Free space is displayed in *FREE*:
RESERVE-CPU (*1)	The CPU reservation size of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.
MEMORY(*FREE*)	The free size and the total size of the VM host memory Free space is displayed in *FREE*:
RESERVE-MEMORY (*1)	The memory reservation capacity of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.
STATUS	Resource status

Item Name	Description
CLUSTER (*1)	The name of a cluster that the VM host belongs to For the VM hosts not belonging to a cluster, a hyphen ("-") is displayed.
MAINTENANCE	Maintenance mode
PER-TEMPLATE (*2)	Number of L-Servers which can be created in the specified L-Server template definition

*1: When specifying -reserve for the option, this is displayed.
*2: When specifying -template for the option, this is displayed.

- When specifying -resource for the option

Table 1.23 Resource Information Included in VM Hosts

Item Name	Description
NAME	Virtual machine name
TYPE	Resource types
VM_HOST	VM host
L-SERVER (*1)	The linked L-Server name

*1: When specifying -info lserver for the option, this is displayed.

 Note
. . . .
When calculating the number of L-Servers using reservation values, if an L-Server template for which the CPU reservation performance and the memory reservation capacity of "0" is specified, "0" will be displayed for the number of possible L-Servers for creation.
. . . .

- For server pools

Table 1.24 Server Pool Information

Item Name	Description
NAME	Server pool name
TYPE	Resource pool types
PRIORITY	Priority
SERVER	The total and unused number of physical servers
PER-TEMPLATE (*1)	Number of L-Servers which can be created in the specified L-Server template definition

*1: When specifying -template for the option, this is displayed.

Table 1.25 Resource Information Included in Server Pools

Item Name	Description
NAME	Resource name included in the resource pool
TYPE	Type of resources included in the resource pools
MODEL	Physical server model name
CPU	Physical server CPU size
MEMORY	Memory size of a physical server

Item Name	Description
STATUS	Resource status
MAINTENANCE	Maintenance mode
L-SERVER (*1)	The linked L-Server name
PER-TEMPLATE (*2)	Number of L-Servers which can be created in the specified L-Server template definition

*1: When specifying -info lserver for the option, this is displayed.
*2: When specifying -template for the option, this is displayed.

- For storage pools

Table 1.26 Storage Pool Information

Item Name	Description
NAME	Storage pool name
TYPE	Resource pool types
PRIORITY	Priority

CAPACITY(*max*)	The total size and the free size of the virtual storage memory
	
	For a storage pool to which the thin provisioning attribute is applied, it is displayed as follows:
	
	- Virtual storage free space
	
	  When the allocated size exceeds the total size of the virtual storage resource, the excess is displayed with a minus sign ("-").
	
	- *max*
	
	  In *max*, the maximum value is displayed.
	  If free space values of all of registered virtual storage are negative values, the lowest value (the highest number with a minus sign) will be displayed.
	
	[Oracle VM]
	For the free space of virtual storage resources, refer to "E.5.5 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE".
	The total size of virtual storage resources will not be displayed when the virtual storage resource is an Oracle VM storage repository.
	In *max*, the maximum disk space which can be allocated to a virtual storage resource is displayed in "*Space*GB" format.
	
	[Oracle VM]
	For the maximum disk space which can be allocated to a virtual storage resource, refer to "Virtual storage resource free space" in "E.5.5 Advisory Notes for Oracle VM Usage" of the "Setup Guide CE".

PER-TEMPLATE (*1)	Number of L-Servers which can be created in the specified L-Server template definition

ATTRIBUTES (*2)	One of the following is displayed:
	
	- For a storage pool to which the thin provisioning attribute is applied
	
	  "Thin=true" is displayed.
	
	- For a storage pool to which the thin provisioning attribute is not applied
	
	  "Thin=false" is displayed.

*1: When specifying -template for the option, this is displayed.
*2: When specifying -extend attributes for the option, this is displayed.

Table 1.27 Resource Information Included in Storage Pools

Item Name	Description
NAME	Resource name included in the resource pool
TYPE	Type of resources included in the resource pools
CAPACITY(*FREE*)	The total size and the free size of the virtual storage memory [Oracle VM] For the free space of virtual storage resources, refer to "E.5.5 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE". The total size of virtual storage resources will not be displayed when the virtual storage resource is an Oracle VM storage repository. Free space is displayed in *FREE*:
STATUS	Resource status
PER-TEMPLATE (*1)	Number of L-Servers which can be created in the specified L-Server template definition

*1: When specifying -template for the option, this is displayed.

- For network pools

Table 1.28 Network Pool Information

Item Name	Description
NAME	Network pool name
TYPE	Resource pool types
PRIORITY	Priority
VLANID	Total number and unused number of VLAN IDs
NETWORKDEVICE(in use)	Total number of network devices, and the number of in use network devices

Table 1.29 Resource Information Included in Network Pools

Item Name	Description
NAME	Resource name included in the resource pool
TYPE	Type of resources included in the resource pools
VLANID(*FREE*)	Total and unused number of VLAN IDs Unused numbers are displayed in *FREE*:
ADDRESS(*FREE*)	Total number and unused number of addresses Unused numbers are displayed in *FREE*:
STATUS	Network device status
NETDEVICE_TYPE	Network device type
RULESET	Ruleset name set for the network device When there is more than one, they are displayed separated by commas.
RESOURCE	Name of the resource that is using network devices When there is more than one, they are displayed separated by commas.

- For address pools

Table 1.30 Address Pool Information

Item Name	Description
NAME	Address pool name
TYPE	Resource pool types
PRIORITY	Priority
ADDRESS	Total number and unused number of addresses

Table 1.31 Resource Information Included in Address Pools

Item Name	Description
NAME	Resource name included in the resource pool
TYPE	Type of resources included in the resource pools
ADDRESS(*FREE*)	Total number and unused number of addresses Unused numbers are displayed in *FREE*.

- For image pools

Table 1.32 Image Pool Information

Item Name	Description
NAME	Image pool name
TYPE	Resource pool types
PRIORITY	Priority
IMAGE	Image number

Table 1.33 Resource Information Included in Image Pools

Item Name	Description
NAME	Resource name included in the resource pool
VERSION	Version of the image
TYPE	Type of resources included in the resource pools
IMAGE_TYPE	Type of image
VM_TYPE	Virtual image VM type
OS	OS type of the image
DISKS (*1)	The disk sizes of the cloning image are displayed, with the system disk size first, then data disk size. Hyphens("-") are displayed for the following cloning images: - A physical L-Server image - Images with the VM type of Xen, KVM, or Oracle VM

*1: This is displayed when specifying the -extend disksize option. Disk size may not be displayed immediately after updating Resource Orchestrator from V3.0 or an earlier version or immediately after performing recovery operations using Disaster Recovery. Wait for a short while and then perform the operation again.

For details on Disaster Recovery, refer to "Chapter 15 Disaster Recovery" in the "Operation Guide CE".

show

To display the detailed information for a resource pool.

The following detailed information is displayed: The displayed information varies depending on the attributes configured for the resource pool, and the status (existence, type) of resources in the resource pool.

- For VM pools

    When a calculation for the available space for the VM pool used for overcommit is set with a reservation value, it will be reflected on the information output in the following item names:

    - FreeCPU

    - FreeMemorySize

Table 1.34 Detailed Information for VM Pools

Item Name	Description
Name	VM pool name
Type	Resource Pool Types
Priority	Priority
Label	Label
Comment	Comment
CPU(*max*)	The total size of the VM host CPUs In *max*, the maximum number of CPUs which can be allocated to a machine is displayed in "*Performance*GHz * *Cores*" format.
FreeCPU	The free size of VM host CPUs
ReserveCPU	The CPU reservation size of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.
MemorySize(*max*)	The total size of the VM host memory In *max*, the maximum memory which can be allocated to a VM host is displayed in "*Space*GB" format.
FreeMemorySize	The free size of the VM host memory
ReserveMemorySize	The memory reservation capacity of the VM host For VM hosts for which the HA function provided by server virtualization software is available, the reserved capacity for a failover is displayed. For VM hosts for which the HA function is unavailable, or for operations with no reservation for failover, a hyphen ("-") is displayed.

- For server pools

Table 1.35 Detailed Information for Server Pools

Item Name	Description
Name	Server pool name
Type	Resource Pool Types
Priority	Priority
Label	Label
Comment	Comment
Server	Total number of physical servers
FreeServer	Number of unused physical servers

- For storage pools

Table 1.36 Detailed Information for Storage Pools

Item Name	Description
Name	Storage pool name
Type	Resource Pool Types
Priority	Priority
Label	Label
Comment	Comment
DiskSize(*max*)	Total virtual storage size For a storage pool to which the thin provisioning attribute is applied, it is displayed as follows: - *max* In *max*, the maximum value is displayed. [Oracle VM] If the virtual storage resource is a storage repository of Oracle VM, it is not displayed. In *max*, the maximum disk space which can be allocated to a virtual storage resource is displayed in "*Space*GB" format. [Oracle VM] For the maximum disk space which can be allocated to a virtual storage resource, refer to "Virtual storage resource free space" in "E.5.5 Advisory Notes for Oracle VM Usage" of the "Setup Guide CE".
FreeDiskSize	Virtual storage free space For a storage pool to which the thin provisioning attribute is applied, it is displayed as follows: - Virtual storage free space When the allocated size exceeds the total size of the virtual storage resource, the excess is displayed with a minus sign ("-"). [Oracle VM] For the free space of virtual storage resources, refer to "E.5.5 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE".

Thin	It is displayed as follows:
	
	- For a storage pool to which the thin provisioning attribute is applied
	
	   "true" is displayed.
	
	- For a storage pool to which the thin provisioning attribute is not applied
	
	   "false" is displayed.

- For network pools

Table 1.37 Detailed Information for Network Pools

Item Name	Description
Name	Network pool name
Type	Resource Pool Types
Priority	Priority
Label	Label
Comment	Comment
VLANId	Total number of VLANIDs

Item Name	Description
FreeVLANId	Number of unused VLAN IDs
NetworkDevice	Total number of network devices
InUseNetworkDevice	Total number of network devices in use

- For address pools

Table 1.38 Detailed Information for Address Pools

Item Name	Description
Name	Address pool name
Type	Resource Pool Types
Priority	Priority
Label	Label
Comment	Comment
Address	Total number of addresses
FreeAddress	Number of unused addresses

- For image pools

Table 1.39 Detailed Information for Image Pools

Item Name	Description
Name	Image pool name
Type	Resource Pool Types
Priority	Priority
Label	Label
Comment	Comment
ImageCount	Image number

register

Registers a resource to a resource pool.

unregister

Unregisters resources from resource pools.

modify

Modifies the name, label, comment, and priority of a resource pool.

move

Moves a resource pool to the specified resource folder.
If the destination resource folder is not specified, the pool is moved to the home folder.

delete

Deletes a resource pool.

Options

-name *name*

In *name*, specify the name of the target resource pool to perform an operation with.

For the resource pool allocated in the resource folder, specify the resource folder name using slashes ("/").

-type *type*

In *type*, specify the resource pool type.

The following values can be specified:

Table 1.40 List of Resource Pool Types

type	Resource Pool Types
vm	VM pool
server	Server pool
storage	Storage pool
network	Network pool
address	Address pool
image	Image pool

-priority *priority*

In *priority*, specify a priority between 1 and 10. If omitted, "5" is set. You can specify the same priority as another pool, but it is not recommended, as the order for retrieving resources will not be guaranteed.

For the priority order, "1" is the highest and "10" is the lowest.

-label *label*

In *label*, specify the label for the resource pool.

-comment *comment*

In *comment*, specify any comments for the resource pool.

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the resource pool specified in the subcommand to complete its execution.

-template *template_name*

In *template_name*, specify the name of an L-Server template that can be created.

-resource *resource_name*

In *resource_name*, specify the resource name.

-extend attributes

Specify when displaying additional information.

-extend disksize

Specify this option to display the disk size of the cloning image. This option can only be specified when an image pool is selected for the -name option.

-from *vstorage*

In *vstorage*, specify the name of a virtual storage resource.

Specify when adding the all disk resources in the specified virtual storage resource, to a resource pool.

-type *resource_type*

In *resource_type*, specify a type for the resource.

The following values can be specified:

Table 1.41 List of Resource Types

resource_type	Resource Types
vm_host	VM host

resource_type	Resource Types
physical_server	Physical server
storage	Virtual storage
disk	LUN (disk) created in advance
network	Network
address_set	MAC address, WWN
cloning_image	Cloning image (physical)
vm_image	Cloning image (virtual)
netdevice	Network device

-new_name *new_name*

In *new_name*, specify a new name for the target resource pool.

-to *folder*

Specify the destination resource folder in *folder*.
If the destination resource folder is not specified, the pool is moved to the home folder.

When executed by a user who has multiple access scopes specified, it cannot be omitted. Specify a resource folder.

For the hierarchized resource folder, specify the resource folder name using slashes ("/").

-force

- When deleting a resource pool

  Use this option to forcibly delete a resource pool that includes resources.

  The operation is the same as for deleting the resources in a resource pool.

  The following resources registered in the resource pool will be unregistered:

  - VH Host Resources

  - Physical Server Resources

  - Virtual Storage Resources

  - Disk Resources

  - Network Devices

  - Physical Image Resources

- When registering resources in a resource pool

  Specify when registering a physical server with an operating system installed to a server pool.

  In other cases, do not specify.

-resource

Specify this option to display the elements of the resources registered in a resource pool.

This is valid when a VM pool is specified for the -name option.

-info lserver

Use this option to display the link between an L-Server and the resources or the elements of the resources registered in a resource pool.

This is valid when a VM pool or a server pool specified for the -name option.

-reserve

Specify this option to display the CPU and memory reservation capacities when the HA function is enabled on the VM host in a VM pool.

This is valid for VM pools when the -name option is specified with this option.

Examples

- To display the list of resource pools:

```
>rcxadm pool list -extend attributes <RETURN>
NAME               TYPE    PRIORITY CPU(max.)            MEMORY(max.)
----               ----    -------- ---------            ------------
/VMHostPool        VM      5        37.6/39.9(1.8GHz x 8)  23.3/26.6(8.0GB)

NAME               TYPE    PRIORITY SERVER
----               ----    -------- --------------
/ServerPool        Server  5        0/3

NAME               TYPE    PRIORITY CAPACITY(max.)       ATTRIBUTES
----               ----    -------- --------------       ------------
/StoragePool       Storage 5        449.7/3061.8(351.7GB)  Thin=false
/ThinStoragePool   Storage 5        449.7/3061.8(351.7GB)  Thin=true

NAME               TYPE    PRIORITY VLANID  NETWORKDEVICE(in use)
----               ----    -------- ------  ------
/NetworkPool       Network 5        0/0     10(5)

NAME               TYPE    PRIORITY ADDRESS
----               ----    -------- -------
/AddressPool       Address 5        249/257

NAME               TYPE    PRIORITY IMAGE
----               ----    -------- -----
/ImagePool         Image   5        10
```

- To display the specified resource pool and a list of the resources included in the resource pool:

```
>rcxadm pool list -name /VMHostPool <RETURN>
NAME               TYPE    PRIORITY CPU(max.)            MEMORY(max.)
----               ----    -------- ---------            ------------
/VMHostPool        VM      5        37.6/39.9(1.8GHz x 8)  23.3/26.6(8.0GB)

NAME        TYPE    CPU(FREE)            MEMORY(FREE)  STATUS MAINTENANCE
----        ----    ---------            ------------  ------ -----------
vmhost1     VMHost  1.9GHz x 4 (7.9GHz)  6.4GB (6.4GB) normal  OFF
vmhost2     VMHost  1.9GHz x 8 (14.6GHz) 10.0GB (8.7GB) normal  OFF
vmhost3     VMHost  1.9GHz x 8 (14.9GHz) 10.0GB (8.0GB) normal  OFF
```

- To display the detailed information for a resource pool:

```
>rcxadm pool show -name /VMHostPool <RETURN>
Name: VMHostPool
Type: VM
Priority: 5
CPU: 3.2GHz(1.1GHz x 2)
FreeCPU: 2.2GHz
MemorySize: 7.7GB(6.7GB)
FreeMemorySize: 6.7GB
```

- To display the specified VM pool, and the CPU and memory reservation capacities of the VM hosts in the pool:

  - Cluster configuration and admission control are enabled (policy: share (10%))

```
>rcxadm pool list -name VMHostPool -reserve <RETURN>
NAME               TYPE    PRIORITY CPU(max.)            RESERVE-CPU MEMORY(max.)    RESERVE-
```

```
MEMORY
----            ----    -------- ---------                ----------- ------------
--------------
/VMHostPool        VM    5         5.4/11.1(1.2GHz x 2)  0.9GHz       19.2/27.4(8.4GB)  2.6GB

NAME          TYPE    CPU(FREE)              RESERVE-CPU MEMORY(FREE)   RESERVE-MEMORY STATUS
CLUSTER       MAINTENANCE
----          ----    ---------              ----------- ------------   -------------- ------
-------       -----------
vmhost1       VMHost  1.8GHz x 2 (1.2GHz)  0.3GHz      6.6GB (3.7GB) 0.6GB           normal
Cluster2      OFF
vmhost2       VMHost  1.8GHz x 2 (2.4GHz)  0.3GHz      10.4GB (8.4GB) 1.0GB          normal
Cluster2      OFF
vmhost3       VMHost  1.8GHz x 2 (1.8GHz)  0.3GHz      10.4GB (7.1GB) 1.0GB          normal
Cluster2      OFF
```

- Cluster configuration and admission control are enabled (policy: spare server (vmhost1))

```
>rcxadm pool list -name VMHostPool -reserve <RETURN>
NAME                TYPE    PRIORITY CPU(max.)                RESERVE-CPU MEMORY(max.)      RESERVE-
MEMORY
----                ----    -------- ---------                ----------- ------------
--------------
/VMHostPool        VM    5         5.0/11.1(1.4GHz x 2)  3.7GHz       17.5/27.4(9.4GB)  6.6GB

NAME          TYPE    CPU(FREE)              RESERVE-CPU MEMORY(FREE)   RESERVE-MEMORY STATUS
CLUSTER       MAINTENANCE
----          ----    ---------              ----------- ------------   -------------- ------
-------       -----------
vmhost1       VMHost  1.8GHz x 2 (0.0GHz)  3.7GHz      6.6GB (0.0GB) 6.6GB           normal
Cluster2      OFF
vmhost2       VMHost  1.8GHz x 2 (2.8GHz)  0.0GHz      10.4GB (9.4GB) 0.0GB          normal
Cluster2      OFF
vmhost3       VMHost  1.8GHz x 2 (2.2GHz)  0.0GHz      10.4GB (8.1GB) 0.0GB          normal
Cluster2      OFF
```

- Cluster configuration and admission control are enabled (policy: slot)

```
>rcxadm pool list -name VMHostPool -reserve <RETURN>
NAME                TYPE    PRIORITY CPU(max.)                RESERVE-CPU MEMORY(max.)      RESERVE-
MEMORY
----                ----    -------- ---------                ----------- ------------
--------------
/VMHostPool        VM    5         6.6/11.1(1.4GHz x 2)  0.0GHz       21.8/27.4(9.4GB)  0.0GB

NAME          TYPE    CPU(FREE)              RESERVE-CPU MEMORY(FREE)   RESERVE-MEMORY STATUS
CLUSTER       MAINTENANCE
----          ----    ---------              ----------- ------------   -------------- ------
-------       -----------
vmhost1       VMHost  1.8GHz x 2 (1.6GHz)  0.0GHz      6.6GB (4.3GB) 0.0GB           normal
Cluster2      OFF
vmhost2       VMHost  1.8GHz x 2 (2.8GHz)  0.0GHz      10.4GB (9.4GB) 0.0GB          normal
Cluster2      OFF
vmhost3       VMHost  1.8GHz x 2 (2.2GHz)  0.0GHz      10.4GB (8.1GB) 0.0GB          normal
Cluster2      OFF
```

- Cluster configuration and admission control are disabled

```
>rcxadm pool list -name VMHostPool -reserve <RETURN>
NAME                TYPE    PRIORITY CPU(max.)                RESERVE-CPU MEMORY(max.)      RESERVE-
MEMORY
----                ----    -------- ---------                ----------- ------------
```

```
--------------
/VMHostPool          VM      5        6.6/11.1(1.4GHz x 2)  -           21.8/27.4(9.4GB)  -

NAME             TYPE     CPU(FREE)              RESERVE-CPU MEMORY(FREE)   RESERVE-MEMORY STATUS
CLUSTER       MAINTENANCE
----             ----     ---------              ----------- ------------   -------------- ------
-------       -----------
vmhost1          VMHost   1.8GHz x 2 (1.6GHz)  -              6.6GB (4.3GB)  -              normal
Cluster2      OFF
vmhost2          VMHost   1.8GHz x 2 (2.8GHz)  -             10.4GB (9.4GB) -              normal
Cluster2      OFF
vmhost3          VMHost   1.8GHz x 2 (2.2GHz)  -             10.4GB (8.1GB) -              normal
Cluster2      OFF
```

- To display the specified VM pool, and a list of the VM hosts and virtual machines included in the pool:

```
>rcxadm pool list -name /VMHostPool -resource -info lserver <RETURN>
NAME             TYPE     PRIORITY CPU(max.)             MEMORY(max.)
----             ----     -------- ---------             ------------
/VMHostPool      VM       5        5.4/7.4(1.4GHz x 2)
5.3/9.5(4.6GB)

NAME             TYPE     CPU(FREE)             MEMORY(FREE)  STATUS
MAINTENANCE
----             ----     ---------             ------------  ------
-----------
VMHost1   VMHost   1.8GHz x 2 (2.5GHz)  2.9GB (0.7GB)  normal  OFF
VMHost2   VMHost   1.8GHz x 2 (2.9GHz)  6.6GB (4.6GB)  normal  OFF

NAME             TYPE             VM_HOST          L-SERVER
----             ----             -------          --------
Guest1           VirtualMachine  VMHost1          /L-Server1
Guest2           VirtualMachine  VMHost1          /folder/
L-Server2
Guest3           VirtualMachine  VMHost1          -
Guest4           VirtualMachine  VMHost2          -
Guest5           VirtualMachine  VMHost2          -
```

1.3.9 rcxadm folder

Name

[Windows]
Installation_folder**Manager\bin\rcxadm folder** - resource folder operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm folder - resource folder operations

Format

```
rcxadm folder create -file file.xml [-nowait]
rcxadm folder create -name name [-type type] [-label label] [-comment comment] [-nowait]
rcxadm folder list [-name name] [-type type] [-detail]
rcxadm folder show -name name [-type type]
rcxadm folder modify -name name [-type type] {[-new_name name] [-label label] [-comment comment]} [-
nowait]
rcxadm folder move -name name [-type type] [-to folder] [-nowait]
rcxadm folder delete -name name [-type type] [-nowait]
rcxadm folder start -name name [-nowait]
```

```
rcxadm folder stop -name name
rcxadm folder restart -name name [-nowait]
```

Description

rcxadm folder is the command used to manage resource folders. Use resource folder management to group resources when the number of resources managed by Resource Orchestrator becomes large or when you want to manage resources in work units. Since the resource folders can be arranged in a hierarchy, you can perform detailed categorization for resources.

Resources can be grouped using the resource folder management functions. Grouping resources enables users to perform operation of multiple resources together and improve operability.
Resource folders can be used with user/role management to ensure folder level security.

Resources folders are categorized into the following two types, depending on the resources to register:

- Orchestration

  Registers L-Servers, network resources, disk resources, and resource pools.

- Servers

  Registers server tree blade chassis and rack mount servers.

Subcommands

create

Creates a new resource folder. Use the -file option to create the specified resource folder with resources included. If the resource folder specified in the XML file already exists, only the specified resources are created.

list

Displays the list of resource folders and the resources and subfolders included in the resource folders.

- When specifying -name for the option

  Displays the list of the resources and subfolders included in the specified resource folder.

- When not specifying -name for the option

  Displays the list for the top-level resource folders.

The following detailed information is displayed:

Table 1.42 Resource Folder Information

Item Name	Description
TYPE	Type of resource folder, resource pool, or each resource
NAME	Name of the resource folder, resource pool, or each resource

FOLDER_TYPE (*1)	Type of the folder
	
	One of the following is displayed:
	
	- For tenants
	
	  "TENANT" is displayed.
	
	- For L-Platforms
	
	  "LPLATFORM" is displayed.
	
	- Other folder types
	
	  A hyphen ("-") is displayed.

LABEL	Label of the resource folder, resource pool, or each resource

*1: When specifying -detail for the option, it is displayed.

show

Displays the detailed information of a resource folder.

The following detailed information is displayed:

Table 1.43 Detailed Information for Resource Folders

Item Name	Description
NAME	Resource folder name
LABEL	Resource folder label
COMMENT	Comment for the resource folder

modify

Modifies the following items of the specified resource folder:

- Resource Folder Name

- Label

- Comment

- Priority

move

Moves a resource folder to the specified resource folder. If the destination resource folder is not specified, the folder is moved to the home folder.

delete

Deletes a resource folder.

start

Starts an L-Server in a resource folder.

stop

Stops an L-Server in a resource folder.

restart

Restarts an L-Server in a resource folder.

Options

-file *file*.xml

In *file*.xml, specify the XML file that specifies the resource folder to create and the resources to include in the resource folder. For details on the XML file definition, refer to "2.7 Resource Folders".

-detail

Use this option to display the detailed information for a desired resource folder.

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the resource folder specified in the subcommand to complete its execution.

This option also executes subsequent operations for L-Servers to which resources are not allocated without waiting for resource allocation.

-name *name*

In *name*, specify the resource folder name. For the hierarchized resource folder, specify the resource folder name using slashes ("/").

📘 **Example**

. . . .

To specify SecondFolder directly below TopFolder:

/TopFolder/SecondFolder

. . . .

-type *type*

In *type*, specify a resource folder type for the resource folder. Specify one of the following for the resource folder type:

- "server"

- "lserver"

If omitted, "lserver" is set.

-label *label*

In *label*, specify the label for the resource folder.

-comment *comment*

In *comment*, specify any comments for the resource folder.

-new_name *name*

In *name*, specify a new name for the target resource folder to perform an operation with.

-to *folder*

Specify the destination resource folder in *folder*. For the hierarchized resource folder, specify the resource folder name using slashes ("/"). When omitted, the folder is moved to the home folder.

When executed by a user who has multiple access scopes specified, it cannot be omitted. Specify a resource folder.

Examples

- To display the list of resource folders and the resources and subfolders included in the resource folders:

```
>rcxadm folder list <RETURN>
TYPE               NAME                      LABEL
----               ----                      -----
Folder             TenantA                   -
Folder             TenantB                   -
Pool               ImagePool                 -
Pool               ImgPool                   -
Pool               NetworkPool               -
Pool               StoragePool               -
Pool               VMHostPool                -
```

- To display a list of resource folders and the resources and subfolders included in those resource folders (with the -detail option):

```
>rcxadm folder list -detail <RETURN>
TYPE               NAME                  FOLDER_TYPE LABEL
----               ----                  ----------- -----
Folder             TenantA                   TENANT      -
Folder             TenantB                   TENANT      -
Pool               ImagePool                 -           -
Pool               NetworkPool               -           -
Pool               StoragePool               -           -
Pool               VMHostPool                -
-
```

- To display the list of the resources and subfolders included in the specified resource folder:

```
>rcxadm folder list -name TenantA <RETURN>
TYPE              NAME                         LABEL
----              ----                         -----
Folder            testA                        -
LServer           test4                        -
```

- To display the detailed information for a resource folder:

```
>rcxadm folder show -name TenantA <RETURN>
name    : TenantA
label   :
comment :
```

1.3.10 rcxadm addrset

Name

[Windows]
Installation_folder**Manager\bin\rcxadm addrset** - address set resource operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm addrset - address set resource operations

Format

```
rcxadm addrset create -name name -type {MAC|WWN} -file file -pool pool [-exclude
address[,address]...] [-label label] [-comment comment] [-nowait]
rcxadm addrset list [-verbose]
rcxadm addrset show -name name [-format {text|xml}]
rcxadm addrset move -name name [-to pool] [-nowait]
rcxadm addrset delete -name name [-nowait]
```

Description

rcxadm addrset is the command used to manage WWNs and MAC addresses.

Subcommands

create

Creates and registers an address set resource in the address pool.

list

Displays a list of address set resources.

The following detailed information is displayed:

Table 1.44 List of Address Set Resource Information

Item Name	Description
NAME	Name of the address set resource
TYPE	Type of the address set resource (MAC or WWN)
START-END	Start and end addresses of the address set resource

If the -verbose option is specified, in addition to the above information, the following information is displayed:

Table 1.45 List of Address Set Resource Information (verbose)

Item Name	Description
FREE	Number of unused addresses of the address set resource
USED	Number of the addresses of the address set resource in use
LABEL	Label of the address set resource

show

Displays details of address set resources.

The following detailed information is displayed:

Table 1.46 Detailed Information for Address Set Resources

Item Name	Description
NAME	Name of the address set resource
TYPE	Type of the address set resource (MAC or WWN)
LABEL	Label of the address set resource
COMMENT	Comment on the address set resource information
START-END	Start and end addresses of the address set resource
EXCLUDE_ADDRESS	Excluded-addresses of the address set resource
RESERVE_ADDRESS	Addresses of the address set resource in use
FREE	Number of unused addresses of the address set resource
USED	Number of the addresses in use of the address set resource

move

Moves an address pool to the specified resource folder.

delete

Deletes an address pool. Address set resources contained in the address pool will also be deleted.

Options

-name *name*

In *name*, specify the name of the target address set resource to perform an operation with.

For the address set resource allocated in the resource folder, specify the resource folder name using slashes ("/").

-verbose

Specify when displaying detailed information.

-type

Specify WWN or MAC address.

-file *file*

For *file*, specify the WWN in the CD-ROM enclosed in the I/O Virtualization Option, or the list file of the MAC address.

[Xen/KVM]

- Specify the MAC addresses in hexadecimal form, separated by blank spaces (" ").

- The first line is the starting point and the last line is the end point of the MAC addresses managed by Resource Orchestrator.

- Specifiable MAC address ranges may differ depending on server virtualization software. For details, refer to the server virtualization software manual.

- An example of the list file, in which MAC addresses ("12 34 56 78 00 00" to "12 34 56 78 ff ff") are specified, is as follows:

🗒 Example

. . . . - 64 - . . . .

```
12 34 56 78 00 00
12 34 56 78 ff ff
```

. . . .

-exclude

Of the WWNs and MAC addresses given in the list file on the CD-ROM enclosed with the I/O Virtualization Option, specify an address that has been allocated using ROR VE or VIOM and is not used in management by Resource Orchestrator.

-pool *pool*

For *pool*, specify the name of the resource pool to register an address set resource in.

For the resource pool allocated in the resource folder, specify the resource folder name using slashes ("/").

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the address set resource specified in the subcommand to complete its execution.

-label *label*

In *label*, specify the label for the address set resource.

-comment *comment*

In *comment*, specify any comments for the address set resource.

-to *pool*

Specify the destination address pool in *pool*. If omitted, address set resources will not be moved.

-format text|xml

Specify the display format. You can specify text or xml format.

When -format is omitted, it is displayed in text format.

Examples

- To display the list of address set resource information:

```
>rcxadm addrset list <RETURN>
NAME        TYPE  START                   END
----        ----  -----                   ---
macdata1    WWN   20:00:00:17:42:00:00:20  20:00:00:17:42:00:10:ff
wwndata1    MAC   00:e5:35:0c:34:50        00:e5:35:0c:44:ff
```

- To display the detailed information of address set resources (WWNs):

```
>rcxadm addrset show -name wwndata <RETURN>
name: wwndata1
type: WWN
label: wwn1
comment: wwn-test-data-1
start-end:20: 01:00:17:42:50:00:00 - 20:01:00:17:42:50:00:0f
exclude_address:
reserve_address: 20:01:00:17:42:50:00:00
free: 15
used: 1
```

- To display the detailed information of address set resources (MAC addresses):

```
>rcxadm addrset show -name macdata1 <RETURN>
name: macdata1
type: MAC
label: mac1
comment: mac-test-data1
start-end: 00:17:42:4f:00:00 - 00:17:42:4f:00:f0
exclude_address:
reserve_address: 00:17:42:4f:00+00
free: 240
used: 1
```

1.3.11 rcxadm chassis

rcxadm chassis is an existing ROR VE command.
For details, refer to "3.1 rcxadm chassis" of the "Command Reference VE".

This section explains the additional functions.

Name

[Windows]
Installation_folder**Manager\bin\rcxadm chassis** - display of chassis information

[Linux]
/opt/FJSVrcvmr/bin/rcxadm chassis - display of chassis information

Format

```
rcxadm chassis show -name name
```

Description

rcxadm chassis is the command for managing chassis.

Subcommands

show

Displays the detailed information for chassis.

The following detailed information is displayed:

Table 1.47 Detailed Information for Chassis

Item Name	Description
Name	Chassis name
Model	Model
IPAddress	IP address
Status	Status
ServerBlades	The number of server blades
LANSwitchBlades	The number of LAN switch blades
Server[*n*]	Server name The slot number is displayed in *n*.

Item Name	Description
L-Server[*n*]	L-Server name The slot number is displayed in *n*.
L-Server[*n*][Status]	L-Server Status The slot number is displayed in *n*.

Options

-name *name*

In *name*, specify the chassis name to display the detailed information for.

Examples

- To display the details of chassis information:

```
>rcxadm chassis show -name Chassis01
<RETURN>
Name: Chassis01
Model: SQ715M00205
IPAddress: 192.168.10.100
Status: normal
ServerBlades: 2
LANSwitchBlades: 2
Server[1]: BX600-1
L-Server[1]: -
L-Server[1][Status]: -
Server[2]: BX600-2
L-Server[2]: Lserver01
L-Server[2][Status]: normal
```

1.3.12 rcxadm server

rcxadm server is an existing ROR VE command.
This can be used for servers not managed as L-Servers.
For details, refer to "3.2 rcxadm server" of the "Command Reference VE".

Only the additional functions can be used for a server that has been allocated to an L-Server.

Name

[Windows]
Installation_folder**Manager\bin\rcxadm server** - Managed server operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm server - Managed server operations

Format

```
rcxadm server set -name resource -mode {active|maintenance}
```

Description

The additional functions of rcxadm server are indicated below.

- Set or release server maintenance mode.

    rcxadm server set -name *resource* **-mode {active|maintenance}**

Options

-name *resource*

For *resource*, specify a server name to place into or release from maintenance mode.

-mode active|maintenance

Specify whether the server is to be placed into or released from maintenance mode.

active

Release maintenance mode.

maintenance

Places into maintenance mode.

1.3.13 rcxadm tenant

Name

[Windows]
Installation_folder**Manager\\bin\\rcxadm tenant** - Tenant operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm tenant - Tenant operations

Format

```
rcxadm tenant create -file file.xml [-nowait]
rcxadm tenant delete -name name [-nowait]
rcxadm tenant list [-name name]
rcxadm tenant show -name name
rcxadm tenant modify -name name {[-display_name display_name] [-mail mail_address] [-global
pool,...]} [-nowait]
```

Description

rcxadm tenant is the command used to perform tenant management and operations.

Subcommands

create

Creates a tenant.
Create a user group with the same name as that of the tenant. The role of the user group is tenant_admin, and the access scope is the tenant to be created.
The location that a tenant can be created in is the root folder.

delete

Delete the specified tenant and any tenants with the same name as that of the user group.

In the following cases, a tenant cannot be deleted.

- When creating an L-Platform under a tenant

- When a user belongs to a user group with the same name as that of the tenant

User groups and users are also deleted if the roles assigned to them are only targeting the tenant for deletion.

list

Displays a list of tenants.

The following detailed information is displayed:

- When not specifying -name for the option

Table 1.48 Tenant Information (when omitting the -name option)

Item Name	Description
NAME	Tenant name
LABEL	Tenant label

- When specifying -name for the option

Table 1.49 Tenant Information (when specifying the -name option)

Item Name	Description
TYPE	Type of resource folder, resource pool, or each resource
NAME	Name of the resource folder, resource pool, or each resource
LABEL	Label of the resource folder, resource pool, or each resource

show

Displays the detailed information for a tenant.

The following detailed information is displayed:

Table 1.50 Detailed Information for Tenants

Item Name	Description
NAME	Tenant name
LABEL	Tenant label
COMMENT	Comment for a tenant
GLOBAL POOL	Global pool name

modify

Modify one of the following: Specify at least one of the items below.

- Tenant display name

- E-mail address

- Definition of the Global Pool

Options

-file *file.xml*

In *file.xml*, specify the XML file that defines the information related to one or more tenants to be registered. When an error occurs during registration of multiple tenants, no tenant registrations have been completed. Remove the cause of error, and execute the operation again.
For details on the XML file definition, refer to "2.10 Tenants".

-nowait

Use this option to return directly to the command prompt without waiting for the operation specified in the subcommand to complete its execution.

-name *name*

In *name*, specify the name of the target tenant to perform an operation with.

-display_name *display_name*

Specify a tenant display name for *display_name*.

-mail *mail_address*

Specify the e-mail address for the tenant administrator in *mail_address*.

-global *pool*

In *pool*, specify the resource pool name to be defined in a global pool of a tenant. If specifying a resource pool in a resource folder, specify the resource folder name using slashes ("/"). When specifying multiple resource pools, separate them using commas.

Examples

- When displaying a list of tenant information

```
>rcxadm tenant list <RETURN>
NAME             LABEL
----             -----
Tenant01         -
Tenant02         -

>rcxadm tenant list -name Tenant01 <RETURN>
TYPE             NAME                    LABEL
----             ----                    -----
Pool             AddressPool02           -
Pool             ImagePool02             -
Pool             NetworkPool02           -
Pool             ServerPool02            -
Pool             StoragePool02           -
Pool             VMHostPool02            -
LServer          lserver02               l_server
2
```

- When displaying details of tenant information

```
>rcxadm tenant show -name TenantA <RETURN>
name        : tenantA
label       : tenant folder A
comment     : comment_A
global pool : /VMHostPool
global pool : /NetworkPool
global pool : /AddressPool
```

1.3.14 rcxadm firewall

Name

[Windows]
Installation_folder**Manager\bin\rcxadm firewall** - display of firewall information

[Linux]
/opt/FJSVrcvmr/bin/rcxadm firewall - display of firewall information

Format

```
rcxadm firewall list [-ruleset]
rcxadm firewall log -name name
rcxadm firewall show -name name
```

Description

rcxadm firewall is the command used to display the status of firewalls.

Subcommands

list

Displays a list of firewalls.

The following detailed information is displayed:

Table 1.51 Firewall Information

Item Name	Description
NAME	Firewall name
RESOURCE_ID	Resource ID assigned to the firewall
TYPE	Type "Firewall" is displayed.
RULESET_NAME	Ruleset name used by the Auto-Configuration function
DEVICE_NAME	Network device name in use

Table 1.52 Firewall Ruleset Information

Item Name	Description
TYPE	Type "Firewall" is displayed.
RULESET_NAME	Ruleset name used by the Auto-Configuration function
MAX_SEGMENT	The maximum number of segments that can be defined
MAX_SERVER	The maximum number of servers that can be defined
DESCRIPTION	Descriptions of a ruleset

log

Displays up to 10 generations of the auto-configuration history for the network device.

The following detailed information is displayed:

Table 1.53 Firewall History Information

Item Name	Description
Name	Firewall name
Resource ID	Resource ID assigned to the firewall
Type	Type "Firewall" is displayed.
Tenant Name	Name of the tenant where the firewall is deployed
L-Platform Name	Name of the L-Platform where the firewall is deployed

Item Name	Description
Ruleset Name	Ruleset name used by the Auto-Configuration function
ParameterFile Name	Parameter file name used by the ruleset
Device Name	Network device name in use
Vendor Name	Name of the vendor who provides the network device (firewall)
Product Name	Product name of the network device (firewall)
Model Name	Model name of the network device (firewall)
Status	Status of the network device (firewall)

History	History information of auto-configuration for the firewall (up to 10 generations)
	
	The following information is displayed for each generation:
	
	- Generation
	
	  An integer from "01" is displayed.
	
	- Run Script Name
	
	  The name of the script executed by auto-configuration is displayed.
	
	- Time
	
	  The date and time for auto-configuration is displayed.
	
	- Result
	
	  The results of auto-configuration are displayed.

show

Displays the detailed information for a network device.

The following detailed information is displayed:

Table 1.54 Detailed Information for Firewall

Item Name	Description
Name	Firewall name
Resource ID	Resource ID assigned to the firewall
Type	Type "Firewall" is displayed.
Tenant Name	Name of the tenant where the firewall is deployed
L-Platform Name	Name of the L-Platform where the firewall is deployed
Ruleset Name	Ruleset name used by the Auto-Configuration function
ParameterFile Name	Parameter file name used by the ruleset
Device Name	Network device name in use
Vendor Name	Name of the vendor who provides the network device (firewall)
Product Name	Product name of the network device (firewall)
Model Name	Model name of the network device (firewall)
Status	Status of the network device (firewall)

Options

-name *name*

   In *name*, specify the firewall name.

-ruleset

   Use this option to display a list of rulesets.

Examples

- To display the list of firewall information:

```
>rcxadm firewall list <RETURN>
NAME                 RESOURCE_ID    TYPE        RULESET_NAME            DEVICE_NAME
---------------      -----------    ----        --------------------
-----------
Firewall1            FW-001         Firewall    FW_RULE1                IPCOM01
Firewall2            FW-002         Firewall    FW_RULE2                IPCOM02
```

- To display the list of firewall rulesets:

```
>rcxadm firewall list -ruleset <RETURN>
TYPE        RULESET_NAME    MAX_SEGMENT   MAX_SERVER   DESCRIPTION
----        ------------    -----------   ----------   -----------
Firewall    FW_RULE1        1             20           HTTP(80) pass
Firewall    FW_RULE2        3             50           HTTP(80)/HTTPS(443) pass
```

- To display the detailed information for a firewall:

```
>rcxadm firewall show -name firewall1 <RETURN>
Name: firewall1
Resource ID: FW-001
Type: Firewall
Tenant Name: TenantA
L-Platform Name: L-Platform1
Ruleset Name: FW_RULE1
ParameterFile Name: Param01.prm
Device Name: IPCOM01
Vendor Name: Fujitsu
Product Name: IPCOMEXSC
Model Name: IPCOMEX2000A_SC
Status: Normal
```

- To display the history information of a firewall.

```
>rcxadm firewall log -name firewall1 <RETURN>
Name: firewall1
Resource ID: FW-001
Type: Firewall
Tenant Name: TenantA
L-Platform Name: L-Platform1
Ruleset Name: FW_RULE1
ParameterFile Name: Param01.prm
Device Name: IPCOM01
Vendor Name: Fujitsu
Product Name: IPCOMEXSC
Model Name: IPCOMEX2000A_SC
Status: Normal

History:
```

```
00 Run Script Name: create  Time: 2011/03/30 Wed 00:16:00  Result: normal
01 Run Script Name: modify  Time: 2011/03/30 Wed 10:31:00  Result: normal
02 Run Script Name: modify  Time: 2011/04/06 Wed 12:10:26  Result: normal
...
09 Run Script Name: modify  Time: 2011/04/27 Wed 08:45:10  Result: normal
```

Information

....

- When auto-configuration is set for redundancy configuration network devices, the information after Device Name is displayed for each network device in the detailed information or the history information.

- While the firewall is being created, if the detailed information or the history information is displayed, a hyphen "-" may be displayed for the information after Device Name.

....

1.3.15 rcxadm tenant (for Basic mode)

Name

[Windows]
Installation_folder**Manager\bin\rcxadm tenant** - Tenant operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm tenant - Tenant operations

Format

```
rcxadm tenant list [-name name]
rcxadm tenant show -name name
rcxadm tenant create -file file.xml [-nowait]
rcxadm tenant modify -name name {[-new_name new_name] [-label label] [-comment comment] [-global
pool,...]} [-nowait]
rcxadm tenant delete -name name [-nowait]
rcxadm tenant move -name name [-to folder] [-nowait]
```

Description

rcxadm tenant is the command used to perform tenant management and operations.

Subcommands

list

Displays a list of tenant folders.

The following detailed information is displayed:

- When not specifying -name for the option

Table 1.55 Tenant Information (when omitting the -name option)

Item Name	Description
NAME	Tenant folder name
LABEL	Tenant folder label

- When specifying -name for the option

Table 1.56 Tenant Information (when specifying the -name option)

Item Name	Description
TYPE	Type of resource folder, resource pool, or each resource
NAME	Name of the resource folder, resource pool, or each resource
LABEL	Label of the resource folder, resource pool, or each resource

show

Displays the detailed information for a tenant folder.

The following detailed information is displayed:

Table 1.57 Detailed Information for Tenants

Item Name	Description
NAME	Tenant folder name
LABEL	Tenant folder label
COMMENT	Comment for a tenant folder
GLOBAL POOL	Global pool name

create

Creates a tenant.

modify

Modify one of the following: Specify at least one of the items below.

- Tenant Name

- Label

- Comment Information

- Definition of the Global Pool

delete

Deletes a tenant.
When an L-Server is created in a tenant folder, deleting the tenant will also delete the L-Server.
For details on how to delete an L-Server, refer to the advisory notes of "1.3.1 rcxadm lserver".

User groups and users are also deleted if the roles assigned to them are only targeting the deleted tenant folder. When user information is managed using a directory service, the user information will be deleted from the management information of Resource Orchestrator. The user information in the directory service is not deleted.

Note

When an L-Server is created in a tenant folder, deleting the tenant will also delete the L-Server.
For details on how to delete an L-Server, refer to the advisory notes of "1.3.1 rcxadm lserver".

move

Moves a tenant folder to the specified resource folder. If the destination resource folder is not specified, the folder is moved to the home folder.
It cannot be moved into a tenant folder.

Options

-file *file.xml*

In *file.xml*, specify the XML file that defines the information related to a tenant.
For details on the XML file definition, refer to "2.17 Tenants (for Basic mode)".

-nowait

Use this option to return directly to the command prompt without waiting for the operation specified in the subcommand to complete its execution.

-name *name*

In *name*, specify the name of the target tenant to perform an operation with. If a tenant folder created in a resource folder is specified, specify the resource folder name using slashes ("/").

-global *pool*

In *pool*, specify the resource pool name to be defined in a global pool of a tenant. If specifying a resource pool in a resource folder, specify the resource folder name using slashes ("/"). When specifying multiple resource pools, separate them using commas.

-new_name *new_name*

In *new_name*, specify the changed tenant folder name.

-label *label*

In *label*, specify the new label.

-comment *comment*

In comment, specify the *comment* for a tenant folder.

-to *folder*

In folder, specify the destination resource *folder*. For the hierarchized resource folder, specify the resource folder name using slashes ("/"). It cannot be moved to a tenant folder or a resource folder in a tenant folder.
When omitted, the server is moved to the home folder.
When executed by a user who has multiple access scopes specified, it cannot be omitted. Specify a resource folder.

Examples

- When displaying a list of tenant folder information

```
>rcxadm tenant list <RETURN>
NAME                LABEL
----                -----
Tenant01            -
Tenant02            -

>rcxadm tenant list -name Tenant01<RETURN>
TYPE                NAME                LABEL
----                ----                -----
Pool                AddressPool02        -
Pool                ImagePool02          -
Pool                NetworkPool02        -
Pool                ServerPool02         -
Pool                StoragePool02        -
Pool                VMHostPool02         -
LServer             lserver02
l_server 2
```

- When displaying details of tenant folder information

```
>rcxadm tenant show -name TenantA <RETURN>
name        : tenantA
```

```
label        : tenant folder A
comment      : comment_A
global pool : /VMHostPool
global pool : /NetworkPool
global pool : /AddressPool
```

1.4 Image Operations

This section explains the commands used to operate images managed in Resource Orchestrator.

1.4.1 rcxadm image

rcxadm image is an existing ROR VE command.
For details, refer to "4.1 rcxadm image" of the "Command Reference VE".

This section explains the additional functions.

Name

[Windows]
Installation_folder**Manager\\bin\\rcxadm image** - image operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm image - image operations

Format

```
rcxadm image create -server resource -name image [-comment comment] [-to pool] [-storage vstorage] [-
nowait]
rcxadm image snapshot -server resource [-comment comment] [-online] [-nowait]
rcxadm image backup -server resource [-comment comment] [-nowait] [-force]
rcxadm image delete -server resource -version version
rcxadm image delete -name image -version version
rcxadm image restore -server resource [-version version] [-nowait]
rcxadm image list -type cloning [-name image] [-detail] [-extend disksize]
rcxadm image list -type snapshot [-server resource] [-detail]
rcxadm image move -name image -to pool [-nowait]
```

Description

The additional functions of rcxadm image are indicated below.

- A resource pool where images are stored can be specified with the -to option when creating an image. The virtual storage location for an image can be specified with the -storage option.

  rcxadm image create -server *resource* **-name** *image* **[-comment** *comment*] **[-to** *pool*] **[-storage** *vstorage*] **[-nowait]**

- An L-Server snapshot can be created with the snapshot subcommand.

  rcxadm image snapshot -server *resource* **[-comment** *comment*] **[-online] [-nowait]**

- A system image of a physical L-Server can be backed up with the backup subcommand.

  rcxadm image backup -server *resource* **[-comment** *comment*] **[-nowait] [-force]**

- An L-Server snapshot and the system image of a physical L-Server can be deleted with the delete subcommand.

  rcxadm image delete -server *resource* **-version** *version*

- Cloning images can be deleted using the delete subcommand.

  rcxadm image delete -name *name* **-version** *version*

- An L-Server snapshot and the system image of a physical L-Server can be restored with the restore subcommand.

    rcxadm image restore -server *resource* **[-version** *version*] **[-nowait]**

- Cloning can be specified with the -type option when using the list command. Detailed information can also be output with the -detail option. Display information can be added with the -extend option.

    rcxadm image list -type cloning [-name *image*] **[-detail] [-extend disksize]**

- A snapshot can be specified with the -type option when using the list command. Detailed information can also be output with the -detail option.

    rcxadm image list -type snapshot [-server *resource*] **[-detail]**

- Images registered in the orchestration tree can be moved between resource pools. The destination resource pool name can be specified with the -to option.

    rcxadm image move -name *image* **-to** *pool* **[-nowait]**

Note

. . . .

Cloning images with the same name can be stored up to the maximum of the versions.

When collecting cloning images using the create subcommand will cause a number exceeding the maximum to be collected, an error will occur.

Check the version of the cloning image name to be collected using the list subcommand, delete any unnecessary cloning image versions using the delete subcommand, and then perform collection of cloning images.

The maximum number of versions of the cloning images is 3 by default.

For details on how to change the number of cloning images versions, refer to "1.7.2 rcxadm imagemgr".

. . . .

Subcommands

create

    Collects a cloning image of the specified L-Server.

list

    Displays the cloning images and snapshot images of the specified L-Server.

    The following detailed information is displayed:

    - For cloning images

    Table 1.58 Cloning Image Information

Item Name	Description
NAME	Name of cloning images
VERSION	Version of cloning images
CREATIONDATE	Date and time of cloning image collection
COMMENT	Comments for cloning images

    - For snapshots

    Table 1.59 Snapshot Information

Item Name	Description
SERVERNAME	Name of the server (physical server/VM host) used to back up snapshot images
VERSION	Version of snapshot image

Item Name	Description
BACKUPDATE	Date and time of snapshot image collection
COMMENT	Comment for snapshot image

When the -detail option is specified, in addition to the information displayed by the list subcommand, the TYPE of the image or snapshot is displayed.

- For cloning images

Table 1.60 Detailed Information of Cloning Images

Item Name	Description
NAME	Name of cloning images
VERSION	Version of cloning images
CREATIONDATE	Date and time of cloning image collection
TYPE	VM type of a cloning image [VMware] VMware [Hyper-V] Hyper-V [Xen] Xen [KVM] KVM [Oracle VM] Oracle VM
COMMENT	Comments for cloning images

- For snapshots

Table 1.61 Detailed Information of Snapshots

Item Name	Description
SERVERNAME	Name of the server (physical server/VM host) used to back up snapshot images
VERSION	Version of snapshot image
BACKUPDATE	Date and time of snapshot image collection
TYPE	VM type of a snapshot [VMware] VMware [Hyper-V] Hyper-V [Xen] Xen [Oracle VM] Oracle VM
COMMENT	Comment for snapshot image

When the -extend disksize option is specified, in addition to the information displayed by the list subcommand, the disk size of the image is displayed.

Table 1.62 Detailed Information of Cloning Images

Item Name	Description
NAME	Name of cloning images
VERSION	Version of cloning images
CREATIONDATE	Date and time of cloning image collection
DISKS (*1)	The disk sizes of the cloning image are displayed, with the system disk size first, then data disk size. Hyphens("-") are displayed for the following cloning images: - A physical L-Server image - Images with the VM type of Xen, KVM, or Oracle VM
COMMENT	Comments for cloning images

*1: This is displayed when specifying the -extend disksize option. Disk size may not be displayed immediately after updating Resource Orchestrator from V3.0 or an earlier version or immediately after performing recovery operations using Disaster Recovery. Wait for a short while and then perform the operation again.
For details on Disaster Recovery, refer to "Chapter 15 Disaster Recovery" in the "Operation Guide CE".

delete

In addition to the ROR VE functions, an L-Server snapshot can be deleted with the delete subcommand.

restore

In addition to the ROR VE functions, an L-Server snapshot can be restored with the restore subcommand.

snapshot

Collects a snapshot of the specified L-Server.
Setting is only possible for virtual L-Servers.

move

Images registered in the orchestration tree are moved between resource pools.

Options

-server *resource*

Specify the name of the target L-Server to operate in resource.

For the L-Server allocated in the resource folder, specify the resource folder name using slashes ("/").

 Example
. . . .
When specifying the L-Server directly under the TopFolder:

/TopFolder/*L-Server_name*

. . . .

-nowait

Use this option to return directly to the command prompt without waiting for the operation specified in the subcommand to complete its execution.

-to *pool*

For *pool*, specify the name of the resource pool for storing the cloning image or the name of the destination resource pool.
If omitted, it is assumed that the resource pool with the highest priority from the resource pools with update rights has been specified.

For the resource pool located in the resource folder, specify the resource folder name using slashes ("/").

Example

When specifying the resource pool directly under the TopFolder:

/TopFolder/*Resource_pool_name*

-storage *storagename*

For *storagename*, specify the name of the virtual storage, the library shared folder, or the disk resource for storing the collected cloning image.
If omitted, it is assumed that the storage resource containing the L-Server for collecting cloning images has been specified.

[Hyper-V]
It is assumed that the name of the regulated shared library folder on the SCVMM server is specified.

[Xen]
If omitted when using RHEL5-Xen, virtual storage is automatically selected from the same storage pool as the virtual storage used by the target L-Server to collect from.

-type cloning|snapshot

Specify the type of image. If you specify snapshot, a snapshot image is displayed.

-detail

Use this option to display the detailed information for a desired image.

-comment *comment*

In *comment*, enter a comment that identifies the snapshot.
Enter up to 128 alphanumeric characters or symbols.
However, use of percent signs ("%"), back slashes ("\"), and double quotes (") is not allowed in *comment*.

Note

If blank spaces are included in *comment*, enclose the *comment* character string using double quotes (").

-online

Specify when executing a snapshot, regardless of the status of the L-Server.

-name *image*

In *image*, enter a name to identify the collected cloning image.

When the subcommand is list, delete, or move, specify the following:

- When the cloning image is registered in the resource pool

  Specify the path name including the resource folder name.

- When the cloning image is not registered in a resource pool

  Specify the cloning image name

-version *version*

In *version*, specify the version of the cloning image or snapshot.

Note

- When creating an image, a template is created in the server virtualization software with the following name:

Table 1.63 Name in Server Virtualization Software

Server Virtualization Software	Name in Server Virtualization Software
VMware Hyper-V Oracle VM	*Cloning_image_name*[_*index*]@ *version_number*

When creating a template in the server virtualization software, do not use a name with the above format.

- When creating a template from a VM guest in the server virtualization software, set the system disk of the VM guest as indicated below.

Table 1.64 Settings for System Disks

Server Virtualization Software	System Disk
VMware	Disk with SCSI controller: 0, ID:0
Hyper-V	Device, Primary channel (0)
Oracle VM	- When the L-Server is an HVM (Hardware Virtualized Machine) hda - When the L-Server is a PVM (Para-Virtualized Machine) xvda

- Make sure the name *image* specified when creating an image does not conflict with the name of the cloning image for the physical server. For details on the cloning image of the physical server, refer to "Chapter 7 Cloning [Windows/Linux]" in the "User's Guide VE".

[VMware] [Hyper-V]

For a cloning image name, enter a character string beginning with an alphabetic character and containing up to 32 alphanumeric characters and underscores ("_").

[Xen] [KVM]

For a cloning image name, enter a character string beginning with an alphabetic character and containing up to 22 alphanumeric characters and underscores ("_").

Examples

- To display a list of cloning images:

```
>rcxadm image list -type cloning <RETURN>
NAME                    VERSION CREATIONDATE        COMMENT
----                    ------- ------------        -------
/ImagePool/test2k3R2    1       2011/04/19-21:30:37 -
```

- To display the detailed information of a cloning image:

```
>rcxadm image list -type cloning -detail <RETURN>
NAME                    VERSION CREATIONDATE        TYPE     COMMENT
----                    ------- ------------        ----     -------
/ImagePool/test2k3R2    1       2011/04/19-21:30:37 VMware   -
```

- To display additional information of a cloning image:

```
>rcxadm image list -type cloning -extend disksize <RETURN>
NAME                    VERSION CREATIONDATE        DISKS                   COMMENT
----                    ------- ------------        -----                   -------
/ImagePool/test2k3R2    1       2011/04/19-21:30:37 30.0GB,20.0GB,50.0GB    -
```

- To display the list of snapshots:

```
>rcxadm image list -type snapshot <RETURN>
SERVERNAME              VERSION BACKUPDATE           COMMENT
----------              ------- ------------         -------
/test/TEST              1       2011/04/20-06:45:14 -
```

- To display the detailed information of a snapshot:

```
>rcxadm image list -type snapshot -detail <RETURN>
SERVERNAME              VERSION BACKUPDATE           TYPE      COMMENT
----------              ------- ------------         ----      -------
/test/TEST              1       2011/04/20-06:45:14 VMware    -
```

1.5 L-Platform Template and L-Server Template Operations

This section explains the commands used for L-Platform template and L-Server template operations.

1.5.1 rcxadm template

Name

[Windows]
Installation_folder**Manager\bin\rcxadm template** - L-Server template operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm template - L-Server template operations

Format

```
rcxadm template import -file file [-force] [-nowait]
rcxadm template list [-verbose]
rcxadm template show -name name
rcxadm template export -file file [-name name]
rcxadm template modify -name name {[-new_name name] [-label label] [-comment comment]} [-nowait]
rcxadm template delete -name name [-force] [-nowait]
```

Description

rcxadm template is the command used to perform operations on L-Server templates. L-Server templates define the values such as the number of CPUs, memory capacity, and disk capacity that comprise an L-Server. Using an L-Server template enables easy creation of L-Servers.

Subcommands

import

Imports the L-Server template defined in an XML file.

list

Displays a list of the L-Server templates that can be accessed. Using the -verbose option also displays information regarding the redundancy configuration and operation location.

The following detailed information is displayed:

- For physical L-Servers

Table 1.65 Information for L-Server Templates of Physical L-Servers

Item Name	Description
NAME	L-Server template name
TYPE	Server type
SPEC/MODEL	Model
DISKS	Disk size When there are multiple disks, they are displayed separated by commas.
NICS	Number of NICs (a hyphen "-" is displayed, as this parameter is not supported)
REDUNDANCY (*1)	Server redundancy
POSITIONING (*1)	Positioning (a hyphen "-" is displayed, as this parameter is not supported)

*1: When specifying -verbose for the option, it is displayed.

- For virtual L-Servers

Table 1.66 Information for L-Server Templates of Virtual L-Servers

Item Name	Description
NAME	L-Server template name
TYPE	Server type
SPEC	CPU clock frequency, CPU number, and memory size used to comprise the L-Server
DISKS	Disk size When there are multiple disks, they are displayed separated by commas.
NICS	Number of NICs
REDUNDANCY (*1)	Server redundancy
POSITIONING (*1)	Positioning

*1: When specifying -verbose for the option, it is displayed.

show

Displays the detailed information for the specified L-Server template.

The following detailed information is displayed:

- For physical L-Servers

Table 1.67 Detailed Information for L-Server Templates of Physical L-Servers

Item Name	Description
Name	L-Server template name
Label	Label
Comment	Comment
ServerType	Server type
Model	Server model name
CPUPerf	CPU performance
NumOfCPU	Number of CPUs
MemorySize	Memory size
DiskType[*num*]	Disk type name

Item Name	Description
	The index number of the disk element is configured in *num*. The number is "0" or larger.
DiskSize[*num*]	The disk size to allocate to L-Servers The index number of the disk element is configured in *num*. The number is "0" or larger.
NumOfNIC	Number of NICs used for an L-Server
NIC[*num*][NumOfNetworkLinks]	Number of networks that use VLAN In *num*, the NIC number is set. The number is "0" or larger.
NICGroup[*num*][NumOfNetworkLinks]	Number of networks to be redundant In *num*, specify the NIC redundancy group number. The number is "0" or larger.
NICGroup[*num*][NICLinks]	NIC number for redundancy In *num*, specify the NIC redundancy group number. The number is "0" or larger.
Redundancy	Server redundancy to assign to L-Servers
FCConnectionPattern	FC connection pattern file
AliveMonitoring	Alive monitoring setting status
ReserveResources	Retention of resources
SpareSelection	Selection method for spare servers
LServer	L-Servers created using this L-Server template

- For virtual L-Servers

Table 1.68 Detailed Information for L-Server Templates of Virtual L-Servers

Item Name	Description
Name	L-Server template name
Label	Label
Comment	Comment
ServerType	Server type
VMType	VM type
CPUArch	CPU architecture
CPUPerf	CPU performance
NumOfCPU	Number of CPUs
CPUReserve	The minimum number of CPU resources to be allocated
CPUShare	The relative proportion for allocation of CPU resources
CPUWeight	The priority for allocation of CPU resources
MemorySize	Memory size
MemoryReserve	The minimum amount of memory resources to be allocated
MemoryShare	The relative proportion for allocation of memory resources
StartupRAM	Initial memory capacity to be allocated at startup
MemoryBuffer	Available memory to be reserved as a buffer
MemoryWeight	The priority for allocation of memory resources

Item Name	Description

DynamicMemory	Dynamic memory settings
	
	One of the following is displayed:
	
	  - When dynamic memory settings are enabled
	
	    "on" is displayed.
	
	  - When dynamic memory settings are disabled
	
	    "off" is displayed.
	
	If left blank, no value is displayed.

DiskSize[*num*]	The disk size to allocate to L-Servers The index number of the disk element is configured in *num*. The number is "0" or larger.
Shared[*num*]	Shared status of disks The index number of the disk element is configured in *num*. The number is "0" or larger.
NumOfNIC	Number of NICs used for an L-Server
Redundancy	Server redundancy to assign to L-Servers
Positioning	Physical location of the server to allocate to L-Servers
AliveMonitoring	Alive monitoring setting status

OverCommit	Setting for overcommit
	
	One of the following is displayed:
	
	  - When overcommit settings are enabled
	
	    "true" is displayed.
	
	  - When overcommit settings are disabled
	
	    "false" is displayed.

ReserveResources	Retention of resources
LServer	L-Servers created using this L-Server template

export

Exports the specified L-Server template information in the XML format. If you do not specify an L-Server template with the -name option, all L-Server templates are exported.

modify

Modifies the label, comment, and name of the specified L-Server template.

delete

Deletes the specified L-Server template. Use the -force option to forcibly delete the specified L-Server template even if there are L-Servers created from the template.

Options

-file *file*

In *file*, specify the L-Server template XML file to import or export.

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the L-Server template specified in the subcommand to complete its execution.

-name *name*

In *name*, specify the L-Server template name.

-verbose

Use this option to display the redundancy configuration and the operation location.

-new_name *name*

In *name*, specify the new L-Server template name.

-label *label*

In *label*, specify the new label.

-comment *comment*

In *comment*, specify the new comments.

-force

Use the -force option to import to overwrite the L-Server template even if there are existing L-Server templates.

Use the -force option to forcibly delete the specified L-Server template even if there are L-Servers created from the template.

Examples

- To display a list of the L-Server templates that can be accessed:

    - For virtual L-Servers

```
>rcxadm template list <RETURN>
NAME              TYPE       SPEC             DISKS              NICS
----              ----       ----             -----              ----
no-nic            Virtual    1.0GHz,1,2.0GB   10.0GB,12.0GB      -
small             Virtual    1.0GHz,1,1.0GB   10.0GB             -
```

    - For physical L-Servers

```
>rcxadm template list <RETURN>
NAME              TYPE       SPEC/MODEL        DISKS             NICS
----              ----       ----------        -----             ----
sample_physical   Physical   "PRIMERGY BX922 S2" 40.0GB          -


>/opt/FJSVrcvmr/bin/rcxadm template list -verbose <RETURN>
NAME              TYPE       SPEC/MODEL        DISKS             NICS
REDUNDANCY POSITIONING
----              ----       ----------        -----             ----
---------- -----------
sample_physical   Physical   "PRIMERGY BX922 S2" 40.0GB          -
None       -
sample_physical2  Physical   2.0GHz,4,8.0GB    40.0GB            1
None       -
```

- To also display information regarding the redundancy configuration and the positioning:

```
>rcxadm template list -verbose <RETURN>
NAME              TYPE       SPEC             DISKS              NICS REDUNDANCY
POSITIONING
----              ----       ----             -----              ---- ----------
----------
no-nic            Virtual    1.0GHz,1,2.0GB   10.0GB,12.0GB      -    None      Fixed
```

```
    small                 Virtual       1.0GHz,1,1.0GB      10.0GB                  -      None
    Fixed
```

- To display the detailed information for the specified L-Server template:

  - For virtual L-Servers

```
>rcxadm template show -name small <RETURN>
Name: small
Label: label of the small
ServerType: Virtual
VMType: VMware
CPUArch: IA
CPUPerf: 1.0GHz
NumOfCPU: 1
MemorySize: 1.0GB
DiskSize[0]: 10.0GB
Redundancy: None
Positioning: Fixed
AliveMonitoring: on
```

  - For physical L-Servers

```
>rcxadm template show -name sample_physical2 <RETURN>
Name: sample_physical2
Label: sample of physical template
ServerType: Physical
CPUPerf: 2.0GHz
NumOfCPU: 4
MemorySize: 8.0GB
DiskType[0]: FC
DiskSize[0]: 40.0GB
NumOfNIC: 1
Redundancy: None
FCConnectionPattern: fc_connect
AliveMonitoring: on
```

1.6 User Operations

This section explains the commands used to operate users and access privileges.

1.6.1 rcxadm user

Name

[Windows]
Installation_folder**Manager****bin****rcxadm user** - user operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm user - user operations

Format

```
rcxadm user create -file file.xml
rcxadm user list [-format text|xml|ldif] [-outfile outfile]
rcxadm user show -name name [-format text|xml] [-outfile outfile]
rcxadm user modify -file file.xml
rcxadm user delete -name name
```

Description

rcxadm user is the command to perform the following operations:

- Register a user

- Modify a password

- Modify authority level

- Delete a user

- Operate by user

- Restrict the access scope

Subcommands

create

Creates a user.
Use the -file option to specify the XML file that defines the attributes of one or more users to register. For details on the XML file definition, refer to "2.8 User".

The user is registered in the directory service when changing to the setting that registers the user in the directory service with the directory service operation definition file.
The user of the directory service is registered at the following positions.

- For OpenDS

cn=*user ID*,ou=users,*Base DN*

- For Active Directory

cn=*user ID*,cn=users,*BaseDN*

The user is registered to the following group of the directory service.

cn=IflowUsers,ou=group,*BaseDN*

For details on the directory service operation definition file, refer to "6.6.1 Settings for Tenant Management and Account Management" in the "Operation Guide CE".

list

Displays a list of user information in the text format, XML format, or LDIF.
For the text format, the following information is displayed.

Table 1.69 User Information (the text format)

Item Name	Description
NAME	User ID
USERGROUP	Name of the user group the user belongs to
LABEL	Label for the user
ROLE	Scope and role of access of the user Displayed as "*access_scope=role*", and when there are multiple roles, they are displayed separated by commas.

For the XML format at the tenant management roles and the tenant user role, the following information is displayed.

Table 1.70 User Information (the XML format at the tenant management roles and the tenant user role)

Item Name	Description
User name	User ID

Item Name	Description
Comment	Comment for the user
Role name	Role of the user
Scope	Tenant to whom user belongs
MailAddress	User's email address
ContractName	Company name or department name
EmergencyMailAddress	User's emergency contact email address
TelephoneNumber	User's telephone number
FirstName	User's first name
LastName	User's first name
MiddleName	User's middle name

In the XML format for infrastructure administrative roles and multiple roles, the following information is displayed.

Table 1.71 User Information (the XML format for the infrastructure administrative roles and multiple roles)

Item Name	Description
User name	User ID
User label	Label for the user
Comment	Comment for the user
UserGroup	Name of the user group the user belongs to
Role name	Role of the user
Scope	Access scope for the specified role
MailAddress	User's email address

When LDIF is specified, user IDs are output.

show

Displays the detailed information for the specified user in the text format.

The following detailed information is displayed:

Table 1.72 Detailed Information for Users

Item Name	Description
NAME	User ID
USERGROUP	Name of the user group the user belongs to
LABEL	Label for the user
COMMENT	Comment for the user
ROLE[*num*]	Scope and role of access of the user A number starting from "0" is displayed for *num*, and when there are multiple roles, they are displayed separated by commas.

For the XML format, same information as display information on the list subcommand is displayed.

modify

Modifies the information of the specified user.
Use the -file option to specify the XML file that defines the attributes of one or more users to change. For details on the XML file definition, refer to "2.8 User".

delete

Deletes the specified user.
The user is deleted from the directory service when changing to the setting that registers the user in the directory service with the directory service operation definition file.

Options

-file *file.xml*

In *file.xml*, specify the XML file that defines one or more user attributes to register or change.
For details on the XML file definition, refer to "2.8 User".

It is possible to perform batch registration or changes of multiple users using the output results of list -format xml.
When the error occurs by users' registration or changes, processing is interrupted. Remove the error factor and delete user information that has succeeded from the file in registration or the change.

-name *name*

In *name*, specify the user ID.

-format text|xml|ldif

Specify the display format. You can specify text, xml, or ldif format. ldif can be specified only for the list subcommand.
When -format is omitted, it is displayed in text format.

-outfile *outfile*

In *outfile*, specify the file that stores output information. Information is output by the UTF-8 form. Please set it when you change user information by using the output result of the XML form with multi byte character.
When the specified file exists, it becomes an error.

Examples

- To create a user:

```
>rcxadm user create -file myusers.xml <RETURN>
```

- To display a list of user information in the text format:

```
>rcxadm user list <RETURN>
NAME                USERGROUP        LABEL           ROLE
----                ---------        -----           ----
aaa                 -                -               all=administrator
admin_user          administrator    -               -
bbb                 -                -               /folder001=administrator
folder_user         folder_group     -               -
manage              -                -               -
```

- To display the detailed information for the specified user in the text format:

```
>rcxadm user show -name aaa <RETURN>
Name      : aaa
UserGroup :
Label     :
Comment   :
Role[0]   : all=administrator
```

1.6.2 rcxadm usergroup

Name

[Windows]
*Installation_folder***\Manager\bin\rcxadm usergroup** - user group operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm usergroup - user group operations

Format

```
rcxadm usergroup create -file file.xml
rcxadm usergroup create -name usergroup [-label label] [-comment comment] [-role scope=role[,...]]
rcxadm usergroup list [-format {text|xml}]
rcxadm usergroup show -name usergroup
rcxadm usergroup modify -name usergroup -file file.xml
rcxadm usergroup modify -name usergroup {[-new_name usergroup] [-label label] [-comment comment] [-role scope=role[,...]]}
rcxadm usergroup delete -name usergroup
```

Description

rcxadm usergroup is the command used to perform operations on multiple users and batch restriction of access scopes. By performing operations on and restricting the access scope for a user group, the settings are applied on all users registered in that user group. When different settings are specified for a user and its user group, the settings for the user are prioritized.

Subcommands

create

> Create a user group.
> For details on the definition of the XML file to be specified for the -file option, refer to "2.9 User Groups".

list

> Displays a list of user group information in text format or XML format.

> For the text format or XML format, the following information is displayed.

Table 1.73 User Group Information

Item Name	Description
NAME	User group name
LABEL	Label for the user group
ROLE	Scope and role of access of the user group Displayed as "*access_scope=role*", and when there are multiple roles, they are displayed separated by commas.

show

> Displays the detailed information for the specified user in the text format.

> The following detailed information is displayed:

Table 1.74 Detailed Information for User Groups

Item Name	Description
NAME	User group name
LABEL	Label for the user group
COMMENT	Comment for the user group

Item Name	Description
USER[*num*]	User IDs of belonging users A number starting from "0" is displayed for *num*, and when there are multiple roles, they are displayed separated by commas.
ROLE[*num*]	Scope and role of access of the user group A number starting from "0" is displayed for *num*, and when there are multiple roles, they are displayed separated by commas.

modify

Modifies the following items of the specified user group.

- User Group Name

- Label

- Comment

- Operations

- Access Scope

User groups of the same name as the tenant cannot be modified.

For details on the definition of the XML file to be specified for the -file option, refer to "2.9 User Groups".

delete

Deletes the specified user group. You cannot delete a user group if it includes users.
User groups of the same name as the tenant cannot be deleted by this command. When the tenant is deleted, user groups of the same name as the tenant are deleted.

Options

-file *file.xml*

In *file.xml*, specify the XML file that defines the attributes of the user group to register or change.
For details on the XML file definition, refer to "2.9 User Groups".

It is not possible to perform batch registration or changes of multiple user groups using the output results of list -format xml.

-name *usergroup*

In *usergroup*, specify the user group name.

-label *label*

In *label*, specify the label for the user group.

-comment *comment*

In *comment*, specify the comments for the user group.

-role *scope=role*,...

In *scope*, specify the names of the resource folders, resource pools, or resources in the orchestration tree to include in the access scope.
Specify resources inside resource folders by entering a slash ("/") and the resource name after the resource folder name.
Specify resource folder names or resource names for the access scope. If you do not want to restrict the access scope, omit the access scope, or specify "all".

In *role*, specify the most appropriate role of the standard roles. Multiple access scopes and roles can be specified, separated by a comma (",").

- administrator (Administrator)

- operator (Operator)

- monitor (Infrastructure Monitor, Monitor)

- tenant_admin (Tenant Administrator)

- tenant_operator (Tenant Operator)

- tenant_monitor (Tenant Monitor)

- tenant_user (Tenant User)

- infra_admin (Infrastructure Administrator)

- infra_operator (Infrastructure Operator)

-format text|xml

Specify the display format. You can specify text or xml format.

When -format is omitted, it is displayed in text format.

-new_name *usergroup*

In *usergroup*, specify the new user group name.

Examples

- To create a user group:

>**rcxadm usergroup create -name mygroup -role all=infra_admin** <RETURN>

- To modify an access scope and a role of a user group:

>**rcxadm usergroup modify -name mygroup2 -role all=operator** <RETURN>

- To display a list of user group information in text format:

```
>rcxadm usergroup list <RETURN>
NAME                 LABEL               ROLE
----                 -----               ----
admin                -                   all=administrator
folder_group         -                   /folder001=administrator
```

- To display the detailed information for the specified user group in text format:

```
>rcxadm usergroup show -name admin <RETURN>
Name      : admin
Label     :
Comment   :
User[0]   : admin_user
Role[0]   : all=administrator
```

1.6.3 rcxadm user (for Basic mode)

Name

[Windows]
Installation_folder**Manager\bin\rcxadm user** - user operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm user - user operations

Format

```
rcxadm user create -file file.xml
rcxadm user create -name name [{-passwd password|-passwd_file password_file}] [-label label] [-
comment comment] [-usergroup usergroup] [-role scope=role[,scope=role,...]]
rcxadm user list [-format text|xml|ldif]
rcxadm user show -name name
rcxadm user modify -name name -file file.xml
rcxadm user modify -name name {[-new_name newname] [-label label] [-comment comment] [-usergroup
usergroup] {-passwd password |-passwd_file password_file} [-role scope=role[,scope=role,...]]}
rcxadm user delete -name name
```

Description

rcxadm user is the command to perform the following operations:

- Register a user

- Modify a password

- Modify authority level

- Delete a user

- Operate by user

- Restrict the access scope

Subcommands

create

Creates a user.
For directory service authentication, user information must be registered in the directory service beforehand.

list

Displays a list of user information in the text format, XML format, or LDIF.
For the text format or XML format, the following information is displayed. The information is also displayed for directory service authentication.

Table 1.75 User Information

Item Name	Description
NAME	User ID
USERGROUP	Name of the user group the user belongs to
LABEL	Label for the user
ROLE	Scope and role of access of the user Displayed as "*access_scope=role*", and when there are multiple roles, they are displayed separated by commas.

LDIF is necessary when migrating user information from the internal authentication function to the directory service. When LDIF is specified, user IDs are output.

show

Displays the detailed information for the specified user in the text format.

The following detailed information is displayed:

Table 1.76 Detailed Information for Users

Item Name	Description
NAME	User ID
USERGROUP	Name of the user group the user belongs to
LABEL	Label for the user
COMMENT	Comment for the user
ROLE[*num*]	Scope and role of access of the user A number starting from "0" is displayed for *num*, and when there are multiple roles, they are displayed separated by commas.

When user information is managed using a directory service, only the user information that is registered in the management information of Resource Orchestrator is displayed.

modify

Modifies the following items of the specified user.

- User ID

- Label

- Comment

- User Groups

- Password

- Operations

- Access Scope

delete

Deletes the specified user.
For directory service authentication, the user information cannot be deleted from the directory service.

Options

-file *file*.xml

In *file*.xml, specify the XML file that defines the attributes of the user to register or change.
It is not possible to perform batch registration or changes of multiple users using the output results of list -format xml.
For details on the XML file definition, refer to "2.16 User (for Basic mode)".

-name *name*

In *name*, specify the user ID.

-label *label*

In *label*, specify the label for the user.

-comment *comment*

In *comment*, specify the comments for the user.

-usergroup *usergroup*

In *usergroup*, specify the user group to use for setting users in batches.

-passwd *password*

In *password*, specify the password for the user.
When using Single Sign-On or directory services as external authentication functions, this option cannot be specified for the create subcommand.

-passwd_file *password_file*

> In *password_file*, specify the password file for the user. When users other than administrators use an admin server, it is dangerous to specify the password using an argument such as -passwd because the arguments of commands issued by other users can be viewed. Use the -passwd_file option.
>
> In the file that defines the passwords, enter a user ID and password on each line, separated by a comma (","). The password entered in the line including the user ID specified with the -name option will be registered.
>
> When using Single Sign-On or directory services as external authentication functions, this option cannot be specified for the create subcommand.

-role *scope=role*,...

> In *scope*, specify the names of the resource folders, resource pools, and resources in the orchestration tree to include in the access scope. Specify resources inside resource folders by entering a slash ("/") and the resource name after the resource folder name.
>
> Specify resource folder names or resource names for the access scope. If you do not want to restrict the access scope, omit the access scope, or specify "all".
>
> In *role*, specify the most appropriate role of the standard roles. Multiple access scopes and roles can be specified, separated by a comma (",").

- administrator (Administrator)

- operator (Operator)

- monitor (Infrastructure Monitor, Monitor)

- tenant_admin (Tenant Administrator)

- tenant_operator (Tenant Operator)

- tenant_monitor (Tenant Monitor)

- tenant_user (Tenant User)

- infra_admin (Infrastructure Administrator)

- infra_operator (Infrastructure Operator)

-format text|xml|ldif

> Specify the display format. You can specify text, xml, or ldif format.
>
> When -format is omitted, it is displayed in text format.

-new_name *newname*

> In *newname*, specify the new user ID.

Examples

- To create a user:

```
>rcxadm user create -name myuser -passwd mypassword -role all=infra_admin <RETURN>
```

- To set an access scope and a role to a user for directory service authentication:

```
>rcxadm user modify -name myuser2 -role all=tenant_admin <RETURN>
```

- To display a list of user information in the text format:

```
>rcxadm user list <RETURN>
NAME                USERGROUP           LABEL               ROLE
----                ---------           -----               ----
aaa                 -                   -                   all=administrator
admin_user          administrator       -                   -
bbb                 -                   -                   /
folder001=administrator
```

```
folder_user          folder_group        -               -
manage               -                   -               -
```

- To display the detailed information for the specified user in the text format:

```
>rcxadm user show -name aaa <RETURN>
Name      : aaa
UserGroup :
Label     :
Comment   :
Role[0]   : all=administrator
```

1.6.4 rcxadm usergroup (for Basic mode)

Name

[Windows]
Installation_folder**Manager\bin\rcxadm usergroup** - user group operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm usergroup - user group operations

Format

```
rcxadm usergroup create -file file.xml
rcxadm usergroup create -name usergroup [-label label] [-comment comment] [-role scope=role[,...]]
rcxadm usergroup list [-format {text|xml}]
rcxadm usergroup show -name usergroup
rcxadm usergroup modify -name usergroup -file file.xml
rcxadm usergroup modify -name usergroup {[-new_name usergroup] [-label label] [-comment comment] [-
role scope=role[,...]]}
rcxadm usergroup delete -name usergroup
```

Description

rcxadm usergroup is the command used to perform operations on multiple users and batch restriction of access scopes. By performing operations on and restricting the access scope for a user group, the settings are applied on all users registered in that user group. When different settings are specified for a user and its user group, the settings for the user are prioritized.
For directory service authentication, all operations using this command are allowed.

Subcommands

create

Create a user group.

list

Displays a list of user group information in text format or XML format.

For the text format or XML format, the following information is displayed.

Table 1.77 User Group Information

Item Name	Description
NAME	User group name
LABEL	Label for the user group
ROLE	Scope and role of access of the user group

Item Name	Description
	Displayed as "*access_scope=role*", and when there are multiple roles, they are displayed separated by commas.

show

Displays the detailed information for the specified user in the text format.

The following detailed information is displayed:

Table 1.78 Detailed Information for User Groups

Item Name	Description
NAME	User group name
LABEL	Label for the user group
COMMENT	Comment for the user group
USER[*num*]	User IDs of belonging users A number starting from "0" is displayed for *num*, and when there are multiple roles, they are displayed separated by commas.
ROLE[*num*]	Scope and role of access of the user group A number starting from "0" is displayed for *num*, and when there are multiple roles, they are displayed separated by commas.

modify

Modifies the following items of the specified user group.

- User Group Name

- Label

- Comment

- Operations

- Access Scope

delete

Deletes the specified user group. You cannot delete a user group if it includes users.

Options

-file *file*.xml

In *file*.xml, specify the XML file that defines the attributes of the user group to register or change.
It is not possible to perform batch registration or changes of multiple user groups using the output results of list -format xml.
For details on the XML file definition, refer to "2.9 User Groups".

-name *usergroup*

In *usergroup*, specify the user group name.

-label *label*

In *label*, specify the label for the user group.

-comment *comment*

In *comment*, specify the comments for the user group.

-role *scope=role,...*

In *scope*, specify the names of the resource folders, resource pools, or resources in the orchestration tree to include in the access scope.
Specify resources inside resource folders by entering a slash ("/") and the resource name after the resource folder name.

Specify resource folder names or resource names for the access scope. If you do not want to restrict the access scope, omit the access scope, or specify "all".

In *role*, specify the most appropriate role of the standard roles. Multiple access scopes and roles can be specified, separated by a comma (",").

- administrator (Administrator)

- operator (Operator)

- monitor (Infrastructure Monitor, Monitor)

- tenant_admin (Tenant Administrator)

- tenant_operator (Tenant Operator)

- tenant_monitor (Tenant Monitor)

- tenant_user (Tenant User)

- lplatform_user (L-Platform User)

- infra_admin (Infrastructure Administrator)

- infra_operator (Infrastructure Operator)

-format text|xml

Specify the display format. You can specify text or xml format.

When -format is omitted, it is displayed in text format.

-new_name *usergroup*

In *usergroup*, specify the new user group name.

Examples

- To create a user group:

```
>rcxadm usergroup create -name mygroup -role all=infra_admin <RETURN>
```

- To modify an access scope and a role of a user group:

```
>rcxadm usergroup modify -name mygroup2 -role all=tenant_admin <RETURN>
```

- To display a list of user group information in text format:

```
>rcxadm usergroup list <RETURN>
NAME                 LABEL              ROLE
----                 -----              ----
admin                -                  all=administrator
folder_group         -                  /folder001=administrator
```

- To display the detailed information for the specified user group in text format:

```
>rcxadm usergroup show -name admin <RETURN>
Name      : admin
Label     :
Comment   :
User[0]   : admin_user
Role[0]   : all=administrator
```

1.7 Control and Environment Setup

This section explains the commands used for control and environment setup of the manager and agents that comprise Resource Orchestrator.

1.7.1 rcxadm storagemgr

Name

[Windows]
Installation_folder**Manager\bin\rcxadm storagemgr** - storage management software operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm storagemgr - storage management software operations

Format

```
rcxadm storagemgr register -name name -soft_name soft_name [-label label] [-comment comment] [-
soft_url url] [-ip ipaddress] [-port number] [-user_name user_name] [-passwd password|-passwd_file
password_file]
rcxadm storagemgr list [-verbose]
rcxadm storagemgr show -name name
rcxadm storagemgr unregister -name name
rcxadm storagemgr modify -name name [-label label] [-comment comment] [-soft_url url] [-ip ipaddress]
[-port number] [-user_name user_name] [-passwd password|-passwd_file password_file]
```

Description

rcxadm storagemgr is the command used to perform operations of storage management software.

Subcommands

register

Registers storage management software.

list

Displays a list of storage management software information.

The following detailed information is displayed:

Table 1.79 Storage Management Software Information

Item Name	Description
NAME	Storage management software name
LABEL	Storage management software label
COMMENT (*1)	Storage management software comment
SOFT NAME	Name of storage management software
STATUS	Storage management software status
IP ADDRESS (*1)	IP address to use to access the storage management software
PORT (*1)	Port number to use to access the storage management software

*1: When specifying -verbose for the option, it is displayed.

show

Displays the detailed information for storage management software.

The following detailed information is displayed:

Table 1.80 Detailed Information for Storage Management Software

Item Name	Description
NAME	Storage management software name
LABEL	Storage management software label
COMMENT	Storage management software comment
SOFT NAME	Name of storage management software
VERSION	Version of storage management software
URL	URL to use to access the storage management software
IP ADDRESS	IP address to use to access the storage management software
PORT NUMBER	Port number to use to access the storage management software
STATUS	Storage management software status
USER NAME	Storage management software user ID
PASSWORD	Password for storage management software user ID

unregister

Unregisters storage management software.

modify

Modifies the following items of storage management software:

- Label

- Comment

- IP address

- Port number

- User name

- Password

When the storage management software is ESC, an error occurs if the following options are specified.

- -ip

- -port

- -user_name

- -passwd

- -passwd_file

When the storage management software is Navisphere, an error occurs if the following options are specified.

- -ip

- -port

- -user_name

- -passwd

- -passwd_file

When the storage management software is Solutions Enabler, an error occurs if the following options are specified.

- -ip

- -port

- -user_name

- -passwd

- -passwd_file

If the storage management software is the one of the following, an error occurs because this command cannot be used to make changes.

- VMware vCenter Server

- SCVMM

- Oracle VM Manager

- iSCSI controller for Resource Orchestrator

Options

-name *name*

In *name*, specify the resource name of the target storage management software to perform an operation with.

-soft_name *soft_name*

In *soft_name*, specify the storage management software. The names that can be specified are as follow:

- When using ETERNUS SF Storage Cruiser

Specify "esc".

If the following options are specified, an error will occur.

- -ip

- -port

- -user_name

- -passwd

- -passwd_file

- When using Data ONTAP

Specify "ontap".

If the following options are not specified, an error will occur.

- -ip

- -user_name

- -passwd

- -passwd_file

- When using PRIMECLUSTER GDS

Specify "gds".

If the following options are not specified, an error will occur.

- -ip

- -user_name

- -passwd

- -passwd_file

- When using Navisphere

Specify "emcns".

If -ip is not specified, an error will occur.

If the following options are specified, an error will occur.

- -port

- -user_name

- -passwd

- -passwd_file

- When using Solutions Enabler

Specify "emcse".

If the following options are specified, an error will occur.

- -ip

- -port

- -user_name

- -passwd

- -passwd_file

-soft_url *url*

In *url*, specify the URL to use to access the storage management software.

When specifying -soft_name esc and managing only an ETERNUS, specify the URL of ETERNUSmgr for the ETERNUS.

When managing multiple ETERNUSs, do not specify -soft_url.

-ip *ipaddress*

In *ipaddress*, specify an IP address to use to access the storage management software.

-port *number*

In *number*, specify a port number to use to access the storage management software.

-user_name *user_name*

In *user_name*, specify the user ID for the storage management software.

When specifying -soft_name ontap, specify root.

-passwd *password*

In *password*, specify the password for the storage management software.

-passwd_file *password_file*

In *password_file*, specify the password file for the storage management software. When users other than administrators use an admin server, it is dangerous to specify the password using an argument such as -passwd because the arguments of commands issued by other users can be viewed. Use the -passwd_file option.
In the file that defines the passwords, enter a user name and password on each line, separated by a comma (","). The password entered in the line including the user name specified with the -user_name option will be registered.

-verbose

Specify when displaying detailed information.

-label *label*

In *label*, specify the new label.

-comment *comment*

In *comment*, specify the new comments.

Examples

- To display the list of the storage management software information:

```
>rcxadm storagemgr list <RETURN>
NAME      LABEL     SOFT NAME                     STATUS
----      -----     ---------                     ------
esc00     -         ETERNUS SF Storage Cruiser    normal
```

- To display the details of the storage management software information:

```
>rcxadm storagemgr list -verbose <RETURN>
NAME      LABEL     COMMENT   SOFT NAME                    STATUS   IP
ADDRESS PORT
----      -----     -------   ---------                    ------
---------- ----
esc00     -         -         ETERNUS SF Storage Cruiser normal
-          -
```

- To display the detailed information for storage management software:

```
>rcxadm storagemgr show -name esc00 <RETURN>
Name: esc00
Label:
Comment:
Soft name: ETERNUS SF Storage Cruiser
Version: 14.2
URL:
IP address:
Port number:
Status: normal
User name:
Password:
```

1.7.2 rcxadm imagemgr

rcxadm imagemgr is an existing ROR VE command.
For details, refer to "5.5 rcxadm imagemgr" of the "Command Reference".

Name

[Windows]
Installation_folder**Manager\bin\rcxadm imagemgr** - modifying image management information

[Linux]
/opt/FJSVrcvmr/bin/rcxadm imagemgr - modifying image management information

Format

```
rcxadm imagemgr set -attr {vm.clone|vm.snapshot}.maxversion=value
```

Description

The additional functions of rcxadm imagemgr are indicated below.

You can specify vm.clone and vm.snapshot in attributes used for controlling the number of image versions.

rcxadm imagemgr set -attr {vm.clone|vm.snapshot}.maxversion=*max_version*

Options

-attr {vm.clone|vm.snapshot}.maxversion=*max_version*

Specify the maximum number of image file versions.

- For the number of cloning image versions

Specify "vm.clone".

- For the number of snapshot versions

Specify "vm.snapshot".

In *max_version*, specify the maximum number of image file versions to change. The values that can be specified for *max_version* are any value between 1 and 10.

1.7.3 rcxadm vmmgr

Name

[Windows]
Installation_folder**Manager\bin\rcxadm vmmgr** - VM management software operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm vmmgr - VM management software operations

Format

```
rcxadm vmmgr list
rcxadm vmmgr show -name name
rcxadm vmmgr refresh
```

Description

rcxadm vmmgr is the command used to manage VM management software. The information of VM management software is displayed.

Subcommands

list

Displays a list of VM management software information.

The following detailed information is displayed:

Table 1.81 VM Management Software Information

Item Name	Description
NAME	Name of the target VM management software
TYPE	Types of VM management software
IPADDRESS	IP address to use to access the VM management software
STATUS	VM management software status

show

Displays the detailed information for VM management software.

The following detailed information is displayed:

Table 1.82 Detailed Information for VM Management Software

Item Name	Description
NAME	Name of the target VM management software
TYPE	Types of VM management software
IPADDRESS	IP address to use to access the VM management software
STATUS	VM management software status
MANAGERSOFTWAREURL	URL to use to access the VM management software

refresh

When using the Disaster Recovery feature, the regular update of VM management software is forcibly implemented in order to recover a virtual L-Server.

Options

-name *name*

In *name*, specify the name of the target VM management software to perform operations with.

Examples

- To display a list of VM management software information:

```
>rcxadm vmmgr list <RETURN>
NAME                          TYPE          IPADDRESS
STATUS
----                          ----          ---------
------
SCVMM1                        SCVMM         192.168.10.20
normal
vCenterServer1                vCenter Server
192.168.100.20  normal
```

- To display the detailed information for VM management software:

```
>rcxadm vmmgr show -name SCVMM1 <RETURN>
Name: SCVMM1
Type: SCVMM
IpAddress: 192.168.10.20
Status: normal
ManagementSoftwareURL: https://192.168.10.20/sdk
LibraryShare[0]: \\rcxvmmshv-dc.rcxvmmshv.local
\MSSCVMMLibrary
LibraryShare[1]: \\rcxclusterfs.rcxvmmshv.local\SCVMM-LIB

>rcxadm vmmgr show -name vCenterServer1 <RETURN>
Name: vCenterServer1
Type: vCenter Server
IpAddress: 192.168.100.20
Status: normal
ManagementSoftwareURL: https://192.168.100.20/sdk
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

1.7.4 rcxadm agtctl

rcxadm agtctl is an existing ROR VE command.
For details, refer to "5.1 rcxadm agtctl" of the "Command Reference".

1.7.5 rcxadm certctl

rcxadm certctl is an existing ROR VE command.
For details, refer to "5.2 rcxadm certctl" of the "Command Reference".

1.7.6 rcxadm deployctl

rcxadm deployctl is an existing ROR VE command.
For details, refer to "5.4 rcxadm deployctl" of the "Command Reference".

1.7.7 rcxadm lanctl

rcxadm lanctl is an existing ROR VE command.
For details, refer to "5.6 rcxadm lanctl" of the "Command Reference".

1.7.8 rcxadm mgrctl

rcxadm mgrctl is an existing ROR VE command.
For details, refer to "5.7 rcxadm mgrctl" of the "Command Reference".

This section explains the additional functions.

Description

[Windows]
If port numbers are changed, the following lines in the *Windows_system_folder*\system32\drivers\etc\services file are automatically updated.

[Linux]
If port numbers are changed, the following lines in the /etc/services file are automatically updated:

```
# Service name  Port number/Protocol name
rcxmgr          23460/tcp
rcxweb          23461/tcp
rcxtask         23462/tcp
rcxmongrel1     23463/tcp
rcxmongrel2     23464/tcp
rcxmongrel3     23466/tcp
rcxmongrel4     23467/tcp
rcxmongrel5     23468/tcp
rcxdb           23465/tcp
nfdomain        23457/tcp
nfagent         23458/tcp
```

Options

-port *name=number*

In *name*, specify the port name to be changed. In *number*, specify the new port number.
For the port name, specify the following values:

- "rcxmgr"

- "rcxweb"

- "rcxtask"

- "rcxmongrel1"

- "rcxmongrel2"

- "rcxmongrel3"

- "rcxmongrel4"

- "rcxmongrel5"

- "rcxdb"

- "nfdomain"

- "nfagent"

1.7.9 deployment_service_uninstall

deployment_service_uninstall is an existing ROR VE command.
For details, refer to "5.12 deployment_service_uninstall" in the "Command Reference".

1.7.10 rcxadm authctl

Name

[Windows]
Installation_folder**Manager\bin\rcxadm authctl** - user management using directory service

[Linux]
/opt/FJSVrcvmr/bin/rcxadm authctl - user management using directory service

Format

```
rcxadm authctl register -ip ip_address [-port port] -base base_dn -bind bind_dn [-method {SSL|PLAIN}]
{-passwd password|-passwd_file password_file} [-auth {serverview|ldap}]
rcxadm authctl unregister
rcxadm authctl show
rcxadm authctl modify -ip ip_address [-port port] -base base_dn -bind bind_dn [-method {SSL|PLAIN}]
{-passwd password|-passwd_file password_file} [-auth {serverview|ldap}]
rcxadm authctl export
```

Description

rcxadm authctl is the command to operate the connection information of the directory server that retains user authentication information.

Only OS administrators can execute this command.

When using the following subcommands, stop the manager prior to command execution:

- register

- unregister

- modify

Subcommands

register

> Registers a directory server with Resource Orchestrator.
> When a directory server is registered, user authentication is performed in the directory service.

unregister

> Unregisters a directory server registered with Resource Orchestrator. User information registered in the directory server is not deleted, the information is only deleted from Resource Orchestrator.
> When the registration is released, user authentication is performed using the internal authentication function.

modify

> Modifies settings of the directory service registered with Resource Orchestrator.

show

> The registered directory server information is displayed in the following format.

```
ip address: IP_address
port: Port_number
base: base_dn
bind: Administrator_user_DN
method:
Encryption_communication_method
auth: Authentication_method
```

export

> Migrates the information from a directory server used with Resource Orchestrator, to the management information of Resource Orchestrator.

> When user information is being managed using a directory service with Resource Orchestrator, this task must be done before migration.

> Migrate the following information to the management information:

> - User group information and the users belonging to it

- Role definition

- Scope and role of access

- Resource information under the orchestration tree (the names and tree structure)

Options

-ip *ip*

Specify the IP address of the directory server to register.

-port *port*(optional)

Specify the port number of the directory server to register. When omitted, the following port numbers are regarded as having been specified using the -method value.

```
SSL   : 636
PLAIN : 389
```

-base *base_dn*

Specify the search base of the directory server to register in DN format.

-bind *bind_dn*

Specify the administrative privilege user name of the directory server to register in DN format.

-method {SSL|PLAIN} (optional)

Specify the encryption communication method to use with the directory server to register. Specify one of following.

If this option is omitted, "SSL" is specified. If PLAIN is specified, encryption is not performed.

- SSL

- PLAIN

-passwd *password*

Specify the password for the administrative privilege user of the directory server to register.

-passwd_file *password_file*

Specify the administrative privilege user name of the directory server to register.

-auth (optional)

This option is used in Basic mode.

Specify the method for user authentication. Specify one of following items.

If omitted, "serverview" is set.

- serverview

Operation using ServerView Operations Manager and Single Sign-On is performed.

- ldap

Only user authentication using directory service is performed. Operation is not performed using Single Sign-On.

Examples

- To display the registered directory service information:

```
>rcxadm authctl show <RETURN>
ip address: 127.0.0.1
port: 389
```

```
base: dc=fujitsu,dc=com
bind: cn=manager,dc=fujitsu,dc=com
method: PLAIN
auth: ldap
```

1.7.11 rcxadm config

Name

[Windows]
Installation_folder**Manager\bin\rcxadm config** - import and export of configuration information

[Linux]
/opt/FJSVrcvmr/bin/rcxadm config - import and export of configuration information

Format

rcxadm config import -dir *directory*
rcxadm config export -dir *directory* **[[-noretry]|[-timeout** *value***]]**
rcxadm config map -file *resource_map_file* **-dir** *directory*
rcxadm config filter {-tenant *tenant_name***|-global|-type vm|-exclude vm |-exclude** *type* **-name** *name* **|-convert} -indir** *indir* **-outdir** *outdir*
rcxadm config cleanup -alluser
rcxadm config reserve -dir *directory*
rcxadm config show -type *type* **-name** *name* **-dir** *directory* **-format xml**

Description

rcxadm config is the command to import or export configuration information, when executing DR (Disaster Recovery).

Subcommands

import

Imports the configuration information.

In *dir*, specify the storage folder for the configuration information of the resource to be imported.

export

Exports the configuration information.

After executing the command, the following XML files are created in the folder specified using *dir*.

For details on XML files, refer to "Chapter 2 Resource Configuration Information and User Definition Information (XML Files)".

- *dir*\l_server_templates.xml

- *dir*\l_servers.xml

- *dir*\image.xml

- *dir*\network_resources.xml

- *dir*\address_resource.xml

- *dir*\resource_folders.xml

- *dir*\users.xml

- *dir*\user_groups.xml

- *dir*\pools.xml

- *dir*\lnetdev.xml

map

Configures the exported Resource Orchestrator, and associate resources of the backup site.

filter

Filters the configuration information to divide and import the exported settings for Resource Orchestrator.

cleanup

Initialize the settings of this product when failback is performed after Disaster Recovery.

reserve

Reserve the resource ID so that the resource ID used in the settings for this product that are exported do not conflict with the resources in the destination for Disaster Recovery failback.

show

Displays the details of the settings for this product that were exported.

Options

-dir *directory*

Specify the directory in which the configuration information for associating resources is stored.

-noretry

Use this option to return directly to the command prompt without waiting for the operation being executed on the admin server to complete its execution.
Export can only be performed when no other operation is being executed. If an operation is being executed, this command will return an error.

-timeout *value*

Use this option to wait the number of seconds specified in *value* for completion of the operation being performed on the admin server. If the operation is not completed within the specified time, this command will return an error.

If this option is omitted, the default value (3600 seconds) is set. When this option is specified, value can be specified between 1 to 172800(2days).

Use this option to return with an error when the operation being executed on the admin server does not complete its execution after the expiration of the number of seconds specified in *value*.
Periodical export may not be able to start its process while the manager is executing a time-consuming operation such as L-Server creation. Specify this option to cancel the backup after the specified number of seconds has elapsed.

The following messages are output by the spacing for 600 seconds while it meets the operation.
INFO:Manager operation is still running

-file *resource_map_file*

Specify the XML file that describes the association of storage.

-tenant *tenant_name*

Specify the tenant name to filter.

-global

Specify to filter the resources shared with other tenants.

-type vm

Specify to filter the resources related to the virtual L-Server.

-exclude vm

Specify to filter the resources other than those related to the virtual L-Server.

-exclude *type*

Specify the resource type to be filtered. The following types can be selected.

- lserver

- lplatform

-name *name*

Specify the name of the resource to be filtered or whose details are to be displayed.

-convert

The information that links a configured physical server with an L-Server will be created in *outdir*.

-indir *indir*

Specify the directory to store the configuration information of the filtering target.

-outdir *outdir*

Specify the directory in which to store the configuration information that was filtered.

-alluser

Specify when the user information is also to be initialized when the definitions for this product are initialized in Disaster Recovery.

-type *type*

Specify the type of resource to display the details for. The following types can be selected.

- lserver

- network

-format xml

Specify xml for the format when the details are to be displayed.

Example

convert.txt

```
[command]
rcxadm lserver convert -with BX900_1 -name physical_lserver_1
rcxadm lserver convert -with BX900_3 -name physical_lserver_2 -to /tenant_1
rcxadm lserver convert -with BX900_6 -name physical_lserver_3 -label test_label3 -comment test_comment3 -to /folder_1
[user]
user_1, physical_lserver_1
user_1, /tenant_1/physical_lserver_2
user_2, /folder_1/physical_lserver_2
[usergroup]
usergroup_1, physical_lserver_1
usergroup_2, /folder_1/physical_lserver_3
```

1.7.12 rcxadm iscsictl

Name

[Windows]
Installation_folder**Manager\bin\rcxadm iscsictl** - operation of iSCSI boot information

[Linux]
/opt/FJSVrcvmr/bin/rcxadm iscsictl - operation of iSCSI boot information

Format

```
rcxadm iscsictl register -file file.xml
rcxadm iscsictl unregister -pool pool -disk disk
```

Description

rcxadm iscsictl is the command to operate iSCSI boot information.

Subcommands

register

Registers iSCSI boot information.

If iSCSI boot information already registered is specified, the registered information continues to exist.

If the registered information is changed, delete the iSCSI boot information using the unregister subcommand, and then register the iSCSI boot information by using the register subcommand again.

When registering an iSCSI boot disk in a storage pool, it is recommended that the same allocation method used for physical storage resources corresponding to the iSCSI boot disk (thin provisioning or thick provisioning), is used.
This setting does not affect the allocation methods which are set for the storage resource attribute in a storage pool.

unregister

Unregisters iSCSI boot information.

Options

-file *file*.xml

In *file*.xml, specify the XML file that defines the iSCSI boot information.

For details on the XML file definition, refer to "2.4.2 iSCSI Boot Information".

-pool *pool*

Specify the target resource pool name by level.

> *Resource_folder_name/Resource_pool_name*

-disk *disk*

Specify the disk resource to delete.

 Note
. . . .
When deleting disk resources used for iSCSI boot that have been unregistered from a resource pool, register the disk resource to a resource pool, then execute the rcxadm iscsictl unregister command to delete it.
. . . .

1.7.13 rcxstorage

Name

[Windows]
Installation_folder**Manager\bin\rcxstorage** - Switchover script for operating or standby storage, or creation of disk resource comparison tables for Disaster Recovery

[Linux]
/opt/FJSVrcvmr/bin/rcxstorage - Switchover script for operating or standby storage, or creation of disk resource comparison tables for Disaster Recovery

Format

```
rcxstorage [-failover|-failback] -storageunit unit_name -file file -outfile outfile
rcxstorage -recovery -mode [prepare|mapping] -file file -outfile outfile
```

Description

rcxstorage -failover|-failback are the commands to create scripts for switching storage between the operating and standby states, and to create scripts for power operations for physical L-Servers.

rcxstorage -recovery is the command to create a disk resource comparison table for Disaster Recovery.

Options

-failover|-failback

- Use the -failover option to create the following scripts:

  - A script for switching from operating to standby (failover script)

  - A script for stopping a target physical L-Server

  - A script for starting a target physical L-Server

- Use the -failback option to create the following scripts:

  - A script for switching from standby to operating (failback script)

  - A script for stopping a target physical L-Server

  - A script for starting a target physical L-Server

-recovery

When specified with -mode, the Disaster recovery function is executed.

-storageunit *unit_name*

Specify the operating storage units.

- When the storage unit is ETERNUS or EMC CLARiiON

  Specify the IP address of the storage unit for *unit_name*.

- When the storage unit is EMC Symmetrix DMX or EMC Symmetrix VMAX

  Specify the SymmID of the storage unit for *unit_name*.

-mode [prepare|mapping]

Use the prepare option to extract the disk resource information from the configuration information of the manager of the operating storage.

Use the mapping option to create a comparison table for the disk resource, comparing the configuration information of the operating and standby storage.

-file *file*

- For -failover or -failback

  Specify the replication definition file using a full pathname.

- For -mode prepare

  Specify the replication definition file using a full pathname.

- For -mode mapping

  Specify the file for the configuration information of the operating storage using its full path.

-outfile *outfile*

- For -failover

  Specify the full pathname of the failover script file.

- For -failback

  Specify the full pathname of the failback script file.

- For -mode prepare

  Specify the full path name of the file for the configuration information of the operating storage.

- For -mode mapping

  Specify the full path name for the disk resource comparison table.

For the file name of a failover or a failback script, the file name specified for *outfile* is used. The script for stopping physical L-Servers is created with a file name composed of the file name specified in *outfile* (the extension is omitted), followed by the string "_power_off". The script for stopping physical L-Servers is created with a file name composed of the file name specified in *outfile* (the extension is omitted), followed by the string "_power_on".

🗓 Example

. . . .

- When C:\temp\command.bat is specified for *outfile*

Type of Script File	File Name of the Script Created
A failover or a failback script	C:\temp\command.bat
A script for stopping physical L-Servers	C:\temp\command_power_off.bat
A script for starting physical L-Servers	C:\temp\command_power_on.bat

. . . .

If there is already a file with the same name, the script cannot be created. Specify the name of the new file to create.

When operating this command in Windows environments, the script file to be output is a batch file, in Linux environments it is a shell script. When specifying the name of a script file, reflect the extensions of batch files and shell scripts.

1.7.14 rcxrepdef

Name

[Windows]
Installation_folder**Manager\bin\rcxrepdef** - Generate replication definition file

[Linux]
/opt/FJSVrcvmr/bin/rcxrepdef - Generate replication definition file

Format

```
rcxrepdef ccm [-local storage_ip [-remote storage_ip [=box_id]]] -file replication_file
```

Description

The rcxrepdef command creates a replication definition file from the configuration information for the replication software in the high-availability storage machine.

🗓 Note

. . . .

Before executing this command, the path to execute commands of the storage management software must be defined.
Specify the following folder in the path:

*ETERNUS_SF_Storage_Cruise_Installation_folder*CM\bin

. . . .

Subcommands

Specify the replication software. Specify the following values.

ccm : ACM-CCM

Options

-local storage_ip

Enter the IP address of the source storage machine for replication. If this is omitted, the IP addressed obtained from replication software is used.

-remote storage_ip [=*box_id*]

Enter the IP address or box id of the source storage machine for replication. If this is omitted, the IP addressed obtained from replication software is used.

When replication is performed on multiple servers and the IP address cannot be recognized on the replication software, specify the BOX ID to uniquely determine the destination for replication.

-file replication_file

Specify the directory name where the replication definition file will be output.

Example

. . . .

To display the detailed information for an L-Server:

```
>rcxrepdef ccm -file file1<RETURN>
```

. . . .

1.7.15 rcxadm logctl

This section explains the command for operation logs of Resource Orchestrator.

Name

[Windows]
Installation_folder**Manager\bin\rcxadm logctl** - operation of operation logs of Resource Orchestrator

[Linux]
/opt/FJSVrcvmr/bin/rcxadm logctl - operation of operation logs of Resource Orchestrator

Format

```
rcxadm logctl start
rcxadm logctl stop
rcxadm logctl set -attr record_cycle=record_cycle
rcxadm logctl show
rcxadm logctl delete -from from_date {-duration duration | {-to to_date |-latest}}
rcxadm logctl delete -duration duration {-from from_date | {-to to_date |-latest}}
rcxadm logctl list -from from_date {-duration duration | {-to to_date |-latest}} [-format csv] [-
no_header]
```

```
rcxadm logctl list -duration duration {-from from_date | {-to to_date |-latest}} [-format csv] [-
no_header]
```

Description

rcxadm logctl is the command for operating operation logs of Resource Orchestrator.

Subcommands

start

  Starts recording operation logs of Resource Orchestrator.

stop

  Stops recording operation logs of Resource Orchestrator.

set

  Sets and modifies the retention period of operation logs of Resource Orchestrator.

show

  Displays the recording start date, retention period, retention folder, recording status (on/off), and the recording period.

Table 1.83 Information for Recorded Items

Items	Description
start_date	Start of recording (YYYY-MM-DD HH:MM:SS.XXX+/-hh:mm) A hyphen ("-") is set when the recording is stopped.
record_cycle	Retention period If the setting is not changed, "180" is set.
record_dir	Retention folder Operation logs are saved in the following folder: [Windows] *Installation_folder***Manager\var\operation** [Linux] /var/opt/FJSVrcvmr/operation/
record_status	Status of recording "off" is set when the recording is stopped.
record_count	Number of days to record Days when no events occur, and days when recording is not possible due to the manager being stopped are not counted as dates for recording.

delete

  Deletes operation logs of Resource Orchestrator.

list

  Displays operation logs of Resource Orchestrator.

Options

-attr record_cycle=*record_cycle*

  Specify the number of days to store operation logs. If omitted, "180" is set.

Up to "2147483647" days can be specified.

-format csv

Use this option to output operation logs in CSV format.

Standard output is used for the operation log.

-no_header

Use this option not to output the information headers (Date, User, Group, IP, Progress, Resource, and Event).

-duration *duration*

Specify the data output duration.

Specification formats are shown below.

- *years*Y

- *months*M

- *weeks*W

- *days*D

- *hours*H

🗒 Example
. . . .

```
-duration 3Y
-duration 4M
```

. . . .

Specify an integer equal to or greater than "1" for *years*, *months*, *weeks*, *days*, and *hours*.

🅿 Point
. . . .

When combined with -from, data for the specified duration is output from the start time using from.

When combined with -to, data for the specified duration is output to the end time using to.
. . . .

-from *from_date*

Specify the start time of the output duration. Specify the local time.

Specification formats are shown below.

- YYYY-MM-DD

- YYYY-MM-DD HH:MM

- YYYY-MM-DD HH:MM:SS

The specifiable ranges are shown below.

- YYYY: 1970 to 2038

- MM: 1 to 12

- DD: 1 to 31

- HH: 0 to 23

- MM: 0 to 59

- SS: 0 to 60 (When "60" is specified, time will be increased by 1 minute.)

  In the following cases, 1 day will be increased.

Table 1.84 Increment of Days

MMDD Values Specified	Dates Incremented
0431	0501
0631	0701
0931	1001
1131	1201
0229 (Other than leap year) 0230 (Leap year)	0301
0230 (Other than leap year) 0231 (Leap year)	0302
0231 (Other than leap year)	0303

P Point

. . . .

When -to, -duration, and -latest are combined, data from the specified time is output. In this case, the specified time is included.

. . . .

-to *to_date*

Specify the end time of the output duration. Specify the local time.

-latest cannot be used at the same time.

Specification formats are shown below.

- YYYY-MM-DD

- YYYY-MM-DD HH:MM

- YYYY-MM-DD HH:MM:SS

For details of the specifiable ranges for YYYY, MM, DD, HH, MM, SS, refer to "Table 1.84 Increment of Days".

P Point

. . . .

When -from and -duration are combined, data is output until the specified time. In this case, the specified time is excluded.

. . . .

-latest

The end time of the data output duration is regarded as the current time. Specify when outputting of the latest data.

-to cannot be used at the same time.

P Point

. . . .

When combined with -from or -duration, the data for the latest specified duration will be output.

. . . .

1.7.16 rcxadm nicdefctl

Name

[Windows]
Installation_folder**Manager\bin\rcxadm nicdefctl** - server NIC definition operations

[Linux]
/opt/FJSVrcvmr/bin/rcxadm nicdefctl - server NIC definition operations

Format

```
rcxadm nicdefctl commit [-nowait]
rcxadm nicdefctl list
rcxadm nicdefctl show -name name [-format {text|xml}]
```

Description

rcxadm nicdefctl is the command used to operate server NIC definitions.

Subcommands

commit

> Reflects server NIC definitions on the manager.
>
> To use the server NIC definition from the network resource, specify the physical LAN segment name defined in the server NIC definition as the physical LAN segment name of the network resource.
>
> Refer to "2.5.1 Creation" for details.

list

> Displays a list of server NIC definitions managed by the manager.
>
> The following detailed information is displayed:

Table 1.85 Server NIC Definition Information

Item Name	Description
NAME	Server NIC definition name

show

> Displays the detailed information for server NIC definitions managed by the manager.
>
> The following detailed information is displayed:

Table 1.86 Detailed Information for Server NIC Definitions

Item Name	Description
NIC_INDEX [num1][num2]	Index number of NIC

NIC_REDUNDANT [num1][num2]	Operation type
	
	One of the following is displayed:
	
	- For active status
	
	  "Active" is displayed.
	
	- For standby status
	
	  "Standby" is displayed.
	
	If a single configuration is defined in the server NIC definition, this item will not be displayed.

PHYSICAL_LAN_SEGMENT_NAME [num1][num2]	Physical LAN Segment Name

In *num1*, the management number of a NIC definition group is displayed. The number is an integer starting from "0".
In *num2*, the index number within a NIC definition group is displayed. The number is an integer starting from "0".

Options

-format text|xml

Specify the display format.
When -format is omitted, it is displayed in text format.

text

The information is displayed in text format.

xml

The information is displayed in XML format with XML tags.

-name name

In *name*, specify the name of the target server NIC definition.

-nowait

Use this option to return directly to the command prompt without waiting for the operation of the server NIC definition specified in the subcommand to complete its execution.

Examples

- To display a list of server NIC definition information:

```
>rcxadm nicdefctl list <RETURN>
NAME
--------------------
bx400_d2952
bx900_d2860
```

- To display the detailed information for server NIC definition information:

```
>rcxadm nicdefctl show -name bx900s1_d2860 <RETURN>
nic_index[0][0]: 3
nic_redundant[0][0]: Active
nic_index[0][1]: 4
nic_redundant[0][1]: Standby
physical_lan_segment_name[0][0]: ServiceB
nic_index[1][0]: 5
physical_lan_segment_name[1][0]: ServiceC
physical_lan_segment_name[1][1]: ServiceE
nic_index[2][0]: 6
nic_redundant[2][0]: Active
nic_index[2][1]: 7
nic_redundant[2][1]: Active
physical_lan_segment_name[2][0]: Management
```

1.7.17 rcxmgrctl

Name

[Windows]
Installation_folder**Manager\bin\rcxmgrctl** - Starting or stopping the manager

[Linux]
/opt/FJSVrcvmr/bin/rcxmgrctl - Starting or stopping the manager

Format

```
rcxmgrctl start
rcxmgrctl stop
```

Description

rcxmgrctl is the command used to start or stop the manager.

Subcommands

start

    Starts the Manager.

stop

    Stops the Manager.

Options

There are no options.

Exit Status

This command returns the following values:

0

    The command executed successfully.

non-zero

    An error has occurred.

1.7.18 rcxadm dbctl

rcxadm dbctl is an existing ROR VE command.

For details, refer to "5.3 rcxadm dbctl" of the "Command Reference".

1.7.19 rcxadm license

rcxadm license is an existing ROR VE command.

For details, refer to "5.11 rcxadm license" of the "Command Reference".

1.7.20 rcxvmdiskagt

Name

[KVM]
/opt/FJSVrcxat/bin/rcxvmdiskagt - Output of the raw device or partition information recognized by a VM host

Format

```
rcxvmdiskagt -ip IP_address_of _admin_LAN_for_the_VM_host
```

Description

rcxvmdiskagt is the command that outputs the raw device or partition information recognized by a VM host to the standard output in XML format.

The following detailed information is displayed:

Table 1.87 Information of the Raw Device or Partition Recognized by a VM Host

Element Name/Attribute Name	Description
VmHost/ip	The admin LAN IP address for the VM host
Disk/path	Absolute path to the raw device or partition recognized by the VM host
Disk/size	The capacity of the raw device or partition recognized by the VM host (unit: GB)

Options

-ip *ipaddress*

> Specify the IP address of the admin LAN for the VM host.

Examples

```
>rcxvmdiskagt -ip 192.168.23.153 <RETURN>
<?xml version="1.0" encoding="utf-8"?>
<VmHost ip="192.168.23.153">
<Disks>
<Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d0000000001321300010000" size="10.0"/>
<Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d0000000001321300020000" size="10.0"/>
<Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d0000000001321300030000" size="10.0"/>
<Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d0000000001321300040000" size="10.0"/>
<Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d0000000001321300050000" size="10.0"/>
</Disks>
</VmHost>
```

🔰 **Note**

....

- This command should be performed using a user account with administrative privileges within the operating system.

- This command is included in the agents that operate on Red Hat(R) Enterprise Linux(R) 6 (for Intel64).

- The information output by this command will be the input information for the rcxvmdisk command. Therefore, the output information must be saved as a file.

- The rcxvmdisk command is included in the manager. Therefore, move the files that store the output information of this command to the server where the manager is running.

- Although there are no limitations on the name of the files that store the output information of this command, when there are multiple KVM VM hosts, users are recommended to use file names that do not overlap with the file names used on the other VM hosts. In addition, those files must have the extension "xml".

- Delete the following from the output information:

    - raw devices or partition not used by the VM guests

    - raw devices or partition not to be used nor mounted on the VM host

    - LVM disks

- Delete the information on the raw devices or partition already registered with the manager as disk resources for virtual L-Servers. However, this does not apply when changing registered information using the rcxadm disk modify command.

⸺⸺

Information

Information of raw devices or partition is output to the Disk element. It is output when all of the following conditions are met:

- The device is a SCSI disk (a disk beginning with "scsi-" in /dev/disk/by-id/)

- The device has not been mounted on the VM host at the time when this command is executed (except disks or partitions that have been mounted as /dev/sd* referring to the /etc/mtab information)

For partitioned disks, the information for each partition is output.

When there is no raw device or partition that meets the above conditions, the elements other than the Disk element are output.

⸺⸺

1.7.21 rcxvmdisk

Name

[Windows]
Installation_folder**Manager\\bin\\rcxvmdisk** - Output of disk resource configuration information (partial) for virtual L-Servers

[Linux]
/opt/FJSVrcvmr/bin/rcxvmdisk - Output of disk resource configuration information (partial) for virtual L-Servers

Format

```
rcxvmdisk -dir
The_name_of_the_directory_that_stores_the_information_output_by_the_rcxvmdiskagt_command
```

Description

rcxvmdisk is the command that outputs a part of disk resource configuration information for virtual L-Servers to the standard output in XML format.

The following detailed information is displayed:

Table 1.88 Disk Resource Configuration Information for Virtual L-Servers (Partial)

Element Name/Attribute Name	Description
VmHost/ip	The admin LAN IP address for the VM host
Disk/path	Absolute path to the raw device or partition recognized by the VM host
Disk/size	The capacity of the raw device or partition recognized by the VM host (unit: GB)

By saving the output information in a file and making the following changes to the file, the file can be specified for the -file option of the rcxadm disk register command, etc.

- For the *name* attribute of the Pool element, describe the name of the storage pool to register disk resources for virtual L-Servers to.

- For the *name* attribute of the Disk element, describe the disk resource name.

  For the disk resource name, enter a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

  For the raw device or partition connected so that it can be shared between VM hosts, specify the same disk resource name on the VM hosts.

Options

-dir *directory*

For *dir*, specify the name of the directory for storing output information of the rcxvmdiskagt command executed on each VM host.

📒 **Note**
. . . .

- Create the directory to specify for the -dir option in advance. It is necessary to use this directory to store the information output when the rcxvmdiskagt command is executed on each VM host. In addition, those files must have the extension "xml".

  Files with extensions other than "xml" in that directory are ignored.

  Only files with the extension "xml" are treated as operation targets.when the extension is "xml", and do not execute the following,

  - Store files other than those containing the information output by the rcxvmdiskagt command in that directory.

  - Redirect the standard output of this command to the directory specified in the -dir option.

- The directory specified for the -dir option can be specified using an absolute path or a relative path.

- When there is no file containing the information output by the rcxvmdiskagt command in the directory specified for the -dir option, the elements other than the VmHost element and its child elements are output.

. . . .

Examples

- When there are two VM hosts

```
>rcxvmdisk -dir DirectoryName <RETURN>
<?xml version="1.0" encoding="utf-8"?>
<Storage>
  <Pool name="*"/>
  <VmHosts>
    <VmHost ip="192.168.23.153">
      <Disks>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300010000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300020000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300030000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300040000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300050000"
size="10.0"/>
      </Disks>
    </VmHost>
    <VmHost ip="192.168.23.154">
      <Disks>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300010000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300020000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300030000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300040000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000000001321300050000"
size="10.0"/>
      </Disks>
    </VmHost>
```

```
    </VmHosts>
</Storage>
```

Note

- This command should be performed using a user account with administrative privileges within the operating system.

- The information output by this command will be the input information for the rcxadm disk register command and the rcxadm disk modify command. Therefore, the output information must be saved as a file.

- There are no limitations on the names of the files that store the output information of this command, except that the file extension must be "xml".

1.8 Backup and Restoration Operations for Configuration Definition Information

This section explains the commands for backing up and restoring configuration definition information of Resource Orchestrator.

1.8.1 rcxbackup

Name

[Windows]
Installation_folder**Manager\bin\rcxbackup** - backup of configuration definition information

[Linux]
/opt/FJSVrcvmr/bin/rcxbackup - backup of configuration definition information

Format

```
rcxbackup [-dir directory] [[-immediate]|[-timeout value]]
```

Description

rcxbackup is the command used for backup of the configuration definition information of Resource Orchestrator.

Back up configuration definition information of Resource Orchestrator using this command for restoration when the configuration definition information has been damaged.

Configuration definition information cannot be backed up while resource operations, such as those involving L-Servers, resource pools, or resource folders, are being performed.
Backup of configuration definition information can only be performed when no operation is being executed for the resources.

- When executing the command while the manager is running

  Backup will be performed after completing the operations.

- When executing the command while the manager is stopped

  This command will be returned without waiting for the completion of operations being executed, regardless of the presence or absence of the specified options.

Options

-dir *directory*

  In *directory*, specify a directory to back up the configuration definition information of Resource Orchestrator.

When omitting the directory specification, or the destination is defined in the following definition file, the backup is saved in the specified directory.

If the directory specification is omitted in the definition file, the backup is saved in the following directory:

Storage Location of Definition Files

[Windows]
Installation_folder**Manager\etc\customize_data\manager_backup.rcxprop**

[Linux]
/var/opt/FJSVrcrmr/customize_data/manager_backup.rcxprop

Storage Location of Backup Files

[Windows]
Installation_folder**Manager\var\backup**

[Linux]
/var/opt/FJSVrcxmr/backup

-immediate

Use this option to return directly to the command prompt without waiting for the operation being executed on the admin server to complete its execution.

Backup of configuration definition information can only be performed when no operation is being executed for the resources. If an operation is being executed, this command will return an error.

-timeout *value*

Use this option to wait the number of seconds specified in *value* for completion of the operation being performed on the admin server. If the operation is not completed within the specified time, this command will return an error.

If this option is omitted, the default value (3600 seconds) is set.

Use this option to return with an error when the operation being executed on the admin server does not complete its execution after the expiration of the number of seconds specified in *value*.

Periodical backup may not be able to start its process while the manager is performing operations using the configuration definition information such as L-Server creation. Specify this option to cancel the backup after the specified number of seconds has elapsed.

If this command is executed when the manager has been stopped, the specification of this option will be ignored.

Examples

> **rcxbackup -dir /dir0 -immediate** <RETURN>

Exit Status

This command returns the following statuses:

0

The command executed successfully.

non-zero

An error has occurred.

🛑 Note

. . . .

- Specify the command using an absolute path.

- When specifying folders or directories, take note of the following points.

  - Do not specify the system installation folder or the installation directory for the -dir option.

- Do not use double-byte characters or the following symbols to specify folders or directories for the -dir option.

  """, "|", "*", "?", "<", ">", ",", "%", "&", "^", "=", "!", ";"

  [Windows]
  "/"

  [Linux]
  "\"

- The folder path or directory path can be specified up to 100 characters.

- For the -timeout option, "172800" or less seconds can be specified.

- Do not stop or start the manager during execution of this command.

- If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -dir option. If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff. Delete these folders or directories when they are no longer necessary.

- Do not execute this command while resource operations, such as those involving L-Servers, resource pools, or resource folders, are being performed.

- If the configuration definition information is being updated when the periodical backup operation starts, the backup operation will be postponed until the update is complete.

- When an operation is being executed on the admin server, "INFO: Manager operation is still running." is displayed periodically.

1.8.2 rcxrestore

Name

[Windows]
Installation_folder**Manager\bin\rcxrestore** - restoration of configuration definition information

[Linux]
/opt/FJSVrcvmr/bin/rcxrestore - restoration of configuration definition information

Format

```
rcxrestore -file filename
```

Description

rcxrestore is the command used for restoration of the configuration definition information of Resource Orchestrator.

Options

-file *filename*

In *filename*, specify the compressed format file name of the backup collected using the rcxbackup command.

Examples

>**rcxrestore -file mgr_20110123_1159.bz2** <RETURN>

Exit Status

This command returns the following statuses:

0

    The command executed successfully.

non-zero

    An error has occurred.

📖 Note
....

- Specify the command using an absolute path.

- When specifying files, take note of the following points.

    - Do not use double-byte characters or the following symbols to specify files for the -file option.

      """, "|", "*", "?", "<", ">", ",", "%", "&", "^", "=", "!", ";"

      [Windows]
      "/"

      [Linux]
      "\"

    - The file path can be specified up to 100 characters.

    - During restoration, the certificates, configuration definition information, OS property definition files, system images and cloning images must have been backed up at the same point in time. It is recommended to store the backed up information in folders with names including the date and time of backup.

- Do not stop or start the manager during execution of this command. If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -file option. If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff. Delete these folders or directories when they are no longer necessary.

....

1.8.3 rcxlogtruncate

Name

[Windows]
Installation_folder**Manager\sys\lserver_repair\rcxlogtruncate** - Deletion of L-Server restoration logs

[Linux]
/opt/FJSVrcvmr/sys/lserver_repair/rcxlogtruncate - Deletion of L-Server restoration logs

Format

```
rcxlogtruncate -dir L-Server_restoration_log_storage_directory -date yyyymmdd_hhmm
```


Description

rcxlogtruncate is the command used to delete L-Server restoration logs.

Options

-dir *L-Server_restoration_log_storage_directory*

    Specify the directory to be used to store L-Server restoration logs.

-date *yyyymmdd_hhmm*

> Deletes L-Server restoration logs before the specified date and time (*yyyymmdd_hhmm*).

Examples

```
>rcxtruncate -dir dir1 -date 20110501_0000 <RETURN>
```

1.8.4 rcxreserveid

Name

[Windows]
Installation_folder**Manager\sys\lserver_repair\rcxreserveid** - Reservation of resource IDs

[Linux]
/opt/FJSVrcvmr/sys/lserver_repair/rcxreserveid - Reservation of resource IDs

Format

```
rcxreserveid -logdir L-Server_restoration_log_destination_directory
```

Description

rcxreserveid is the command used to reserve resource IDs during restoration of the manager.

Executing this command prevents the overlapping of resource IDs before and after a manager failure.

Options

-logdir *L-Server_restoration_log_storage_directory*

> Specify the directory to be used to store L-Server restoration logs.

Examples

```
>rcxreserveid -logdir dir1 <RETURN>
```

Exit Status

This command returns the following statuses:

0

> The command executed successfully.

non-zero

> An error has occurred.

 Note

. . . .

After restoring the manager, if starting the manager before executing this command, perform these operations again from restoration of the manager.

. . . .

1.8.5 rcxchkmismatch

Name

[Windows]
Installation_folder**Manager\sys\lserver_repair\rcxchkmismatch** - Deletion of resource folders and L-Servers

[Linux]
/opt/FJSVrcvmr/sys/lserver_repair/rcxchkmismatch - Deletion of resource folders and L-Servers

Format

```
rcxchkmismatch {-logdir L-Server_restoration_log_storage_directory | -diff} [-allow del]
```

Description

rcxchkmismatch is the command to perform the following operations after the manager is backed up:

- Checking resources which have been deleted or for which configuration changes have been made

- Deleting the information of resources which have been deleted from the configuration definition information

- Reflecting the information of resources for which configuration changes have been made, on the configuration definition information

Options

-logdir *L-Server_restoration_log_storage_directory*

Specify the directory where L-Server restoration logs are stored.

-diff

Use this option if L-Server restoration logs are damaged or not recorded. This option compares information between regular update information of VM management software and configuration definition information, and then displays the differences between them.

-allow del

Deletes the difference information between L-Server restoration logs and configuration definition information, or between VM management software and configuration definition information.

Examples

```
>rcxchkmismatch -logdir L-
Server_restoration_log_destination_directory <RETURN>
mismatch:
/Resource_folder_name/L-Server_name_1
/L-Server_name_2
...
spec mismatch:
/Resource_folder_name_2/L-Server_name_3
/L-Server_name_4
...
```

```
>rcxchkmismatch -logdir L-Server_restoration_log -allow del <RETURN>
mismatch and deleted:
/Resource_folder_name/L-Server_name_1
/L-Server_name_2
...
```

1.8.6 rcxrepair

Name

[Windows]
Installation_folder**Manager\sys\lserver_repair\rcxrepair** - Checking configuration definition information to restore

[Linux]
/opt/FJSVrcvmr/sys/lserver_repair/rcxrepair - Checking configuration definition information to restore

Format

```
rcxrepair -logdir L-Server_restoration_log_storage_directory [-dir
Output_destination_of_resource_definition_information | -dryrun]
```

Description

rcxrepair compares information between L-Server restoration logs and configuration definition information to identify the information requiring restoration.
rcxrepair is the command used to create an import file for restoring configuration definition information.

Options

-logdir *L-Server_restoration_log_storage_directory*

Specify the directory to be used to store L-Server restoration logs.

-dir *Output_destination_of_resource_definition_information*

Specify the destination for resource information of configuration definition information to restore.

When there is configuration definition information to be restored using the -dryrun option, use this option to create resource information.

-dryrun

Checks the contents of configuration definition information to restore. When restoration is unnecessary, it is output as such.

🔔 Note
. . . .
When using the -dryrun option, a temporary folder named rcxrepair_tmp is created in the folder specified when executing the command. Therefore, specify a writable folder when executing the command.

Even if the command is forcibly terminated, the rcxrepair_tmp folder may be created. In that case, delete the rcxrepair_tmp folder.
. . . .

Examples

```
>rcxrepair -logdir L-Server_restoration_log -dryrun <RETURN>
folder create: /folder1
lserver create: /folder1/l-server1
lserver create: /folder1/l-server2
>rcxrepair -logdir L-Server_restoration_log_storage_directory [-dir
Output_destination_of_resource_definition_information <RETURN>
```

1.8.7 scwbackup

Name

[Windows]
Installation_folder**Manager\bin\scwbackup** - backup of image file information

[Linux]
/opt/FJSVrcvmr/bin/scwbackup - backup of image file information

Format

```
scwbackup [-dir directory] [[-immediate]|[-timeout value]]
```

Description

scwbackup is the command used for backing up the image file information of Resource Orchestrator.

This command backs up the following image file information of Resource Orchestrator using this command for restoration in case ServerView Deployment Manager information is damaged:

- System Images and Cloning Images

  All files in the folders or directories are targeted.

  Table 1.89 List of Items for Backup/Restore [Windows]

No	Overview	Item
1	System images	*Image file storage folder*\Managed server name@0@0@Management information@Management information@Version
2	Cloning images	*Image file storage folder*\Cloning image name@Version

  Image_file_storage_folder is *The_value_of_imagedir_displayed_by_executing_the_rcxadm imagemgr_info_command*\Cloneimg.

  Table 1.90 List of Items for Backup/Restore [Linux]

No	Overview	Item
1	System images	*Image_file_storage_directory*/Managed server name@0@0@Management information@Management information@Version
2	Cloning images	*Image_file_storage_directory*/Cloning image name@Version

  Image_file_storage_directory is *The_value_of_imagedir_displayed_by_executing_the_rcxadm imagemgr_info_command*/CLONEIMG.

- Image file related information

  Table 1.91 List of Items for Backup/Restore [Windows]

No	Overview	Item
1	Registry	- For 32-bit operating systems HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\SystemcastWizard - For 64-bit operating systems (*1) HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard
2	Database	*Installation_folder*\ScwPro\scwdb\scwdb1.mdb *Installation_folder*\ScwPro\scwdb\scwdb1.mdw
3	DHCP configuration information file	*Installation_folder*\ScwPro\bin\ipTable.dat
4	IP address configuration file	*Installation_folder*\ScwPro\bin\localipaddress.txt

No	Overview	Item
5	AWWN definition file (*2)	*Installation_folder*\ScwPro\tftp\rcbootimg\awwn_*IP_address*.cfg
		Installation_folder\ScwPro\tftp\rcbootimg_awwn_*IP_address*.cfg
6	BROADCAST configuration file for client connection requests	*Installation_folder*\ScwPro\bin\bcastaddress.txt

*1: For 64-bit operating systems, it is redirected to Wow6432Node.
*2: In VIOM environments, this file does not exist.

Table 1.92 List of Items for Backup/Restore [Linux]

No	Overview	Item
1	Configuration file	/etc/opt/FJSVscw-common/scwconf.reg
2	Database	/var/opt/FJSVscw-deploysv/scwdb/scwdb1.db
		/var/opt/FJSVscw-deploysv/scwdb/scwdb2.db
3	DHCP configuration information file	/var/opt/FJSVscw-pxesv/ipTable.dat
4	bootcfg configuration file (*1)	/etc/opt/FJSVscw-pxesv/ClientBoot/*
5	AWWN definition file (*2)	/var/opt/FJSVscw-tftpsv/tftproot/rcbootimg/awwn_*IP_address*.cfg
		/var/opt/FJSVscw-tftpsv/tftproot/rcbootimg/_awwn_*IP_address*.cfg
6	BROADCAST configuration file for client connection requests	/opt/FJSVscw-deploysv/sys/bcastaddress.txt

*1: All files in the specified directory are targeted.
*2: In VIOM environments, this file does not exist.

Image file information cannot be backed up while an image operation is being performed for a physical L-Server or a VM host.

Backup of image file information can only be performed when no operation is being executed for the resources.

When this command is executed while the manager is being operated, the backup process will be started after the operations being performed by the manager have been completed.

When this command is executed while the manager is being stopped, this command will be returned regardless of the presence or absence of the specified options. Completion of operations being executed will not be waited for.

Options

-dir *directory*

In *directory*, specify a folder or a directory to back up the image file information of Resource Orchestrator.

If previous backup information remains in the specified folder or directory, the information is diverted to the backup operation for system images and cloning images.

When this option is omitted, if the destination is defined in the following definition file, the information is saved in the specified folder or directory:

[Windows]
Installation_folder\Manager\etc\customize_data\manager_backup.rcxprop

[Linux]
/var/opt/FJSVrcrmr/ customize_data/manager_backup.rcxprop

If the destination is not defined, the information is saved in the following folder or directory:

[Windows]
Installation_folder\Manager\var\backup

[Linux]
/var/opt/FJSVrcrmr/backup

-immediate

Use this option to return directly to the command prompt without waiting for the operation being executed on the admin server to complete its execution.

Backup can only be performed when no operation is being executed for the resources. If an operation is being executed, this command will return an error.

-timeout *value*

Use this option to wait the number of seconds specified in *value* for completion of the image operation being performed on the admin server. If the operation is not completed within the specified time, this command will return an error.

For the -timeout option, "172800" or less seconds can be specified.

If this option is omitted, the default value (3600 seconds) is set.

When this command is periodically executed while the manager is operating, if heavy operations such as cloning image collection are ongoing, execution of the command will be delayed until the relevant operation is completed. Specify this option to terminate execution of the command within a fixed time.

When an operation is being executed on the admin server, "INFO: Manager operation is still running." is displayed periodically.

If this command is executed when the manager has been stopped, the specification of this option will be ignored.

Examples

```
>scwbackup -dir /scwdir0 -immediate <RETURN>
```

Exit Status

This command returns the following statuses:

0

The command executed successfully.

non-zero

An error has occurred.

🔔 **Note**

. . . .

- When specifying folders or directories, take note of the following points:

    - Do not specify the system installation folder or the installation directory for the -dir option.

    - Do not use double-byte characters or the following symbols to specify folders or directories for the -dir option.

      """, "|", "*", "?", "<", ">", ",", "%", "&", "^", "=", "!", ";"

      [Windows]
      "/"

      [Linux]
      "\"

- The folder path or directory path can be specified up to 100 characters.

- During restoration, the certificates, configuration definition information, OS property definition files, system images and cloning images must have been backed up at the same point in time. It is recommended to store the backed up information in folders with names including the date and time of backup.

- Do not stop or start the manager during execution of this command.

- If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -dir option.
If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff.
Delete these folders or directories after collecting the troubleshooting data.

··

1.8.8 scwrestore

Name

[Windows]
Installation_folder**Manager\bin\scwrestore** - restoration of image file information

[Linux]
/opt/FJSVrcvmr/bin/scwrestore - restoration of image file information

Format

```
scwrestore -dir directory
```

Description

scwrestore is the command used for restoration of image file information of Resource Orchestrator.

Options

-dir *directory*

In *directory*, specify a directory name created as a result of collection using the backup command.

Examples

>**scwrestore -dir** */scwdir0/mgr_20110123_1159*<RETURN>

Exit Status

This command returns the following statuses:

0

The command executed successfully.

non-zero

An error has occurred.

> 📝 **Note**
> ....
>
> - When specifying files, take note of the following points:
>
>   - Do not use double-byte characters or the following symbols to specify folders or directories for the -dir option.
>
>   """, "|", "*", "?", "<", ">", ",", "%", "&", "^", "=", "!", ";"
>
>   [Windows]
>   "/"
>
>   [Linux]
>   "\"
>
>   - The folder path or directory path can be specified up to 100 characters.
>
> - Do not stop or start the manager during execution of this command.
>
> - If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -dir option.
>   If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff.
>   Delete these folders or directories after collecting the troubleshooting data.
> ....

1.8.9 rcxkeydefbackup

Name

[Windows]
Installation_folder**Manager\bin\rcxkeydefbackup** - backup of other definition and management information

[Linux]
/opt/FJSVrcvmr/bin/rcxkeydefbackup - backup of other definition and management information

Format

```
rcxkeydefbackup [-dir directory] [[-immediate]|[-timeout value]]
```

Description

rcxkeydefbackup is the command used for backup of the other definition and management information of Resource Orchestrator.

Back up the following other definition and management information of Resource Orchestrator using this command for restoration in case the information is damaged.

Table 1.93 List of Items for Backup/Restore [Windows]

No	Overview	Item
1	Certificates	*Installation_folder*\Manager\etc\opt\FJSVssmgr\current\certificate (*1)
		Installation_folder\Manager\etc\opt\FJSVrcxdm\certificate (*1)
		Installation_folder\Manager\sys\apache\conf\ssl.crt
		Installation_folder\Manager\sys\apache\conf\ssl.key
2	Session encryption keys	*Installation_folder*\Manager\rails\config\rcx_secret.key
3	Definition files	*Installation_folder*\Manager\etc\customize_data (*1)
		Installation_folder\Manager\etc\vm (*1)
4	Image management information (*2)	The number of system image versions
		The number of cloning images versions

No	Overview	Item
		Image file storage folder

*1: All files in the specified directory are targeted.

*2: The values displayed using the rcxadm imagemgr info command are targeted.

Table 1.94 List of Items for Backup/Restore [Linux]

No	Overview	Item
1	Certificates	/etc/opt/FJSVrcvmr/opt/FJSVssmgr/current/certificate (*1)
		/etc/opt/FJSVrcvmr/sys/apache/conf/ssl.crt
		/etc/opt/FJSVrcvmr/sys/apache/conf/ssl.key
2	Session encryption keys	/opt/FJSVrcvmr/rails/config/rcx_secret.key
3	Definition files	/etc/opt/FJSVrcvmr/customize_data (*1)
		/etc/opt/FJSVrcvmr/vm (*1)
4	Image management information (*2)	The number of system image versions
		The number of cloning images versions
		Image file storage directory

*1: All files in the specified directory are targeted.

*2: The values displayed using the rcxadm imagemgr info command are targeted.

Other definition and management information cannot be backed up while resource operations, such as those involving L-Servers, resource pools, or resource folders, are being performed. Backup of other definitions and management information can only be performed when no operation is being executed for the resources.

When this command is executed while the manager is being operated, the backup process will be started after the operations being performed by the manager have been completed.

When this command is executed while the manager is being stopped, this command will be returned regardless of the presence or absence of the specified options. Completion of operations being executed will not be waited for.

Options

-dir *directory*

In *directory*, specify a directory to back up other definition and management information of Resource Orchestrator.

When this option is omitted, if the destination is defined in the following definition file, the information is saved in the specified folder or directory:

[Windows]
Installation_folder\Manager\etc\customize_data\manager_backup.rcxprop

[Linux]
/var/opt/FJSVrcrmr/ customize_data/manager_backup.rcxprop

If the destination is not defined, the information is saved in the following folder or directory:

[Windows]
Installation_folder\Manager\var\backup

[Linux]
/var/opt/FJSVrcrmr/backup

-immediate

Use this option to return directly to the command prompt without waiting for the operation being executed on the admin server to complete its execution.

Backup can only be performed when no operation is being executed for the resources. If an operation is being executed, this command will return an error.

-timeout *value*

Use this option to wait the number of seconds specified in *value* for completion of the image operation being performed on the admin server. If the operation is not completed within the specified time, this command will return an error.

If this option is omitted, the default value (3600 seconds) is set.

When this command is periodically executed while the manager is operating, if heavy operations such as L-Server creation are ongoing, execution of the command will be delayed until the relevant operation is completed. Specify this option to terminate execution of the command within a fixed time.

When an operation is being executed on the admin server, "INFO: Manager operation is still running." is displayed periodically.

If this command is executed when the manager has been stopped, the specification of this option will be ignored.

Examples

> **rcxkeydefbackup -dir /dir1 -immediate** <RETURN>

Exit Status

This command returns the following statuses:

0

The command executed successfully.

non-zero

An error has occurred.

Note

- When specifying folders or directories, take note of the following points:

    - Do not specify the system installation folder or the installation directory for the -dir option.

    - Do not use double-byte characters or the following symbols to specify folders or directories for the -dir option.

        """, "|", "*", "?", "<", ">", ",", "%", "&", "^", "=", "!", ";"

        [Windows]
        "/"

        [Linux]
        "\"

    - The folder path or directory path can be specified using up to 100 characters.

    - During restoration, the certificates, configuration definition information, OS property definition files, system images and cloning images must have been backed up at the same point in time. It is recommended to store the backed up information in folders with names including the date and time of backup.

    - For the -timeout option, 172,800 or less seconds can be specified.

  - Do not stop or start the manager during execution of this command.

  - If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -dir option.
    If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff. Delete these folders or directories after collecting the troubleshooting data.

1.8.10 rcxkeydefrestore

Name

[Windows]
Installation_folder**Manager\bin\rcxkeydefrestore** - restoration of other definition and management information

[Linux]
/opt/FJSVrcvmr/bin/rcxkeydefrestore - restoration of other definition and management information

Format

```
rcxkeydefrestore -file filename
```

Description

rcxkeydefrestore is the command used for the restoration of other definition and management information of Resource Orchestrator.

Options

-file *filename*

In *filename*, specify the compressed format file name of the backup collected using the rcxbackup command.

Examples

>**rcxkeydefrestore -file mgr_20110123_1159.bz2** <RETURN>

Exit Status

This command returns the following statuses:

0

The command executed successfully.

non-zero

An error has occurred.

🛈 Note

- When specifying files, take note of the following points:

    - Do not use double-byte characters or the following symbols to specify files for the -file option.

        """, "|", "*", "?", "<", ">", ",", "%", "&", "^", "=", "!", ";"

        [Windows]
        "/"

        [Linux]
        "\"

    - The file path can be specified using up to 100 characters.

- Do not stop or start the manager during execution of this command.

- If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -file option.

If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff.

Delete these folders or directories after collecting the troubleshooting data.

. . . .

1.8.11 rcxmgrbackup

Name

[Windows]
Installation_folder**SVROR\Manager\bin\rcxmgrbackup** - backup the Manager

[Linux]
/opt/FJSVrcvmr/bin/rcxmgrbackup - backup the Manager

Format

```
rcxmgrbackup -dir directory [-base] [-cleanup]
```

Description

rcxmgrbackup is the command that backs up the Manager of this product.

The service status is evaluated to determine whether the command is to implement an offline backup or an online backup.

If this command is executed in a state where only some services have been started, an error will occur.

When -base is specified, this command implements a base backup.

If -base is not specified, this command implements a differential backup. A differential backup will end abnormally when executed offline.

Options

-dir *directory*

In *dir*, specify the name of the directory that is to back up the Manager of this product.

-base

Specify this option to implement a base backup. Refer to "8.3 Online Backup of the Admin Server" in the "Operation Guide CE" for information on base backup.

-cleanup

When past backup data is deleted, it specifies it. Only the latest information of information gathered by the rcxmgrbackup command is retained when this option is specified, and all past information is deleted.

Examples

> **rcxmgrbackup -dir /dir0** <RETURN>

Exit Status

This command returns the following statuses:

0

The command executed successfully.

non-zero

An error has occurred.

Note

- When specifying folders or directories, take note of the following points.

    - Do not specify the system installation folder or the installation directory for the -dir option.

    - Do not specify the installation folder or installation directory of the system in the -dir option.

    - Use 28 characters or less for the path of the folder or directory being specified.

    - The folder path or directory path can be specified up to 28 characters.

    - Do not specify the following characters for the -dir option.

    [Windows]
    Slashes ("/")

    [Linux]
    Backslash("\")

- Do not stop or start the manager during execution of this command.

- If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -dir option. If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff. Delete these folders or directories when they are no longer necessary.

- Do not execute this command while resource operations, such as those involving L-Servers, resource pools, or resource folders, are being performed.

- If the configuration definition information is being updated when the periodical backup operation starts, the backup operation will be postponed until the update is complete.

- When an operation is being executed on the admin server, "INFO: Manager operation is still running." is displayed periodically.

Note

The backup command may not end normally at times, so do not perform the following operations:

- Forced end using Ctrl+C during execution of the backup command

- Stopping the database during execution of the backup command

If the operations listed above have been performed, the following action will be required, depending on the status:

- Execute the command shown below whenever the base backup command does not end normally.

    Refer to "ctmg_resetbackuperror (Reset Base Backup Error)" in the "Reference Guide CE" for information on the command.

    >*Installation_folder***RCXCTMG\bin\ctmg_resetbackuperror.bat** <RETURN>

    The processing result is output as standard output.
    The contents and meaning of the processing result are shown in the table below.

Processing Result	Return Value	Messages
The command executed successfully.	0	Successfully reset the base-backup error.
Error	non-zero	Failed to reset the base-backup error.

- After the database service is stopped, when starting of the database service fails, an error message will be output as follows to the log files of the target database:

    - Database log files

    >*Installation_folder***RCXCTMG\Charging\log\psql -nn.log**(*1) <RETURN>

*1:The "*nn*" part is a 2-digit number indicating the date on which the log was output.

- Error message

    Example: If the access control database failed to start

    ```
    LOG: could not open file "pg_xlog/xxxxxxxx" (log file 0, segment xx): No such file or
    directory (*2)
    LOG: invalid checkpoint record
    PANIC: could not locate required checkpoint record
    HINT: If you are not restoring from a backup, try removing the file
    "C:/Fujitsu/ROR/RCXCTMG/Charging/pgsql/data/backup_label".
    ```

    *2:The "xxxxxxxx" and "xx" parts of the log are undefined.

In a case like this, check whether the following file exists and, if so, delete the file.

>*Installation_folder***RCXCTMG\Charing\pgsql\data\backup_label** <RETURN>

1.8.12 rcxmgrrestore

Name

[Windows]
Installation_folder**SVROR\Manager\bin\rcxmgrrestore** - restore the Manager

[Linux]
/opt/FJSVrcvmr/bin/rcxmgrrestore - restore the Manager

Format

```
rcxmgrrestore -dir directory
```

Description

rcxmgrrestore is the command for restoring the Manager of this product.

If this command is executed in a state where services have been started, an error will occur.

Options

-dir *directory*

    In *directory*, specify the directory in which the backup data has been stored.

Examples

>**rcxrestore -dir /dir0** <RETURN>

Exit Status

This command returns the following statuses:

0

    The command executed successfully.

non-zero

An error has occurred.

 Note
. . . .

Do not specify the following characters for the -dir option.

[Windows]
Slashes ("/")

[Linux]
Backslash("\")
. . . .

Chapter 2 Resource Configuration Information and User Definition Information (XML Files)

This chapter explains resource configuration information and user definition information (XML files).

2.1 Overview

This section explains the XMLs used by Resource Orchestrator.

The following types of XMLs are used by Resource Orchestrator:

- L-Server Template

- L-Server

- iSCSI Boot Information

- Network Resources

- Resource Folders

- Users

- User Groups

- Tenant Folders

- Network Configuration Information

- Server NIC Definitions

- VMware Exclusion Port Group Definition File

- Network Device Model Definition

- Parameter File (for Scripts)

- Network Device Interface Configuration File

📖 Note
. . . .

- Use the UTF-8 character code for XML files.

- As a rule, line breaks and blank spaces are recognized as data in an XML. Make sure that there are no unnecessary line breaks or blank spaces when defining an XML file. Additionally, specify elements and attributes according to the Resource Orchestrator XML specifications. Elements not listed in the XML specifications are not recognized.

- Resources that are specified in an XML must be included in the access scope of the user that performs the operation.
. . . .

2.2 L-Server Template

This section explains L-Server template XML definitions.

The L-Server template XML definitions differ depending on the server type.

For physical L-Servers, refer to "2.2.1 Physical L-Server Templates".
For virtual L-Servers, refer to "2.2.2 Virtual L-Server Templates".

If a template is imported without editing the L-Server template name, the content of the existing L-Server template is overwritten. If an L-Server template is imported after the name is edited from when it was exported, the L-Server template is added.
When defining multiple L-Server templates, define multiple L-Servers for each file, assign them different L-Server template names, and enclose them with the LServerTemplates element.

If there is only one L-Server template, the LServerTemplates element is optional.

> 🔰 **Note**
>
> ....
>
> - When using virtualization software other than VMware, be sure to specify the VM type in the L-Server template which will be used for L-Platform management.
>
> - L-Server templates with extension disks cannot be used in L-Platform management. Specify one disk only.
>
> - Physical L-Server templates with a model name cannot be used in L-Platform management. Be sure to specify the number of CPUs, the CPU clock speed, and the memory size.
>
> ....

2.2.1 Physical L-Server Templates

The L-Server template for physical L-Servers is as follows:

```xml
<?xml version="1.0" encoding="utf-8"?>
<LServerTemplates>
  <LServerTemplate name="L-Server#1 Template Name" id="L-Server Template ID"
label="Label">
    <Comment>Comment</Comment>
    <FCConnectionPattern>FC connection pattern</FCConnectionPattern>
    <ServerType>Server Type</ServerType>
    <Model>Model Name</Model>
    <CPU>
      <CPUPerf>CPU Performance</CPUPerf>
      <NumOfCPU>Number of CPUs</NumOfCPU>
    </CPU>
    <Memory>
      <MemorySize>Memory Size</MemorySize>
    </Memory>
    <Disks>
      <Disk type="Disk Connection Type">
        <DiskIndex>Disk Index</DiskIndex>
        <DiskSize>Disk Size</DiskSize>
      </Disk>
    </Disks>
    <NICs>
      <NumOfNIC>Number of NICs</NumOfNIC>
      <NIC>
        <NICIndex>NIC Index</NICIndex>
        <NetworkLinks>
          <NumOfNetworkLinks>Number of networks available for one NIC/NICGroup</
NumOfNetworkLinks>
        </NetworkLinks>
      </NIC>
    </NICs>
    <NICGroups>
      <NICGroup>
        <NICGroupIndex>NIC Redundancy Group Index</NICGroupIndex>
        <NetworkLinks>
          <NumOfNetworkLinks>Number of networks available for one NIC/NICGroup</
NumOfNetworkLinks>
        </NetworkLinks>
        <NICLinks>
          <NICLink>Numbers of NICs contained in the NIC redundancy group</NICLink>
        </NICLinks>
      </NICGroup>
    </NICGroups>
    <Policy>
      <Redundancy>Redundancy</Redundancy>
      <Repurpose>Server Automatic Release(true|false)</Repurpose>
      <SpareSelection method="Spare Server Selection Method" />
```

```
        <AliveMonitoring>AliveMonitoring Setting(true|false)</AliveMonitoring>
    </Policy>
  </LServerTemplate>
  <LServerTemplate name="L-Server#2 Template Name" id="L-Server Template ID"
label="Label">
  ...
  </LServerTemplate>
</LServerTemplates>
```

Table 2.1 List of Items Specified in L-Server Template XML Definitions for Physical L-Servers

Element Name	Description	Remarks (Possible Values, Examples)
L-Server template name (L-ServerTemplate name)	Name of L-Server template	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
L-Server template ID (L-ServerTemplate id)	ID for L-Server template	Optional. For internal management purposes.
Label (L-ServerTemplate label)	Label for L-Server template (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (Comment)	Comment for L-Server template (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
FC connection pattern (FCConnectionPattern)	FC connection pattern file	Specify the file name of the FC connection pattern file that has been located in the following directory. (excluding those with the .rcxprop extension) For details, refer to "D.5.1 Definition files" in the "Setup Guide CE" [Windows] *Installation_folder*\Manager\etc\customize_data\fc_connection_pattern [Linux] /etc/opt/FJSVrcvmr/customize_data/fc_connection_pattern For the FC connection pattern file name, enter a string that is no more than 64 characters long, where the first character is a number or letter and the remaining characters are alphanumeric characters, underscores ("_"), or hyphens ("-").
Server type (ServerType)	Type of server to allocate as an L-Server	Specify "Physical".
Model name (Model)	Model name of the server to allocate to L-Server	Specify the model name of the server to allocate to the L-Server. Specify the model name of the server after checking the basic information on the [Resource Details] tab of the server resource tree. The model name cannot be specified when the following is specified. - CPU performance - Number of CPUs - Memory size
CPU performance (CPUPerf)	CPU performance to allocate to L-Server	Specify a number with up to one decimal place, in units of gigahertz. For details on the scope which can be specified, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". CPU Performance cannot be specified when Model Name is specified.

Element Name	Description	Remarks (Possible Values, Examples)
Number of CPUs (NumOfCPU)	Number of CPUs to allocate to L-Server	Specify an integer equal to or greater than "1". For details on the scope which can be specified, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". Number of CPUs cannot be specified when Model Name is specified.
Memory size (MemorySize)	Size of memory to allocate to L-Server	Specify a number with up to one decimal place, in units of gigabytes. For details on the scope which can be specified, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". Memory Size cannot be specified when Model Name is specified.

Disks (Disks)	The parent element of Disk elements	Specify the parent element of Disk elements.
		
		`<Disks>`
		`  <DiskIndex>0</DiskIndex>`
		`  <DiskSize>10.0</DiskSize>`
		`</Disks>`

Disk connection type (Disk type)	The connection method of the disk to allocate to the L-Server	- FC
		   Specify the disk with a Fibre Channel connection to allocate.
		- iSCSI
		   Specify the disk with an iSCSI connection to allocate.
		
		If omitted, "FC" is set.

Disk index (DiskIndex)	Number of the disk to allocate to the L-Server (Optional, but required when specifying disk size)	Specify an integer starting from "0". 0: Boot disk Other than 0: Data disk Specify "0" if "iSCSI" was specified for Disk Connection Type. For details of the specifiable range, refer to "2.3.1 Definition Information for Physical L-Servers (XML)". Creation of a physical L-Server with no disk specified is not possible. When not specifying a disk in the L-Server template, specify one or more disks in the XML file for the L-Server.
Disk size (DiskSize)	Size of disk to create (Optional, but required when specifying disk number)	Specify a number with up to one decimal place, in units of gigabytes. For details on the scope which can be specified, refer to "10.2.3 [Disk] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
NICs (NICs)	A collection of NIC definitions	Specify one or more NIC elements.
Number of NICs (NumOfNIC)	Number of NICs used for an L-Server (optional)	Specify an integer between 1 and 32.
NIC index (NICIndex)	Number to identify the NIC definition to allocate to the L-Server (Optional, but required when specifying the NIC element)	Specify an integer between 0 and 31 starting with "0". NIC number (NICIndex) + 1 corresponds to a network (NIC) number of the [General] tab in the [Create an L-Server] dialog. For physical L-Servers, specify the value for the NIC number for a rack mount server or a tower server minus 1. The NIC number is defined in preparations explained in "4.2.3.5 Pre-configuring Managed Servers" of the "Setup Guide CE".

Element Name	Description	Remarks (Possible Values, Examples)
		📝 **Example** . . . . If "1" is defined for the NIC number placed on the upper left of the back face of a rack mount server, specify "0". . . . .
NetworkLinks (NetworkLinks)	A collection of a number of network definitions (optional)	Specify the NumOfNetworkLinks element only once. If the NetworkLinks element is omitted, a single network is set for a NIC and a NIC redundancy group.
Number of networks available for one NIC/ NICGroup (NumOfNetworkLinks)	Number of networks available for one NIC/ NICGroup (optional)	Specify an integer equal to or greater than "1". If left blank, "1" is set. The NumOfNetworkLinks element must be included within the NetworkLinks element. Only one NumOfNetworkLinks element can be included within the NetworkLinks element.
NICGroups (NICGroups)	A collection of NIC redundancy group definitions (optional)	Specify when NIC redundancy is necessary. Specify one or more NICGroup elements.
NIC redundancy group (NICGroup)	NIC redundancy group (Optional, but required when specifying the NICGroups element)	Specify a NIC redundancy group. Specify a NIC contained in the NIC group using the NICLink element.
NIC redundancy group index (NICGroupIndex)	NIC redundancy group index (Optional, but required when specifying the NICGroup element)	Specify a NIC redundancy group index. Specify for each NICGroup. Specify sequential numbers starting from "0".
NICLinks (NICLinks)	A collection of NIC definitions of a NIC redundancy group	Specify the NICLink element twice.
NIC numbers contained in the NIC redundancy group (NICLink)	NIC number contained in the NIC redundancy group (Optional, but required when specifying the NICGroup element)	Specify a NIC number contained in the NIC redundancy group. When there are multiple NICs, specify NICLink for each NIC number. Specify a set of redundancies. A NIC number cannot be shared among groups. For physical L-Servers, specify the value for the NIC number for a rack mount server or a tower server minus 1. The NIC number is defined in preparations explained in "4.2.3.5 Pre-configuring Managed Servers" of the "Setup Guide CE". 📝 **Example** . . . . If "1" is defined for the NIC number placed on the upper left of the back face of a rack mount server, specify "0". . . . .
Redundancy (Redundancy)	Server redundancy to allocate to L-Servers (optional)	- None None - HA

Element Name	Description	Remarks (Possible Values, Examples)
		Specify when performing redundancy.
		If omitted and not specified when creating the L-Server, "None" is set. For details on the redundancy, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Repurpose (Repurpose)	Automatic release of servers during power off (optional)	Specify whether to automatically release the servers allocated to the L-Server, when they are powered off. - When using automatic release Specify "true". - When not using automatic release Specify "false". If omitted, no value is set. In this case, the value set in the definition file is used when creating the L-Server. For details on the definition file, refer to "11.8.1 Installation" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Spare server selection method (SpareSelection method)	Selection method for spare servers (optional)	- name_order Spare servers are selected from among servers that match the model name of the operating server, in order of physical server names. - keep_spec A server that provides the same or higher performance figures as the operating server, and the least difference in performance is selected. If omitted, a user specified server is set.
Alive Monitoring Settings (AliveMonitoring)	Alive Monitoring Settings (optional)	- When enabling alive monitoring Specify "true" - When disabling alive monitoring Specify "false" If omitted and not specified when creating the L-Server, "false" is set.

📝 Example

- L-Server Template

```
<?xml version="1.0" encoding="utf-8"?>
<LServerTemplate name="template2" label="for physical server">
  <Comment>2010/XX/XX created for work B</Comment>
  <ServerType>Physical</ServerType>
  <Model>PRIMERGY BX922 S2</Model>
  <Disks>
    <Disk>
      <DiskIndex>0</DiskIndex>
      <DiskSize>40.0</DiskSize>
    </Disk>
  </Disks>
  <Policy>
    <Redundancy>None</Redundancy>
  </Policy>
</LServerTemplate>
```

- When creating an L-Server template using detailed L-Server information

  Modify the following information.

  - Delete the Resources element

  - Modify the name attribute of the LServer element

  - Change the LServer element to the LServerTemplate element

  - Delete the CPU, CPUArch, CPUPerf, NumOfCPU, Memory, and MemorySize elements

  - Delete the name attribute of the DiskLink and Disk elements

  - Delete the NetworkLinks, NetworkLink, MacAddress, and IpAddress elements

  - Add the NICGroup, NICGroupIndex, NetworkLinks, NumOfNetworkLInks, NICLinks, NumOfNIC, and NICIndex elements when necessary

```xml
<?xml version="1.0" encoding="utf-8"?>
<LServerTemplate name="P-Server-template" id="WIN-66N8JTJM2BD_2853" label="">
  <Comment></Comment>
  <ServerType>Physical</ServerType>
  <Model>PRIMERGY BX920 S1</Model>
  <BootType>Disk</BootType>
  <Disks>
      <Disk>
        <DiskIndex>0</DiskIndex>
        <DiskSize>20.0</DiskSize>
      </Disk>
  </Disks>
  <NICGroups>
  </NICGroups>
  <NICs>
    <NIC>
      <NICIndex>0</NICIndex>
    </NIC>
  </NICs>
  <HBAs>
    <HBA>
      <HBAIndex>0</HBAIndex>
      <WWN auto="false">20:00:00:17:42:50:00:54</WWN>
    </HBA>
  </HBAs>
  <ExternalIdentifier></ExternalIdentifier>
  <Current>
    <PhysicalServer name="chassis4-2" id="WIN-66N8JTJM2BD_83" />
  </Current>
  <ExternalProfile/>
  <Policy>
    <Redundancy>None</Redundancy>
    <Positioning>Fixed</Positioning>
    <Exclusion></Exclusion>
    <Priority>128</Priority>
    <Repurpose>false</Repurpose>
    <AliveMonitoring>false</AliveMonitoring>
  </Policy>
  <Status>
    <ResourceStatus>stop</ResourceStatus>
    <PowerStatus>off</PowerStatus>
    <AllocationStatus>attached</AllocationStatus>
    <MaintenanceMode>active</MaintenanceMode>
    <Resources>allocated</Resources>
    <ServerAllocationStatus>true</ServerAllocationStatus>
    <DiskAllocationStatus>false</DiskAllocationStatus>
```

```
      <AddressAllocationStatus>true</AddressAllocationStatus>
    </Status>
    <From>
      <PhysicalServer name="chassis4-2" id="WIN-66N8JTJM2BD_83" />
    </From>
    <Spare>
    </Spare>
  </LServerTemplate>
```

....

2.2.2 Virtual L-Server Templates

The L-Server template for virtual L-Servers is as follows:

```
<?xml version="1.0" encoding="utf-8"?>
<LServerTemplates>
  <LServerTemplate name="L-Server#1 Template Name" id="L-Server Template ID" label="Label">
    <Comment>Comment</Comment>
    <ServerType>Server Type</ServerType>
    <VMType>VM Type</VMType>
    <CPU>
      <CPUArch>CPU Architecture</CPUArch>
      <CPUPerf>CPU Performance</CPUPerf>
      <NumOfCPU>Number of CPUs</NumOfCPU>
      <CPUReserve>CPU Reservation Performance</CPUReserve>
      <CPUShare>CPU Shares</CPUShare>
      <CPUWeight>CPU Allocation Priority</CPUWeight>
    </CPU>
    <Memory>
      <MemorySize>Memory Size</MemorySize>
      <MemoryReserve>Memory Reservation Capacity</MemoryReserve>
      <MemoryShare>Memory Shares</MemoryShare>
      <DynamicMemory>Dynamic Memory Settings</DynamicMemory>
      <StartupRAM>Initial Memory Size</StartupRAM>
      <MemoryBuffer>Memory Buffer</MemoryBuffer>
      <MemoryWeight>Memory Allocation Priority</MemoryWeight>
    </Memory>
    <Disks>
      <Disk>
        <DiskIndex>Disk Index</DiskIndex>
        <DiskSize>Disk Size</DiskSize>
      </Disk>
    </Disks>
    <NICs>
      <NumOfNIC>Number of NICs</NumOfNIC>
    </NICs>
    <Policy>
      <Redundancy>Redundancy</Redundancy>
      <Positioning>Positioning</Positioning>
      <Repurpose>Server Automatic Release(true|false)</Repurpose>
      <OverCommit>Enabling/Disabling Overcommit</OverCommit>
      <AliveMonitoring>AliveMonitoring Setting(true|false)</AliveMonitoring>
    </Policy>
  </LServerTemplate>
  <LServerTemplate name="L-Server#2 Template Name" id="L-Server Template ID" label="Label">
  ...
  </LServerTemplate>
</LServerTemplates>
```

Table 2.2 List of Items Specified in L-Server Template XML Definitions for Virtual L-Servers

Element Name	Description	Remarks (Possible Values, Examples)
L-Server template name (LServerTemplate name)	Name of L-Server template	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
L-Server template ID (LServerTemplate id)	ID for L-Server template	Optional. For internal management purposes.
Label (LServerTemplate label)	Label for L-Server template (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (Comment)	Comment for L-Server template (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
Server type (ServerType)	Type of server to allocate as an L-Server	Specify "Virtual".
VM type (VMType)	Type of VM to allocate as an L-Server (optional)	- VMware - Hyper-V - RHEL-Xen - RHEL-KVM - Oracle VM If omitted, it must be specified when creating the L-Server.
CPU architecture (CPUArch)	CPU architecture of the server to allocate to the L-Server (optional)	Specify IA. If omitted, "IA" is set.
CPU performance (CPUPerf)	CPU performance to allocate to L-Server	Specify a number with up to one decimal place, in units of gigahertz. For details on the scope which can be specified, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Number of CPUs (NumOfCPU)	Number of CPUs to allocate to L-Server	Specify an integer equal to or greater than "1". For details on the scope which can be specified, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
CPU reservation performance (*1, *2) (CPUReserve)	The minimum number of CPU resources to be allocated to an L-Server (optional)	Specify a number with up to one decimal place, in units of gigahertz. Specify a value in the range from "0" to the upper limit of the CPU performance. If left blank, "0" is set when creating the L-Server.
CPU shares (*1) (CPUShare)	The relative proportion for allocation of CPU resources on an L-Server (optional)	Specify an integer equal to or greater than "1". (*3) If left blank, the value of "the number of CPUs multiplied by 1,000" is set when creating the L-Server.
CPU allocation priority (*2) (CPUWeight)	CPU allocation priority (optional)	Specify an integer between 1 and 10,000. If left blank, "100" is set when creating the L-Server. The upper limit is not checked.

Element Name	Description	Remarks (Possible Values, Examples)
Memory Size (MemorySize)	Size of memory to allocate to L-Server	Specify a number with up to one decimal place, in units of gigabytes. For details on the scope which can be specified, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Memory reservation capacity (*1) (MemoryReserve)	The minimum amount of memory resources to be reserved for an L-Server (optional)	Specify a number with up to one decimal place, in units of gigabytes. Specify a value in the range from "0" to the upper limit of Memory Size. If left blank, the value specified for Memory Size is set when creating the L-Server. (*4)
Memory shares (*1) (MemoryShare)	The relative proportion for allocation of memory resources on an L-Server (optional)	Specify an integer equal to or greater than "0". (*3) If left blank, the number determined by multiplying the value specified for Memory Size by 1024 by 10 is set when creating the L-Server.

Dynamic memory settings (*2)
(DynamicMemory)
	Dynamic memory settings
	(optional)
		- When enabling dynamic memory
		  Specify "true".
		- When disabling dynamic memory
		  Specify "false".
		
		If left blank, the value differs depending on the setting values for Initial Memory Size and Memory Buffer.
		- Initial Memory Size and Memory Buffer are already set
		  "true" is set.
		- Initial Memory Size and Memory Buffer are not set
		  No value is set.
		
		When the command is executed, "on" is displayed for expressing the enabled status and "off" for the disabled status. If left blank, no value is displayed.
		When this element is not configured while exporting an L-Server template, this element will not be output.

Initial memory size (*2) (StartupRAM)	Initial memory size (optional)	Specify the memory size in the range of 0.1 to the value specified for Memory Size. If left blank, the value specified for Memory Size is set when dynamic memory is enabled in L-Server creation. If dynamic memory is disabled when creating an L-Server, the specified value is ignored.
Memory buffer (*2) (MemoryBuffer)	Available memory to be reserved as a buffer (%) (optional)	Specify an integer between 5 and 2000. If left blank, "20" is set when the dynamic memory is enabled in L-Server creation. The upper limit is not checked. If dynamic memory is disabled when creating an L-Server, the specified value is ignored.
Memory allocation priority (*2) (MemoryWeight)	Memory allocation priority (optional)	Specify an integer between 0 and 10,000. The upper limit is not checked. If left blank, "5000" is set when creating the L-Server.
Disk index (DiskIndex)	Number of the disk to allocate to the L-Server (Optional, but required when specifying disk size)	Specify an integer starting from "0". 0: Boot disk Other than 0: Data disk For details of the specifiable range, refer to "2.3.2 Definition Information for Virtual L-Servers (XML)".

Element Name	Description	Remarks (Possible Values, Examples)
		Creation of a virtual L-Server with no disk specified nor cloning image deployed is not possible. When not specifying a disk in the L-Server template, specify one or more disks in the XML file for the L-Server, or specify a cloning image.
Disk size (DiskSize)	Size of disk to create (Optional, but required when specifying disk number)	Specify a number with up to one decimal place, in units of gigabytes. If omitted, a disk size is assigned according to the size of the image specified when creating the L-Server. For details on the scope which can be specified, refer to "10.3.3 [Disk] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Number of NICs (NumOfNIC)	Number of NICs used for an L-Server (optional)	Specify an integer equal to or greater than "1".
Redundancy (Redundancy)	Server redundancy to allocate to L-Servers (optional)	- None No redundancy - HA Places in a server with HA set If omitted and not specified when creating the L-Server, "None" is set. For details on the redundancy, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". When "RHEL-Xen" or "RHEL-KVM" has been specified for the VM type, only "None" can be specified.
Positioning (Positioning)	Physical location of the server to allocate to L-Servers (optional)	- Fixed Fixed physical position - AttachAtBoot Position changes upon startup When "RHEL-Xen" has been specified for the VM type, only "Fixed" can be specified. If omitted and not specified when creating the L-Server, Fixed is set. For details on the positioning, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Repurpose (Repurpose)	Automatic release of servers during power off (optional)	Specify whether to automatically release the servers allocated to the L-Server, when they are powered off. When enabling automatic release, specify "true". When not enabling automatic release, specify "false". When "RHEL-Xen" has been specified for the VM type, only "false" can be specified. If omitted, no value is set. In this case, the value set in the definition file is used when creating the L-Server. For details on the definition file, refer to "11.8.1 Installation" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Enabling/disabling overcommit (OverCommit)	Setting for overcommit (optional)	Set enabling/disabling of overcommit. If left blank, "false" is set. When enabling overcommit, specify "true". When disabling overcommit, specify "false".
Alive Monitoring Settings	Alive Monitoring Settings	- When enabling alive monitoring

Element Name	Description	Remarks (Possible Values, Examples)
(AliveMonitoring)	(optional)	Specify "true" - When disabling alive monitoring Specify "false" If omitted and not specified when creating the L-Server, "false" is set.

*1: When the VM type of an L-Server is VMware, the specified value is reflected.

*2: When the VM type of an L-Server is Hyper-V, the specified value is reflected.

*3: For details on the values that can be specified, refer to the "vSphere Resource Management Guide" of VMware.

Refer to the relevant version of document, referring to the following URL:

URL: http://www.vmware.com/support/pubs/ (As of February 2012)

*4: When omitted, the memory reservation capacity will be the same value as the value for the memory capacity, and the memory overcommit function will be disabled. When using the memory overcommit function, specify the value.

📝 Example

....

- When specifying VMware for the VM type, create an L-Server template (two NICs)

```
<?xml version="1.0" encoding="utf-8"?>
<LServerTemplate name="template1" label="for virtual machine">
  <Comment>2010/XX/XX created for work A</Comment>
  <ServerType>Virtual</ServerType>
  <VMType>VMware</VMType>
  <CPU>
    <CPUArch>IA</CPUArch>
    <CPUPerf>1.0</CPUPerf>
    <NumOfCPU>2</NumOfCPU>
  </CPU>
  <Memory>
    <MemorySize>2.0</MemorySize>
  </Memory>
  <Disks>
    <Disk>
      <DiskIndex>0</DiskIndex>
      <DiskSize>100.0</DiskSize>
    </Disk>
    <Disk>
      <DiskIndex>1</DiskIndex>
      <DiskSize>200.0</DiskSize>
    </Disk>
  </Disks>
  <NICs>
    <NumOfNIC>2</NumOfNIC>
  </NICs>
  <Policy>
    <Redundancy>None</Redundancy>
    <Positioning>Fixed</Positioning>
  </Policy>
</LServerTemplate>
```

- When specifying RHEL-Xen for the VM type and creating a L-Server template to share the data disks (for one NIC)

```
<?xml version="1.0" encoding="utf-8"?>
<LServerTemplate name="template1" label="for first server">
  <Comment>2010/XX/XX created for work A</Comment>
  <ServerType>Virtual</ServerType>
```

```
      <VMType>RHEL-Xen</VMType>
      <CPU>
        <CPUArch>IA</CPUArch>
        <CPUPerf>1.0</CPUPerf>
        <NumOfCPU>1</NumOfCPU>
      </CPU>
      <Memory>
        <MemorySize>1.0</MemorySize>
      </Memory>
      <Disks>
        <Disk>
          <DiskIndex>0</DiskIndex>
          <DiskSize>40.0</DiskSize>
        </Disk>
        <Disk>
          <DiskIndex>1</DiskIndex>
          <DiskSize>80.0</DiskSize>
        </Disk>
      </Disks>
      <NICs>
        <NumOfNIC>1</NumOfNIC>
      </NICs>
      <Policy>
        <Redundancy>None</Redundancy>
        <Positioning>Fixed</Positioning>
      </Policy>
    </LServerTemplate>
```

- When creating an L-Server template using detailed L-Server information

  Modify the following information.

    - Delete the Resources element

    - Modify the name attribute of the LServer element

    - Change the LServer element to the LServerTemplate element

    - Delete the name attribute of the DiskLink and Disk elements

    - Delete the NIC, NetworkLink, NICIndex, MacAddress, and IpAddress elements

    - Add the NumOfNIC element

```
<?xml version="1.0" encoding="utf-8"?>
<LServerTemplate name="L-Server-template" id="rctest_1220"
label="">
  <Comment></Comment>
  <TemplateLink name="sample_small" id="rctest_23" />
  <ServerType>Virtual</ServerType>
  <VMType>VMware</VMType>
  <OSType>Red Hat Enterprise Linux 5 (32-bit)</OSType>
  <CPU>
    <CPUArch>IA</CPUArch>
    <CPUPerf>1.0</CPUPerf>
    <NumOfCPU>1</NumOfCPU>
  </CPU>
  <Memory>
    <MemorySize>1.0</MemorySize>
  </Memory>
  <Disks>
      <Disk>
        <DiskIndex>0</DiskIndex>
        <DiskSize>10.0</DiskSize>
```

```
        </Disk>
     </Disks>
     <NICs>
       <NumOfNIC>1</NumOfNIC>
     </NICs>
     <ExternalIdentifier>42114bec-d26d-0c3d-c9aa-080a0c40d020</
ExternalIdentifier>
     <Current>
       <VmHost name="gekkou-pri" id="rctest_62" />
       <VmGuest name="L-Server1-75" id="rctest_1224" />
     </Current>
     <ExternalProfile/>
     <ServerImageLink name="/ImagePool/pool" version="1"
id="rctest_132" />
     <Policy>
       <Redundancy>None</Redundancy>
       <Positioning>Fixed</Positioning>
       <Exclusion></Exclusion>
       <Priority>128</Priority>
       <Repurpose>false</Repurpose>
     </Policy>
     <Status>
       <ResourceStatus>stop</ResourceStatus>
       <PowerStatus>off</PowerStatus>
       <AllocationStatus>attached</AllocationStatus>
       <MaintenanceMode>active</MaintenanceMode>
       <Resources>allocated</Resources>
       <ServerAllocationStatus>true</ServerAllocationStatus>
       <DiskAllocationStatus>true</DiskAllocationStatus>
       <AddressAllocationStatus>true</AddressAllocationStatus>
     </Status>
  </LServerTemplate>
```

2.3 L-Servers

This section explains the XML definitions of L-Servers.

The L-Server XML definitions differ depending on the server type.

For physical L-Servers, refer to "2.3.1 Definition Information for Physical L-Servers (XML)".
For virtual L-Servers, refer to "2.3.2 Definition Information for Virtual L-Servers (XML)".

2.3.1 Definition Information for Physical L-Servers (XML)

This section explains the XML definitions of physical L-Servers.

To specify the level, change the Resources element to the Folder element.

Refer to "Example Creating an L-Server in a resource folder or a tenant folder".

The XML definition for a physical L-Server is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server Name" label="Label">
    <Comment>Comment</Comment>
    <TemplateLink name="L-Server Template Name"/>
    <ServerImageLink name="Image Name" version="Image Version"/>
    <FCConnectionPattern>FC connection pattern</FCConnectionPattern>
    <ServerType>Server Type</ServerType>
    <Model>Model Name</Model>
    <BootType>Boot Mode</BootType>
```

```
    <CPU>
      <CPUPerf>CPU Performance</CPUPerf>
      <NumOfCPU>Number of CPUs</NumOfCPU>
    </CPU>
    <Memory>
      <MemorySize>Memory Size</MemorySize>
    </Memory>
    <PXENetworkLink name="Network Name for PXE Boot"/>
    <Disks>
      <Disk name="Disk Name" type="Disk Connection Type">
        <DiskIndex>Disk Index</DiskIndex>
        <Exist>Existing LUN</Exist>
        <DiskLink name="Disk Name of Existing LUN"/>
      </Disk>
      <Disk>
        <DiskLink name="Disk Name of Existing LUN" />
        <DiskIndex>Disk Index</DiskIndex>
      </Disk>
      <Disk>
        <Exist>Existing LUN</Exist>
        <DiskLink name="Disk Name of Existing LUN" />
        <DiskIndex>Disk Index</DiskIndex>
      </Disk>
      <Disk name="Disk Name" type="Disk Connection Type">
        <DiskIndex>Disk Index</DiskIndex>
        <DiskSize>Disk Size</DiskSize>
        <From>
          <VirtualStorage name="Virtual Storage Resource Name"/>
          <Pool name="Storage Pool Name"/>
        </From>
      </Disk>
    </Disks>
    <NICGroups>
      <NICGroup>
        <NICGroupIndex>NIC Redundancy Group Index</NICGroupIndex>
        <NetworkLinks>
           <NetworkLink name="Network_name" index="Network_index" vlan_mode="VLAN_mode">
            <IpAddress auto="Automatic IP Configuration" address="IP address"/>
          </NetworkLink>
        </NetworkLinks>
        <NICLinks>
          <NICLink>Numbers of NICs contained in NIC group</NICLink>
        </NICLinks>
      </NICGroup>
    </NICGroups>
    <NICs>
      <NIC>
        <NICIndex>NIC Index</NICIndex>
          <NetworkLinks>
            <NetworkLink name="Network_name" index="Network_index" vlan_mode="VLAN_mode">
              <IpAddress auto="Automatic IP Configuration" address="IP address"/>
            </NetworkLink>
          </NetworkLinks>
      <MacAddress auto="MAC Address Auto Select" Address Set Resource of MAC Address or Address
Pool/>
      </NIC>
    </NICs>
    <HBAs>
      <HBA>
        <HBAIndex>HBA Index</HBAIndex>
        <WWN auto="WWNAutoSelect" WWN Address Set Resource or Address Pool/>
      </HBA>
    </HBAs>
```

```
        <IOVirtualOptionPool name="Address Pool Name"/>
      <Policy>
        <Redundancy>Redundancy</Redundancy>
        <Priority>Priority</Priority>
        <Repurpose>Server Automatic Release(true|false)</Repurpose>
        <SpareSelection method="Spare Server Selection Method" />
        <FCSinglePath>SAN Path Status</FCSinglePath>
        <AliveMonitoring>AliveMonitoring Setting(true|false)</AliveMonitoring>
      </Policy>
      <Primary>Next Server to Start</Primary>
      <From>
        <PhysicalServer name="Physical Server Name"/>
      </From>
      <From>
        <Pool name="Server Pool Name"/> or
        <PhysicalServer name="Physical Server Name"/>
      </From>
      <Spare>
        <Pool name="Reserve Setting Server Pool Name"/>
      </Spare>
      <Allocation>Allocation of Resources</Allocation>
      <OSSetting>
        <ComputerName>Computer Name, Hostname</ComputerName>
      </OSSetting>
    </LServer>
</Resources>
```

Table 2.3 List of Items Specified in XML Definitions for Physical L-Servers

Element Name	Description	Remarks (Possible Values, Examples)
L-Server name (*1, *2, *3) (LServer name)	Name of the L-Server	Specify a character string beginning with an alphanumeric character and containing up to 64 alphanumeric characters, underscores ("_"), and hyphens ("-").
Label (*1, *2) (LServer label)	Label for the L-Server (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (*1, *2) (Comment)	Comment for the L-Server (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
L-Server template name (*2) (TemplateLink name)	Name of the L-Server template to use for the L-Server (optional)	Specify the resource name of an existing L-Server template.
Image name (*2) (ServerImageLink name)	Name of the cloning image to deploy to the L-Server's boot disk (optional)	Specify the resource name of an existing cloning image. Specify a name containing a resource folder. For details, refer to "10.1 Creation Using an L-Server Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Image version (*2) (ServerImageLink version)	Version of the cloning image to deploy to the L-Server's boot disk (optional)	Specify an integer. If omitted, the latest version is used.

Element Name	Description	Remarks (Possible Values, Examples)
FC connection pattern (FCConnectionPattern)	FC connection pattern file	Specify the file name of the FC connection pattern file that has been located in the following directory. (excluding those with the .rcxprop extension) For details, refer to "D.5.1 Definition files" in the "Setup Guide CE" [Windows] *Installation_folder*\Manager\etc\customize_data\fc_connection_pattern [Linux] /etc/opt/FJSVrcvmr/customize_data/fc_connection_pattern For the FC connection pattern file name, enter a string that is no more than 64 characters long, where the first character is a number or letter and the remaining characters are alphanumeric characters, underscores ("_"), or hyphens ("-").
Server type (*4) (ServerType)	Type of server to allocate as an L-Server	Specify "Physical".

Model name (*2, *4)
(Model)
	Model name of the server to allocate to L-Server	Specify the model name of the server to allocate to the L-Server.
		
		Specify the model name of the server after selecting the server resource on the server resource tree, and checking the model name on the [Resource Details] tab.
		
		The model name cannot be specified when the following is specified.
		
		  - CPU performance
		
		  - Number of CPUs
		
		  - Memory Size

Boot mode (*1, *2, *3, *5)
(BootType)
	L-Server boot method	Specify the L-Server boot method.
		
		  - Disk
		
		    Specify this mode when performing the boot from the disk connected to the L-Server.
		
		  - PXE
		
		    Specify this mode when performing the network boot using PXE (Preboot eXecution Environment).
		
		This can also be specified using the rcxadm lserver set command.
		For details, refer to "1.3.1 rcxadm lserver".

CPU performance (*1, *2, *3, *4) (CPUPerf)	CPU performance to allocate to L-Server	Specify a number between 0.1 and 10.0 with up to one decimal place, in units of gigahertz. For details on the scope which can be specified, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". CPU Performance cannot be specified when Model Name is specified.
Number of CPUs (*1, *2, *3, *4) (NumOfCPU)	Number of CPUs to allocate to L-Server	Specify an integer equal to or greater than "1". For details on the scope which can be specified, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". There is no upper limit when performing creation or modification using the command. Number of CPUs cannot be specified when Model Name is specified.
Memory size (*1, *2, *3, *4) (MemorySize)	Size of memory to allocate to L-Server	Specify a number with up to one decimal place, in units of gigabytes.

Element Name	Description	Remarks (Possible Values, Examples)
		For details on the scope which can be specified, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". Memory Size cannot be specified when Model Name is specified.
Network name for PXE boot (*1, *2, *3, *5) (PXENetworkLink name)	Name of network resource to perform PXE boot of the L-Server (optional)	Specify the resource name of an existing network when performing a PXE boot. This can also be specified using the rcxadm lserver set command. For details, refer to "1.3.1 rcxadm lserver".
Disk name (*2) (Disk name)	The disk name to allocate to L-Servers (optional)	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). If omitted, a name is automatically generated.

Disk connection type (*2, *4)
 	
(Disk type)
	The connection method of the disk to allocate to the L-Server	- FC
		
		   Specify the disk with a Fibre Channel connection to allocate.
		
		- iSCSI
		
		   Specify the disk with an iSCSI connection to allocate.
		
		Setting is possible only when disks have the number "0".
		If omitted, "FC" is set.

Disk index (*2, *4) (DiskIndex)	Number of the disk to allocate to the L-Server	Specify an integer starting from "0". 0: Boot disk Other than 0: Data disk Specify a number between 0 and 59. Specify "0" if "iSCSI" was specified for Disk Connection Type.

Existing LUN (*2)
 	
(Exist)
	Specify that the LUN to allocate to the L-Server was created in advance by using storage management software, or was automatically created by Resource Orchestrator
	
	(optional)
		- true
		
		   Specify when the LUN was created in advance by using storage management software, or was automatically created by Resource Orchestrator.
		
		- false
		
		   Specify when the LUN was created automatically by Resource Orchestrator.
		
		When connecting a LUN that was created in advance by using storage management software, or was automatically created by Resource Orchestrator, this setting cannot be omitted.

Disk name of existing LUN (*2) (DiskLink name)	Disk name of the LUN which was created in advance by using storage management software, or was automatically created by	Specify the disk name to allocate.

Element Name	Description	Remarks (Possible Values, Examples)
	Resource Orchestrator to allocate to the L-Server (optional)	
Disk size (*2, *4) (DiskSize)	Size of disk to create	Specify a number with up to one decimal place, in units of gigabytes. For details on the scope which can be specified, refer to "10.2.3 [Disk] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Virtual storage resource name (*2) (VirtualStorage name)	Virtual storage from which the disk to allocate to the L-Server is created If specified at the same time as storage pool, priority is given to this attribute. (optional)	Specify the resource name of an existing virtual storage.
Storage pool name (*2) (Pool name)	Resource pool for extracting the virtual storage to create the disk to allocate to the L-Server (optional)	Specify the resource name of an existing storage pool. If there are storage pools with the same name on different levels, the level must also be specified. *Resource_folder*/*Resource_pool*
NICGroups (NICGroups)	A collection of NIC redundancy group definitions (optional)	Specify when NIC redundancy is necessary. Specify one or more NICGroup elements.
NIC redundancy group (*2, *4) (NICGroup)	NIC redundancy group	Specify a NIC redundancy group. NIC IP addresses with the index specified in NICLink, and the Network name, are ignored.
NIC redundancy group index (*2) (NICGroupIndex)	NIC redundancy index	Specify a NIC redundancy index. Specify for each NICGroup. Specify sequential numbers starting from "0".
Network name (*2) (NetworkLink name)	Name of the network that the L-Server connects to	Specify the name of an existing network resource. When the network resource is an admin LAN resource or one for iSCSI, specify "untagged" for vlan_mode.
Network index (*2, *4) (NetworkLink index)	Network index	Specify a network index. The index starts from "0".
IP address (*2) (IpAddress)	IP address to allocate to L-Servers	The IP can be specified using the following methods: <IpAddress auto="false" address="*xxx.xxx.xxx.xxx*"/> Specify an IP address.

Element Name	Description	Remarks (Possible Values, Examples)
	(optional)	<IpAddress auto="true"/> An IP address is automatically assigned from the address range set for the network resource. Even if the IpAddress element is omitted, an IP address is automatically assigned from the address range set for the network resource.
Numbers of NICs contained in NIC group (*2, *4) (NICLink)	NIC number contained in the NIC group	Specify NIC numbers contained in the NIC group. If there are multiple NIC numbers, specify the NICLink for each NIC number. Specify a set of redundancies. The NIC number cannot be longer than the length of the NICGroup element. For physical L-Servers, specify the value for the NIC number for a rack mount server or a tower server minus 1. The NIC number is defined in preparations explained in "4.2.3.5 Pre-configuring Managed Servers" of the "Setup Guide CE". 💡 **Example** • If "1" is defined for the NIC number placed on the upper left of the back face of a rack mount server, specify "0". •

NIC
 	
(NIC)
	NIC definition	When not performing NIC redundancy, specify the NetworkLink element and the NetworkLinks element.
		
		When not connecting a NIC to a network, the NetworkLink element and the NetworkLinks element are not necessary.
		The child elements are as follows:
		
		  - IpAddress element
		
		  - NetworkLink element
		
		  - NetworkLinks element
		
		  - MacAddress element
		
		  - NICIndex element

NIC index (*2, *4) (NICIndex)	Number to identify the NIC definition to allocate to the L-Server	Specify an integer between 0 and 31 starting with "0". Check that sequential numbers starting from "0" are used for each NIC element. NIC number (NICIndex) + 1 corresponds to a network (NIC) number of the [General] tab in the [Create an L-Server] dialog. For physical L-Servers, specify the value for the NIC number for a rack mount server or a tower server minus 1. The NIC number is defined in preparations explained in "4.2.3.5 Pre-configuring Managed Servers" of the "Setup Guide CE". 💡 **Example** • If "1" is defined for the NIC number placed on the upper left of the back face of a rack mount server, specify "0". •

VLAN mode (*2)
 	
(NetworkLink vlan_mode)
	VLAN mode
	
	(optional)
		Specify a VLAN mode.
		
		The VLAN mode can be specified using the following methods:
		
		  - Untagged VLAN communication
		
		    vlan_mode="untagged"
		
		  - Tagged VLAN communication
		
		    vlan_mode="tagged"

Element Name	Description	Remarks (Possible Values, Examples)
		When vlan_mode is omitted, tagged VLAN communication is used.

MAC address (*2)
 	
(MacAddress)
	MAC address to allocate to the L-Server
	
	(Optional, when specifying the address pool)
		The WWN can be specified using the following methods:
		
		- MAC address direct specification
		  <MacAddress auto="false">*MAC address format*</MacAddress>
		  For the MAC address format, specify the MAC address in either hyphen ("-")
		  or colon (":") delimited form.
		  ("*xx-xx-xx-xx-xx-xx*" or "*xx:xx:xx:xx:xx:xx*")
		
		- Auto allocation
		  <MacAddress auto="true" from="*MacAddressSetResource*"/>
		  or
		  <MacAddress auto="true" pool="*Address Pool Name*"/>
		  An address in the MAC address range set in the MACAddressSetResource or
		  MAC address range registered in the specified address pool will automatically
		  be allocated.

HBA Index (*2) (HBAIndex)	Number to identify the HBA definition to allocate to the L-Server	Specify an integer starting from "0". Specify a number between 0 and 1.

WWN (*2)
 	
(WWN)
	WWN to allocate to the L-Server
	
	(Optional, when specifying the address pool)
		The WWN can be specified using the following methods:
		
		- WWN direct specification
		  <WWN auto="false">WWN format</WWN>
		  For the WWN format, specify the WWN in colon (":") delimited form.
		  ("*xx:xx:xx:xx:xx:xx*")
		
		- Auto allocation
		  <WWN auto="true" from="*WWN*AddressSetResource"/>
		  <WWN auto="true" pool="*Address Pool Name*"/>
		  An address in the WWN scope set in the WWN address set resources or WWN
		  scope registered in the specified address pool will automatically be assigned.

Address pool name (*2) (IOVirtualOptionPool name)	Address pool to allocate to the L-Server If specified at the same time as MAC Address and WWN, priority is given to this attribute. (Optional, when specifying MAC Address and WWN)	Specify the resource name of the address pool to store address set resources (WWNs and MAC addresses) to allocate to L-Servers. WWNs and MAC addresses of address set resources are the target of configuration. The address pool can be specified using the following methods: <IOVirtualOptionPool name="*Address Pool Name*"/> If there are address pools with the same name on different levels, the level must also be specified. *Resource_folder_name*/*Resource_pool_name*

Redundancy (*1, *2)
 	
(Redundancy)
	Server redundancy to allocate to L-Servers
	
	(optional)
		- None
		  None
		- HA
		  Specify when performing redundancy.

Element Name	Description	Remarks (Possible Values, Examples)
		If omitted, "None" is set. For details on the redundancy, refer to "10.2.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Priority (*1, *2) (Priority)	Priority when allocating resources or creating an L-Server (optional)	When the L-Server is the target of batch power operations, or when performing batch creation of multiple L-Servers using XMLs of resource folders, specify the priority in the range of 1 to 256. Smaller values indicate higher priority. If omitted, "128" is set. When "0" is specified, the server is excluded from batch power operations.

Automatic server release (*1, *2, *4, *5)
 	
(Repurpose)
	Automatic release of servers during power off
	
	(optional)
		Specify whether to automatically release the servers allocated to the L-Server, when they are powered off.
		
		 - When using automatic release
		
		   Specify "true".
		
		 - When not using automatic release
		
		   Specify "false".
		
		If the values of this attribute and "*Server Automatic Release*" of the L-Server template are omitted, the value that is set in the definition file is used.
		For details on the definition file, refer to "11.8.1 Installation" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
		Ensure that "true" is specified for L-Servers to change the usage of.

Spare server selection method (*1, *2, *4)
 	
(SpareSelection method)
	Selection method for spare servers
	
	(optional)
		- name_order
		
		   Spare servers are selected from among servers that match the model name of the operating server, in order of physical server names.
		
		 - keep_spec
		
		   A server that provides the same or higher performance figures as the operating server, and the least difference in performance is selected.
		
		If omitted, "keep_spec" is set.

SAN path status (*1, *2, *3, *4, *5)
 	
(FCSinglePath)
	San path status after physical L-Server creation	Configure the SAN path status after physical L-Server creation.
		
		 - true
		
		   Specify when setting single-path.
		
		 - false
		
		   Specify when setting multi-path.
		
		If left blank, "false" is set.
		
		This can also be specified using the rcxadm lserver set command.
		For details, refer to "1.3.1 rcxadm lserver".

Alive monitoring settings (*1, *2, *4)
 	
(AliveMonitoring)
	Alive Monitoring Settings
	
	(optional)
		- When enabling alive monitoring
		
		   Specify "true"
		
		 - When disabling alive monitoring
		
		   Specify "false"
		
		If omitted and not specified when creating the L-Server, "false" is set.

Physical server name (*1, *2, *5) (PhysicalServer name)	Physical server to allocate to the L-Server	Specify the physical server to allocate to the L-Server.

Element Name	Description	Remarks (Possible Values, Examples)
	If specified at the same time as server pool, priority is given to the specifications of the physical server.	
Server pool name (*1, *2, *5) (Pool name)	Resource pool that comprises the physical servers allocated to L-Servers	Specify the resource names of existing server pools. If there are server pools with the same name on different levels, the level must also be specified. *Resource_folder*/*Resource_pool*
Reserve setting server pool name (*1, *2) (Pool name)	Server pool for reserve settings (optional)	Valid when redundancy has been configured. If there are server pools with the same name on different levels, the level must also be specified. *Resource_folder/Resource_pool*

Allocation of resources
 	
(Allocation)
	Status of resources allocated to the L-Server
	
	(optional)
		- true
		
		  Specify to allocate resources.
		
		- false
		
		  Only specify when creating a configuration definition.
		
		If this attribute is omitted, the value set in the definition file is used.
		For details on the definition file, refer to "11.8.1 Installation" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

Computer name, hostname (*2, *6) (ComputerName)	Computer name and hostname	[Windows/Linux] For specifiable values, refer to "D.7.3 [OS] Tab Configuration" in the "Setup Guide CE".

*1: Values can be changed by modifying an L-Server, only when its status is "allocated" (resources have been allocated) or "preserved" (servers have been released). Even if an L-Server template name or the content of an L-Server template specified for the L-Server template name is modified, the configuration of L-Servers already created using the template will not be modified.

*2: Values can be changed by modifying an L-Server, only when its status is "defined" (only the configuration definition has been created). When modifying an L-Server for which only the configuration definition has been created, unmodified information must be described also.

*3: In addition to *1, the value can be changed during power off.

*4: Specify if no L-Server template is used or if the values specified in the L-Server template will not be used.

*5: This cannot be changed when the L-Server is being linked to a configured physical server.

*6: Personalizing information to be specified after the image is deployed.

📝 Example

- Creating an L-Server that does not deploy a cloning image using an L-Server template

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="first_server">
    <TemplateLink name="small"/>
    <ServerType>Physical</ServerType>
    <Model>PRIMERGY BX920 S2</Model>
    <NICs>
      <NIC>
        <NICIndex>0</NICIndex>
```

```
            <NetworkLinks>
             <NetworkLink name="AdminLan" vlan_mode="untagged"
index="0"/>
            </NetworkLinks>
          </NIC>
       </NICs>
       <IOVirtualOptionPool auto="true" name="AddressPool"/>
     </LServer>
</Resources>
```

- Creating an L-Server that deploys a cloning image using an L-Server template

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
   <LServer name="second_server">
     <TemplateLink name="small"/>
     <ServerType>Physical</ServerType>
     <Model>PRIMERGY BX920 S2</Model>
     <ServerImageLink name="/ImagePool/master_image"/>
     <NICs>
       <NIC>
         <NICIndex>0</NICIndex>
           <NetworkLinks>
            <NetworkLink name="AdminLan" vlan_mode="untagged"
index="0"/>
           </NetworkLinks>
       </NIC>
     </NICs>
     <IOVirtualOptionPool auto="true" name="AddressPool"/>
     <OSSetting>
       <ComputerName>host1</ComputerName>
     </OSSetting>
   </LServer>
</Resources>
```

- Creating an L-Server that deploys a Linux cloning image without using an L-Server template

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
   <LServer name="L-Server">
     <ServerImageLink name="/ImagePool/RHEL5"/>
     <ServerType>Physical</ServerType>
     <Model>PRIMERGY BX920 S2</Model>
     <BootType>Disk</BootType>
     <Disks>
       <Disk>
         <DiskIndex>0</DiskIndex>
         <DiskSize>40.0</DiskSize>
       </Disk>
       <Disk>
         <DiskIndex>1</DiskIndex>
         <DiskSize>30.0</DiskSize>
       </Disk>
     </Disks>
     <NICs>
       <NIC>
         <NICIndex>0</NICIndex>
           <NetworkLinks>
            <NetworkLink name="AdminLan" vlan_mode="untagged"
index="0"/>
           </NetworkLinks>
       </NIC>
```

```
        </NICs>
        <IOVirtualOptionPool auto="true" name="AddressPool"/>
        <HBAs>
          <HBA>
            <HBAIndex>0</HBAIndex>
          </HBA>
        </HBAs>
        <IOVirtualOptionPool auto="true" />
        <Policy>
          <Redundancy>None</Redundancy>
          <Priority>128</Priority>
        </Policy>
        <Repurpose>true</Repurpose>
        <Allocation>true</Allocation>
        <OSSetting>
          <ComputerName>host1</ComputerName>
        </OSSetting>
      </LServer>
  </Resources>
```

- Creating an L-Server in a resource folder or a tenant folder

```
<?xml version="1.0" encoding="utf-8"?>
<Folder name="Resource Folder Name or Tenant Folder Name">
  <LServer name="L-Server Name" label="Label">
    ...
  </L-Server>
</Folder>
```

Table 2.4 List of Items Specified in XML Definitions when Creating an L-Server in a Resource Folder or a Tenant Folder

Element Name	Description	Remarks (Possible Values, Examples)
Resource folder name or Tenant folder name (*1) (Folder name)	Name of the resource folder or the tenant folder to place the L-Server in (optional)	To specify the level, use the following format: *Resource_folder_name*/*Resource_folder_name* *Tenant_folder_name*/*Resource_folder_name* *Resource_folder_name*/*Tenant_folder_name*

*1: Specify if creating an L-Server in a resource folder.

- Creating another L-Server using detailed L-Server information

  Modify the following information.

  - Modify the name attribute of the LServer element

  - Delete the name attribute of the DiskLink and Disk elements (If an existing LUN is allocated, modify the name attribute)

    If none of these elements exist, add them.

  - Modify the MacAddress, IpAddress, and WWN elements (If specifying an address pool for address assignment, or resources)

    If none of these elements exist, add them as necessary.

  - Modify the PhysicalServer element in the From or Spare element (If the elements are specified)

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
<LServer name="P-Server2" id="WIN-66N8JTJM2BD_2853" label="">
  <Comment></Comment>
  <ServerType>Physical</ServerType>
  <Model>PRIMERGY BX920 S1</Model>
  <CPU>
```

```
        <CPUArch>ia32</CPUArch>
        <CPUPerf>2.0</CPUPerf>
        <NumOfCPU>0</NumOfCPU>
    </CPU>
    <Memory>
        <MemorySize>0.0</MemorySize>
    </Memory>
    <BootType>Disk</BootType>
    <Disks>
        <Disk name="P-Server2-0-disk0">
          <DiskIndex>0</DiskIndex>
          <DiskSize>20.0</DiskSize>
        </Disk>
    </Disks>
    <NICGroups>
    </NICGroups>
    <NICs>
      <NIC>
        <NICIndex>0</NICIndex>
        <MacAddress auto="true" from="mac_address_set"/>
        <NetworkLinks>
            <NetworkLink name="admin_lan" index="0"
vlan_mode="untagged">
              <IpAddress auto="true"/>
            </NetworkLink>
        </NetworkLinks>
      </NIC>
    </NICs>
    <HBAs>
      <HBA>
        <HBAIndex>0</HBAIndex>
        <WWN auto="true" pool="/AddressPool" />
      </HBA>
    </HBAs>
    <ExternalIdentifier></ExternalIdentifier>
    <Current>
      <PhysicalServer name="chassis4-2"
id="WIN-66N8JTJM2BD_83" />
    </Current>
    <ExternalProfile/>
    <Policy>
      <Redundancy>None</Redundancy>
      <Positioning>Fixed</Positioning>
      <Exclusion></Exclusion>
      <Priority>128</Priority>
      <Repurpose>false</Repurpose>
    </Policy>
    <Status>
      <ResourceStatus>stop</ResourceStatus>
      <PowerStatus>off</PowerStatus>
      <AllocationStatus>attached</AllocationStatus>
      <MaintenanceMode>active</MaintenanceMode>
      <Resources>allocated</Resources>
      <ServerAllocationStatus>true</ServerAllocationStatus>
      <DiskAllocationStatus>false</DiskAllocationStatus>
      <AddressAllocationStatus>true</AddressAllocationStatus>
    </Status>
    <From>
      <PhysicalServer name="chassis4-2"
id="WIN-66N8JTJM2BD_83" />
    </From>
    <Spare>
```

```
        </Spare>
  </LServer>
  </Resources>
```

··

2.3.2 Definition Information for Virtual L-Servers (XML)

This section explains the XML definitions of virtual L-Servers.

To specify the level, change the Resources element to the Folder element.
Refer to "Example Creating an L-Server in a resource folder or a tenant folder".

The XML definition for a virtual L-Server is shown below.

```xml
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server Name" label="Label">
    <Comment>Comment</Comment>
    <TemplateLink name="L-Server Template Name"/>
    <ServerImageLink name="Image Name" version="Image Version"/>
    <ServerType>Server Type</ServerType>
    <VMType>VM Type</VMType>
    <OSType>OS Type</OSType>
    <CPU>
      <CPUArch>CPU Architecture</CPUArch>
      <CPUPerf>CPU Performance</CPUPerf>
      <NumOfCPU>Number of CPUs</NumOfCPU>
      <CPUReserve>CPU Reservation Performance</CPUReserve>
      <CPUShare>CPU Shares</CPUShare>
      <CPUWeight>CPU Allocation Priority</CPUWeight>
    </CPU>
    <Memory>
      <MemorySize>Memory Size</MemorySize>
      <MemoryReserve>Memory Reservation Capacity</MemoryReserve>
      <MemoryShare>Memory Shares</MemoryShare>
      <DynamicMemory>Dynamic Memory Settings</DynamicMemory>
      <StartupRAM>Initial Memory Size</StartupRAM>
      <MemoryBuffer>Memory Buffer</MemoryBuffer>
      <MemoryWeight>Memory Allocation Priority</MemoryWeight>
    </Memory>
    <Disks>
      <Disk name="Disk Name">
        <DiskIndex>Disk Index</DiskIndex>
        <DiskLink name="Name of the disk created in advance"> or
        <DiskCopy name="Source disk name to copy">
        <DiskSize>Disk Size</DiskSize>
          <Exist>Existing Disk</Exist>
        <From auto="Automatic selection of storage for use">
          <VirtualStorage name="Virtual Storage Resource Name"/>
          <Pool name="Storage Pool Name"/>
        </From>
      </Disk>
    </Disks>
    <NICs>
      <NIC>
        <NICIndex>NIC Index</NICIndex>
        <NetworkLinks>
          <NetworkLink name="Network_name" index="Network_index">
            <IpAddress auto="Automatic IP Configuration" address="IP address"/>
          </NetworkLink>
        </NetworkLinks>
        <MacAddress auto="MAC Address Auto Select" Address Set Resource of MAC Address or Address
Pool/>
```

```
            </NIC>
        </NICs>
      <Policy>
        <Redundancy>Redundancy</Redundancy>
        <Positioning>Positioning</Positioning>
        <Exclusion>Exclusion</Exclusion>
        <Priority>Priority</Priority>
        <Repurpose>Server Automatic Release(true|false)</Repurpose>
        <OverCommit>Enabling/Disabling Overcommit</OverCommit>
        <AliveMonitoring>AliveMonitoring Setting(true|false)</AliveMonitoring>
      </Policy>
      <From keep="Retention of a Used Server" auto="Automatic Selection of a Used Server">
        <VmHost name="VM Host Resource Name"/>
        <Pool name="VM Pool Name"/>
      </From>
      <Allocation>Allocation of Resources</Allocation>
      <OSSetting>
        <ComputerName>Computer Name, Hostname</ComputerName>
        <FullName>Full Name</FullName>
        <ProductKey>Product Key</ProductKey>
        <AdminPassword>Administrator Password</AdminPassword>
        <CAL>License Mode</CAL>
        <CALMaxConnection>Maximum Number of Connections</CALMaxConnection>
        <OrganizationName>Organization Name</OrganizationName>
        <DomainName>Domain Name</DomainName>
        <DNSSearchPaths>
          <DNSSearchPath>DNS Search Path</DNSSearchPath>
          <DNSSearchPath>DNS Search Path</DNSSearchPath>
        </DNSSearchPaths>
        <DNSServers>
          <DNSServer nic="NIC Index" ip="DNS IP Address" />
          <DNSServer nic="NIC Index" ip="DNS IP Address" />
        </DNSServers>
        <TimeZone>Time Zone</TimeZone>
        <HardwareClock>Hardware Clock Configuration</HardwareClock>
      </OSSetting>
    </LServer>
  </Resources>
```

Table 2.5 List of Items Specified in XML Definitions for Virtual L-Servers

Element Name	Description	Remarks (Possible Values, Examples)
L-Server name (*1, *2) (LServer name)	Name of the L-Server	Enter a name for the L-Server. For details on the characters and the number of characters which can be specified, refer to "10.3.1 [General] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". [VMware] The value can be changed even when the L-Server is powered on.
Label (*1, *2) (LServer label)	Label for the L-Server (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (*1, *2) (Comment)	Comment for the L-Server (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
L-Server template name (*2) (TemplateLink name)	Name of the L-Server template to use for the L-Server (optional)	Specify the resource name of an existing L-Server template.

Element Name	Description	Remarks (Possible Values, Examples)
Image name (*2) (ServerImageLink name)	Name of the cloning image to deploy to the L-Server's boot disk (optional)	Specify the resource name of an existing cloning image. Specify using a name containing a resource folder. For details, refer to "10.1 Creation Using an L-Server Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Image version (*2) (ServerImageLink version)	Version of the cloning image to deploy to the L-Server's boot disk (optional)	Specify an integer. If omitted, the latest version is used.
Server type (*3) (ServerType)	Type of server to allocate as an L-Server	Specify "Virtual".
VM type (*2, *3) (VMType)	Type of VM to allocate as an L-Server	- VMware - Hyper-V - RHEL-Xen - RHEL-KVM - Oracle VM
OS type (*1, *2) (OSType)	Type of OS for the L-Server This setting can be omitted if an image is specified.	[VMware] For the values that can be set, refer to the information displayed on the GUI, or the values described in the "NAME" column of the VMware web site. For environments where both vSphere4 and vSphere5 exist, specify the value described on the VMware Web site (*4) for the "NAME" column. [Hyper-V] For the possible values that can be set, refer to the information displayed on the GUI, or the Name of the operating system object that can be obtained from SCVMM. This information can be obtained using Get-OperatingSystem(System Center Virtual Machine Manager 2008 R2) o Get-SCOperatingSystem(System Center 2012 Virtual Machine Manager) Cmdlet. The value can be changed even when the L-Server is powered on. [KVM] The value can be changed even when the L-Server is powered on. [Xen] Specify Linux.
CPU architecture (*3) (CPUArch)	CPU architecture of the server to allocate to the L-Server (optional)	Specify IA. If omitted, IA is set.
CPU performance (*1, *2, *3, *13) (CPUPerf)	CPU performance to allocate to L-Server	Specify a number with up to one decimal place, in units of gigahertz. For details on the scope which can be specified, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". [VMware] [Hyper-V] [KVM] The value can be changed even when the L-Server is powered on. [Xen] Specify a value "0.1" or larger.

Element Name	Description	Remarks (Possible Values, Examples)
Number of CPUs (*1, *2, *3, *13) (NumOfCPU)	Number of CPUs to allocate to L-Server	Specify an integer equal to or greater than "1". For details on the scope which can be specified, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". [VMware] When the CPU hot plug option of VM guests is enabled, the value can be added when the L-Server is powered on. [Xen] Specify a value "1" or larger.

CPU reservation performance (*1, *2, *5, *6, *7, *8)
 	
 (CPUReserve)
	The minimum number of CPU resources to be allocated to an L-Server
	
	 (optional)
		Specify a number with up to one decimal place, in units of gigahertz.
		
		 Specify a value in the range from "0" to the upper limit of the CPU performance.
		 If left blank, the values will differ when creating or modifying the L-Server.
		
		   - When creating
		
		     "0" is set.
		
		   - When modifying
		
		     The current value of the L-Server is retained.
		
		 Enabled when VM type is set to "VMware" or "Hyper-V".
		
		 The value can be changed even when the L-Server is powered on.

CPU shares (*1, *2, *5, *6, *7)
 	
 (CPUShare)
	The relative proportion for allocation of CPU resources on an L-Server
	
	 (optional)
		Specify an integer equal to or greater than "1". (*9)
		
		 If left blank, the values will differ when creating or modifying the L-Server.
		
		   - When creating
		
		     A number determined by multiplying the value specified for Number of CPUs by 1,000 is set.
		
		   - When modifying
		
		     The current value of the L-Server is retained.
		
		 Enabled when VM type is set to "VMware".
		
		 The value can be changed even when the L-Server is powered on.

CPU allocation priority (*1, *2, *8)
 	
 (CPUWeight)
	CPU allocation priority
	
	 (optional)
		Specify the priority for CPU allocation.
		
		 Specify an integer between 1 and 10,000.
		
		 If left blank, the values will differ when creating or modifying the L-Server.
		
		   - When creating
		
		     "100" is set.
		
		   - When modifying
		
		     The current value of the L-Server is retained.
		
		 Enabled when VM type is set to "Hyper-V".
		
		 The value can be changed even when the L-Server is powered on.

Memory size (*1, *2, *3, *13)	Size of memory to allocate to L-Server	Specify a number with up to one decimal place, in units of gigabytes.

Element Name	Description	Remarks (Possible Values, Examples)
(MemorySize)		For details on the scope which can be specified, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". [VMware] When the memory hot add option of VM guests is enabled, the value can be added when the L-Server is powered on. [KVM] The value can be changed even when the L-Server is powered on. [Xen] Specify a value "0.1" or larger.

Memory reservation capacity (*1, *2, *5, *6, *7)
 	
(MemoryReserve)
	The minimum amount of memory resources to be reserved for an L-Server
	
	(optional)
		Specify a number with up to one decimal place, in units of gigabytes.
		
		Specify a value in the range from "0" to the upper limit of Memory Size. If left blank, the values will differ when creating or modifying the L-Server.
		
		- When creating
		
		  The value specified for memory size is set. (*10)
		
		- When modifying
		
		  The current value of the L-Server is retained.
		
		Enabled when VM type is set to "VMware".
		
		The value can be changed even when the L-Server is powered on.

Memory shares (*1, *2, *5, *6, *7)
 	
(MemoryShare)
	The relative proportion for allocation of memory resources on an L-Server
	
	(optional)
		Specify an integer equal to or greater than "0". (*9)
		
		If left blank, the values will differ when creating or modifying the L-Server.
		
		- When creating
		
		  A number determined by multiplying the value specified for Memory Size by 1024 by 10 is set.
		
		- When modifying
		
		  The current value of the L-Server is retained.
		
		Enabled when VM type is set to "VMware".
		
		The value can be changed even when the L-Server is powered on.

Dynamic memory settings (*1, *2, *8)
 	
(DynamicMemory)
	Dynamic memory settings
	
	(optional)
		Set enabling/disabling of dynamic memory.
		
		- When enabling dynamic memory
		
		  Specify "true".
		
		- When disabling dynamic memory
		
		  Specify "false".
		
		If left blank, the values will differ when creating or modifying the L-Server.
		
		- When creating
		
		  - If Initial Memory Size or Memory Buffer is already set
		
		    "true" is set.
		
		  - If Initial Memory Size or Memory Buffer is not set
		
		    "false" is set.

Element Name	Description	Remarks (Possible Values, Examples)
		Even when the initial memory size and memory buffer are not specified in the L-Server XML file, if they are defined in the L-Server template or VM unique information definition file those values will be reflected on the L-Server. Therefore, the values of dynamic memory are configured depending on the values. - When modifying The current value of the L-Server is retained. If dynamic memory is disabled when creating or modifying an L-Server, the specified values for the initial memory size and memory buffer are ignored (including any existing setting values). Enabled when VM type is set to "Hyper-V". For the GUI and command (in text format) operations, "on" is displayed to indicate the enabled status and "off" for the disabled status.

Initial memory size (*1, *2, *8)
 	
(StartupRAM)
	Initial memory size	Specify an initial memory capacity to be allocated at startup.
		
		Specify the memory capacity in the range of 0.1 to the value specified for Memory size.
		When specifying this element, either specify "true" to enable dynamic memory or leave the dynamic memory settings blank (this includes the L-Server template and the VM unique information definition file). If dynamic memory is disabled, the specified value is ignored.
		If left blank, the values will differ when creating or modifying the L-Server.
		
		- When creating
		
		   Memory size is set.
		
		- When modifying
		
		   The current value of the L-Server is retained.
		
		Enabled when VM type is set to "Hyper-V".

Memory buffer (*1, *2, *8)
 	
(MemoryBuffer)
	Available memory to be reserved as a buffer (%)
	
	(optional)
		Specify an initial memory capacity to be allocated to the virtual machine.
		
		Specify an integer between 5 and 2,000.
		When specifying this element, either specify "true" to enable dynamic memory or leave the dynamic memory settings blank (this includes the L-Server template and the VM unique information definition file). If dynamic memory is disabled, the specified value is ignored.
		If left blank, the values will differ when creating or modifying the L-Server.
		
		- When creating
		
		   "20" is set.
		
		- When modifying
		
		   The current value of the L-Server is retained.
		
		Enabled when VM type is set to "Hyper-V".
		
		The value can be changed even when the L-Server is powered on.

Memory allocation priority (*1, *2, *8) (MemoryWeight)	Memory allocation priority (optional)	Specify the priority for memory allocation. Specify an integer between 0 and 10,000. If left blank, the values will differ when creating or modifying the L-Server.

Element Name	Description	Remarks (Possible Values, Examples)

		- When creating
		
		  "5,000" is set.
		
		- When modifying
		
		  The current value of the L-Server is retained.
		
		Enabled when VM type is set to "Hyper-V".
		
		The value can be changed even when the L-Server is powered on.

Disk name (*2)
 	
(Disk name)
	The disk name to allocate to L-Servers
	
	(optional)
		Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). If omitted, a name is automatically generated.
		
		When specifying a disk which was created in advance or a disk which was automatically created and saved, do not specify the same name as those of the disks.
		
		In the following cases, the value is ignored.
		
		- When the specified disk name is different from the name of a disk which was either created in advance or automatically created and saved
		
		- When the VM type is "RHEL-KVM" and the following are specified for the disk:
		
		  - Existing Disk
		
		  - Disk Size

Disk index (*2, *3) (DiskIndex)	Number of the disk to allocate to the L-Server	Specify an integer starting from "0". 0: Boot disk Other than 0: Data disk [VMware] Specify a number between 0 and 55. [Hyper-V] Specify a number between 0 and 59. [Xen] Specify a number between 0 and 251. [RHEL-KVM] Specify a number between 0 and 16. [Oracle VM] When the L-Server is an HVM (Hardware Virtualized Machine), specify a number between 0 and 7. When the L-Server is a PVM (Para-Virtualized Machine), specify a number between 0 and 59.

Name of the disk created in advance (*2)
 	
(DiskLink name)
	The name of a disk created in advance for allocation to the L-Server
	
	(optional)
		Specify a disk which already exists.
		
		When the VM type is "RHEL-Xen", "RHEL-KVM", or "Hyper-V", the disk name can be specified.
		
		- For "RHEL-Xen"
		
		  This element cannot be specified, for disks with the number "0". The name of the source disk to be copied cannot be specified at the same time.
		  For an L-Server, a single disk created in advance cannot be specified multiple times.

Element Name	Description	Remarks (Possible Values, Examples)
		When specifying the name at the same time as the disk size, the disk size for the disk name created in advance is reflected on the new disk.
		- For "RHEL-KVM" For an L-Server, a single disk created in advance cannot be specified multiple times. Disk size cannot be specified at the same time.
		- For "Hyper-V" This element cannot be specified, for disks with the number "0". For an L-Server, a single disk cannot be specified multiple times. Disks being used by other L-Servers cannot be specified. When specifying the name at the same time as the disk size, the disk size for the disk name automatically created and saved is reflected on the new disk.
Existing disk (*2) (Exist)	Specifies that the disk to allocate to the L-Server was a virtual disk created in advance using storage management software (optional)	- true Specify when selecting a disk automatically from virtual disks created using storage management software. The selected disk has the same size as specified using the Disk Size element. If the VM type is RHEL-KVM, this value must be specified when allocating a disk to an L-Server with disk size specified.
Source disk name to copy (*3) (DiskCopy name)	Data disk name of the source to copy the content from (optional)	Specify the disk name of the source data disk to copy the content from. When the VM type is "RHEL-Xen", the disk name can be specified. This element cannot be specified, for disks with the number "0". The name of a disk created in advance cannot be specified at the same time. When specifying the name at the same time as the disk size, the disk size for the disk name of the source to be copied is reflected to the new disk.
Disk size (*2, *3) (DiskSize)	Size of disk to create	Specify a number with up to one decimal place, in units of gigabytes. For details on the scope which can be specified, refer to "10.3.3 [Disk] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". The disk size can be omitted when specifying the name of a disk created in advance at the same time. The disk name information created in advance is given priority when a disk name created in advance is specified at the same time. For L-Servers, the disk size can be omitted when specifying a disk name created in advance or the disk name of the source to be copied at the same time. The information of the disk name created in advance or the name of the source disk to be copied is given priority when the information is specified at the same time. [Xen] Specify a number between 0.1 and 999.9.
Automatic selection of storage to use (*2) (From auto)	Automatically selects the storage destination used for an L-Server (optional)	- true Specify to automatically select the resource destination. - false Specify to not automatically select resources. If omitted, the resource is automatically selected if "*Virtual storage resource name*" or "*Storage pool name*" is not specified.

Element Name	Description	Remarks (Possible Values, Examples)
Virtual storage resource name (*2) (VirtualStorage name)	Virtual storage from which the disk to allocate to the L-Server is created If specified at the same time as storage pool, priority is given to this attribute. (optional)	Specify the resource name of an existing virtual storage. [Hyper-V] When specifying this element, specify the same virtual storage for all disks.
Storage pool name (*2) (Pool name)	Resource pool for extracting the virtual storage to create the disk to allocate to the L-Server (optional)	Specify the resource name of an existing storage pool. If there are storage pools with the same name on different levels, the level must also be specified. *Resource_folder*/*Resource_pool* [Hyper-V] When specifying this element, specify the same storage pool for all disks.
NIC index (*2) (NICIndex)	Number to identify the NIC definition to allocate to the L-Server	Specify an integer starting from "0". NIC number (NICIndex) + 1 corresponds to a network (NIC) number of the [General] tab in the [Create an L-Server] dialog. [VMware] Specify a number between 0 and 9. [Hyper-V] Specify a number between 0 and 7. [KVM] Specify a number between 0 and 7. [Xen] Specify a number between 0 and 14. [RHEL-KVM] Specify a number between 0 and 7. [Oracle VM] Specify a number between 0 and 7.
Network name (*2) (NetworkLink name)	Name of the network that the L-Server connects to	Specify the name of an existing network resource.
Network index (NetworkLink index)	Network index	Specify "0" for the network index. When creating L-Servers, this attribute can be omitted. When modifying L-Server specifications, this attribute must be specified.
MAC address (MacAddress)	The MAC address to allocate to the L-Server NIC	The MAC address can be specified using the following methods: <MacAddress auto="true" from="*Address Set Resource*(*MAC Address*)"/> or <MacAddress auto="true" pool="*Address Pool*"/> or <MacAddress auto="true"/> An address in the MAC address range set in the MACAddressSetResource, or the MAC address range registered in the specified address pool, or the MAC address range registered in accessible address pools will automatically be allocated. When address set resource and address pool are specified at the same time, the address set resource has priority.

Element Name	Description	Remarks (Possible Values, Examples)
		- When the VM type is "RHEL-Xen" Ensure address set resources are specified. - When the VM type is "RHEL-KVM" The address set resources can be omitted. When omitted, the Mac address is automatically allocated from the MAC address range registered in accessible address pools. When modifying an L-Server that only has configuration definition created, NIC cannot be changed. Therefore, do not specify the MacAddress element.
IP address (*2) (IpAddress)	IP address to allocate to L-Servers (optional)	The IP can be specified using the following methods: <IpAddress auto="false" address="*xxx.xxx.xxx.xxx*"/> Specify an IP address. <IpAddress auto="true"/> An IP address is automatically assigned from the address range set for the network resource. Even if the IpAddress element is omitted, an IP address is automatically assigned from the address range set for the network resource.
Redundancy (*1, *2, *3) (Redundancy)	Server redundancy to allocate to L-Servers (optional)	- None No redundancy - HA Places in a server with HA set If omitted, "None" is set. For details on the redundancy, refer to "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". When "RHEL-Xen" or "RHEL-KVM" has been specified for the VM type, only "None" can be specified.
Positioning (*1, *2, *3) (Positioning)	Physical location of the server to allocate to L-Servers (optional)	- Fixed Fixed physical position - AttachAtBoot Position changes upon startup If omitted, "Fixed" is set. When "RHEL-Xen" has been specified for the VM type, only "Fixed" can be specified.
Exclusion (*1, *2) (Exclusion)	Exclusive operation with another virtual machine on a physical server (optional)	Specify the *L-Server_name* or the *Resource_folder_name*. To specify L-Server names or resource folder names that are arranged in a hierarchy, the level must also be specified. */Folder1/Folder2* */Folder1/L-Server3* Specify resources included in the access scope.
Priority (*1, *2) (Priority)	Priority when allocating resources or creating an L-Server (optional)	When the L-Server is the target of batch power operations, or when performing batch creation of multiple L-Servers using XMLs of resource folders, specify the priority in the range of 1 to 256. Smaller values indicate higher priority. If omitted, "128" is set. When "0" is specified, the server is excluded from batch power

Element Name	Description	Remarks (Possible Values, Examples)
		operations. If a VM type other than "RHEL-Xen" is specified, L-Servers are created depending on the priority which has been specified.

Server automatic release (*1, *2)
 	
(Repurpose)
	Automatic release of servers during power off
	
	(optional)
		Specify whether to automatically release the servers allocated to the L-Server, when they are powered off.
		
		  - When using automatic release
		
		    Specify "true".
		
		  - When not using automatic release
		
		    Specify "false".
		
		If the values of this attribute and "*Server Automatic Release*" of the L-Server template are omitted, the value that is set in the definition file is used.
		For details on the definition file, refer to "11.8.1 Installation" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

Enabling/disabling overcommit (*1, *2)
 	
(OverCommit)
	Setting for overcommit
	
	(optional)
		Set enabling/disabling of overcommit.
		
		If left blank, "false" is set.
		
		  - When enabling overcommit
		
		    Specify "true".
		
		  - When disabling overcommit
		
		    Specify "false".

Alive monitoring settings (*1, *2, *3)
 	
(AliveMonitoring)
	Alive Monitoring Settings
	
	(optional)
		- When enabling alive monitoring
		
		    Specify "true"
		
		  - When disabling alive monitoring
		
		    Specify "false"
		
		If omitted and not specified when creating the L-Server, "false" is set.

Retention of a used server (*2)
 	
(From keep)
	Retains the server destination used for an L-Server
	
	(optional)
		- true
		
		    Specify when retaining the resource destination.
		
		  - false
		
		    Specify when not retaining the resource destination.
		
		If not specified, "true" is set.

Automatic selection of a used server(*2)
 	
(From auto)
	Automatically selects the server destination used for an L-Server
	
	(optional)
		- true
		
		    Specify to automatically select the resource destination.
		
		  - false
		
		    Specify to not automatically select resources.
		
		If omitted, when "VM host" or "VM pool name" is specified, the "VM host" or the "VM pool name" is given priority.
		
		When "VM host" or "VM pool name" is not specified, the resource is automatically selected.

VM host resource name (*1, *2) (VmHost name)	VM host to create the VM to allocate to the L-Server If specified at the same time	Specify the resource name of a registered VM host. If not retaining a server to use, this is valid only when allocating for the first time.

Element Name	Description	Remarks (Possible Values, Examples)
	as resource pool, priority is given to this attribute. (optional)	
VM pool name (*1, *2) (Pool name)	Resource pool to extract the VM host to create the VM to allocate to the L-Server from (optional)	Specify the resource name of a registered VM pool. If there are VM pools with the same name on different levels, the level must also be specified. *Resource_folder/Resource_pool* If not retaining a server to use, this is valid only when allocating for the first time.

Allocation of resources
 	
(Allocation)
	Status of resources allocated to the L-Server
	
	(optional)
		- true
		
		   Specify to allocate resources.
		
		- false
		
		   Only specify when creating a configuration definition.
		
		If this attribute is omitted, the value set in the definition file is used. For details on the definition file, refer to "11.8.1 Installation" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

Computer name, hostname (*2, *11) (ComputerName)	Computer name and hostname	[VMware] For specifiable values, refer to "E.2.5 Setup" in the "Setup Guide CE". [Hyper-V] For specifiable values, refer to "E.3.4 Setup" in the "Setup Guide CE". [Xen] Only host name can be specified.
Full name (*2, *11) (FullName)	Full name used for Windows	
Product key (*2, *11) (ProductKey)	Windows product key	
Administrator password (*2, *11) (AdminPassword)	Administrator password used for Windows	
License mode (*2, *11) (CAL)	Client access license set for Windows	[VMware] For specifiable values, refer to "E.2.5 Setup" in the "Setup Guide CE".
Maximum number of connections (*2, *11) (CALMaxConnection)	Number of client connections set for Windows	[Hyper-V] For specifiable values, refer to "E.3.4 Setup" in the "Setup Guide CE".
Organization name (*2, *11) (OrganizationName)	Organization name used for Windows	
Domain name (*2, *11) (DomainName)	Domain name used for the OS	
DNS search path (*2, *11) (DNSSearchPath)	DNS search path used for Linux	To specify multiple values, use multiple elements. <DNSSearchPaths> <DNSSearchPath>DNS Search Path1</DNSSearchPath>

Element Name	Description	Remarks (Possible Values, Examples)
		<DNSSearchPath>DNS Search Path2</DNSSearchPath> </DNSSearchPaths> [VMware] For specifiable values, refer to "E.2.5 Setup" in the "Setup Guide CE". [Hyper-V] For specifiable values, refer to "E.3.4 Setup" in the "Setup Guide CE".

NIC index (*2, *11)
 	
(DNSServer nic)
	NIC index used to set the DNS	Specify the NIC index used to set the DNS IP address.
		
		- When the OS is Windows
		  This index is required.
		- When the OS is Linux
		  Do not specify any nic attributes.
		
		Specify a number between 0 and 9.

DNS IP address (*2, *11)
 	
(DNSServer ip)
	DNS IP address	- When the OS is Windows
		  Specify the DNS IP address to set for each NIC.
		- When the OS is Linux
		  Specify the DNS IP address to set for the system.

Time zone (*2, *11)
 	
(TimeZone)
	Time zone for the OS	- For the time zones that can be specified using Windows, refer to the Microsoft web site. (*12)
		Convert the value from the "Index" column to a decimal, or specify a value from the "Time" column.
		
		- Examples of the time zones that can be specified using Linux are listed below. To specify other time zones, refer to the information displayed using commands provided by the OS such as timeconfig.
		  - Asia/Tokyo
		  - US/Pacific
		  - US/Central
		  - US/Eastern
		  - Europe/Berlin
		  - Europe/Amsterdam
		  - Europe/London
		  - Asia/Seoul
		  - Asia/Hong_Kong
		  - Australia/Canberra

Hardware clock configuration (*2, *11) (HardwareClock)	Clock configuration used for Linux	[VMware] For specifiable values, refer to "E.2.5 Setup" in the "Setup Guide CE". [Hyper-V] For specifiable values, refer to "E.3.4 Setup" in the "Setup Guide CE".

*1: Values that can be changed by modifying an L-Server. Even if an L-Server template name or the content of an L-Server template is modified, the configuration of L-Servers already created using the template will not be modified. Only change the OS type if no OS is installed.

*2: Values can be changed by modifying an L-Server, only when its status is "defined" (only the configuration definition has been created). When modifying an L-Server for which only the configuration definition has been created, unmodified information must be described also.

*3: Specify if no L-Server template is used or if the values specified in the L-Server template will not be used.

*4: For details on the possible values, refer to the VMware web site below.

VMware web site

```
URL:
http://www.vmware.com/support/developer/vc-sdk/visdk400pubs/ReferenceGuide/
vim.vm.GuestOsDescriptor.GuestOsIdentifier.html (As of February 2012)
```

*5: The value can be modified using the rcxadm lserver modify command. For details on the rcxadm lserver modify command, refer to "1.3.1 rcxadm lserver".

*6: For VMware, the value can be changed.

*7: When the VM type of an L-Server is VMware, the specified value is reflected.

*8: When the VM type of an L-Server is Hyper-V, the specified value is reflected.

*9: For the values that can be specified, refer to the "vSphere Resource Management Guide" of VMware.

Refer to the relevant version of document, referring to the following URL:

```
URL: http://www.vmware.com/support/pubs/vs_pubs.html (As of February 2012)
```

*10: When omitted, the memory reservation capacity will be the same value as the value for the memory size, and the memory overcommit function will be disabled. When using the memory overcommit function, specify the value.

*11: Information to be specified individually after the image is deployed. Only specify if there is no OS property definition file or if you want to change the existing values. For Oracle VM, the values cannot be specified individually. If set, the value is ignored.

*12: Refer to the Microsoft web site below.

Microsoft web site

```
URL: http://support.microsoft.com/kb/973627/en-us/ (As of February 2012)
```

*13: If this is changed while the power is on, there may be cases where behavior is problematic or where the changes are not recognized.

Example

- Creating an L-Server that does not deploy a cloning image using an L-Server template

```xml
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="first_server">
    <TemplateLink name="small"/>
    <ServerType>Virtual</ServerType>
    <OSType>Red Hat Enterprise Linux 5 (32-bit)</OSType>
    <NICs>
      <NIC>
        <NICIndex>0</NICIndex>
          <NetworkLinks>
            <NetworkLink name="net01"/>
          </NetworkLinks>
      </NIC>
    </NICs>
  </LServer>
</Resources>
```

- Creating an L-Server that deploys a cloning image using an L-Server template (pre-configured OS property definition file)

```xml
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="second_server">
    <TemplateLink name="small"/>
```

```
        <ServerType>Virtual</ServerType>
        <ServerImageLink name="/ImagePool/master_image"/>
        <NICs>
          <NIC>
            <NICIndex>0</NICIndex>
              <NetworkLinks>
                <NetworkLink name="net01"/>
              </NetworkLinks>
          </NIC>
        </NICs>
        <OSSetting>
          <ComputerName>host2</ComputerName>
        </OSSetting>
      </LServer>
  </Resources>
```

- Creating an L-Server that deploys a Linux cloning image without using an L-Server template (pre-configured OS property definition file)

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server">
    <ServerImageLink name="/ImagePool/RHEL5"/>
    <ServerType>Virtual</ServerType>
    <CPU>
      <CPUPerf>1.0</CPUPerf>
      <NumOfCPU>1</NumOfCPU>
    </CPU>
    <Memory>
      <MemorySize>2</MemorySize>
    </Memory>
    <Disks>
      <Disk>
        <DiskIndex>0</DiskIndex>
        <DiskSize>20.0</DiskSize>
      </Disk>
      <Disk>
        <DiskIndex>1</DiskIndex>
        <DiskSize>30.0</DiskSize>
      </Disk>
    </Disks>
    <NICs>
      <NIC>
        <NICIndex>0</NICIndex>
        <NetworkLinks>
          <NetworkLink name="net01"/>
        </NetworkLinks>
      </NIC>
    </NICs>
    <Policy>
      <Redundancy>None</Redundancy>
      <Positioning>Fixed</Positioning>
    </Policy>
    <OSSetting>
      <ComputerName>host1</ComputerName>
      <DomainName>xx.zz.yy</DomainName>
      <DNSSearchPaths>
        <DNSSearchPath>10.20.30.40</DNSSearchPath>
      </DNSSearchPaths>
    </OSSetting>
  </LServer>
</Resources>
```

- Creating an L-Server in a resource folder or a tenant folder

```
<?xml version="1.0" encoding="utf-8"?>
<Folder name="Resource Folder Name or Tenant Folder Name">
  <LServer name="L-Server Name" label="Label">
    ...
  </LServer>
</Folder>
```

Table 2.6 List of Items Specified in XML Definitions when Creating an L-Server in a Resource Folder or a Tenant Folder

Element Name	Description	Remarks (Possible Values, Examples)
Resource folder name or Tenant folder name (*1) (Folder name)	Name of the resource folder or the tenant folder to place the L-Server in (optional)	To specify the level, use the following format: *Resource_folder_name*/*Resource_folder_name* *Tenant_folder_name*/*Resource_folder_name* *Resource_folder_name*/*Tenant_folder_name*

*1: Specify if creating an L-Server in a resource folder or a tenant folder.

- Creating an L-Server (with one NIC) on a specific host without deploying cloning images using an L-Server template (for RHEL-Xen)

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="first_server">
    <TemplateLink name="template1"/>
    <ServerType>Virtual</ServerType>
    <OSType>Linux</OSType>
    <NICs>
      <NIC>
        <NICIndex>0</NICIndex>
        <NetworkLinks>
          <NetworkLink name="net01"/>
        </NetworkLinks>
        <MacAddress auto="true" from="mac_address_set"/>
      </NIC>
    </NICs>
    <From>
      <VmHost name="vmhost1"/>
    </From>
  </LServer>
</Resources>
```

- Creating another L-Server using detailed L-Server information

  Modify the following information.

  - Modify the name attribute of the LServer element

  - Delete the DiskLink and MacAddress elements, and the name attribute of the Disk elements

  - Delete the IpAddress element and replace the NetworkLink element with an empty element tag

  - Add the OSSetting element

    When the name attribute of the NetworkLink element is left blank, add an appropriate network resource name.

  The following example is used to create an L-Server that has the same configuration as one already created, using the detailed information of the L-Server created with a Linux cloning image that has been deployed.

  When deploying a Windows cloning image, changes should be made referring to the XML definition shown above.

```xml
<?xml version="1.0" encoding="utf-8"?>
<Resources>
<LServer name="L-Server2" id="rctest_1220" label="">
  <Comment></Comment>
  <TemplateLink name="sample_small" id="rctest_23" />
  <ServerType>Virtual</ServerType>
  <VMType>VMware</VMType>
  <OSType>Red Hat Enterprise Linux 5 (32-bit)</OSType>
  <CPU>
    <CPUArch>IA</CPUArch>
    <CPUPerf>1.0</CPUPerf>
    <NumOfCPU>1</NumOfCPU>
  </CPU>
  <Memory>
    <MemorySize>1.0</MemorySize>
  </Memory>
  <Disks>
      <Disk>
        <DiskIndex>0</DiskIndex>
        <DiskSize>10.0</DiskSize>
      </Disk>
  </Disks>
  <NICs>
    <NIC>
      <NICIndex>0</NICIndex>
      <MacAddress>00:50:56:8c:0b:2e</MacAddress>
      <NetworkLinks>
        <NetworkLink name="vnet30" index="0" vlan_mode="tagged"
id="rctest_1123" >
          <IpAddress auto="true" address=""/>
        </NetworkLink>
      </NetworkLinks>
    </NIC>
  </NICs>
<ExternalIdentifier>42114bec-d26d-0c3d-c9aa-080a0c40d020</
ExternalIdentifier>
  <Current>
      <VmHost name="gekkou-pri" id="rctest_62" />
      <VmGuest name="L-Server1-75" id="rctest_1224" />
  </Current>
  <ExternalProfile/>
  <ServerImageLink name="/ImagePool/pool" version="1" id="rctest_132" />
  <Policy>
    <Redundancy>None</Redundancy>
    <Positioning>Fixed</Positioning>
    <Exclusion></Exclusion>
    <Priority>128</Priority>
    <Repurpose>false</Repurpose>
  </Policy>
  <Status>
    <ResourceStatus>stop</ResourceStatus>
    <PowerStatus>off</PowerStatus>
    <AllocationStatus>attached</AllocationStatus>
    <MaintenanceMode>active</MaintenanceMode>
    <Resources>allocated</Resources>
    <ServerAllocationStatus>true</ServerAllocationStatus>
    <DiskAllocationStatus>true</DiskAllocationStatus>
    <AddressAllocationStatus>true</AddressAllocationStatus>
  </Status>
  <OSSetting>
    <DNSSearchPaths>
      <DNSSearchPath>10.20.30.40</DNSSearchPath>
```

```
        </DNSSearchPaths>
      </OSSetting>
  </LServer>
  </Resources>
```

2.4 Storage Resources

This section explains the XML definitions of storage resources.

2.4.1 Disk Resources [KVM]

The XML definition of the disk resource configuration information for virtual L-Servers is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<Storage>
  <Pool name="Storage Pool Name"/>
  <VmHosts>
    <VmHost ip="VM Host IP Address">
      <Disks>
        <Disk name="Disk Name" path="RAW Device or Partition Path" size="Disk Size"/>
      </Disks>
    </VmHost>
    <VmHost ip="VM Host IP Address">
      <Disks>
        <Disk name="Disk Name" path="RAW Device or Partition Path" size="Disk Size"/>
      </Disks>
    </VmHost>
  </VmHosts>
</Storage>
```

Table 2.7 List of Items Specified in Disk Resource Configuration Information XML Definitions for Virtual L-Servers

Element Name	Description	Remarks (Possible Values, Examples)
Storage pool name (Pool name)	Storage pool name for disk registration	Specify the resource name of an existing storage pool. If there are storage pools with the same name on different levels, the level must also be specified. *Resource_folder/Resource_pool* When modifying the disk resource registration information for VM guest, the Pool element cannot be used.
VM host IP address (VmHost IP)	IP address of a VM host that recognizes the raw device or partition	Specify the IP address.
Disk name (Disk name)	Disk name to register in the storage pool	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). When specifying a raw device or partition shared between multiple VM hosts, the same name must be used.
Raw device or partition path (Disk path)	Raw device or partition path	Specify the path to a raw device or partition that is connected to a VM guest. The path for the raw device or partition differs depending on the VM host. For details, refer to the instruction manual of the VM host.

Element Name	Description	Remarks (Possible Values, Examples)
		📋 **Example** .... /dev/disk/by-id/scsi-3600000e00d0000000001321300010000 .... When specifying a raw device or partition shared between multiple VM hosts, specify as many VmHost elements as there are VM hosts.
Disk size (Disk size)	Disk size to register in the storage pool	Specify a number with up to one decimal place, in units of gigabytes. For details on the scope which can be specified, refer to "10.3.3 [Disk] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

📋 **Example**

....

```
<?xml version="1.0" encoding="utf-8"?>
<Storage>
  <Pool name="StoragePool"/>
  <VmHosts>
    <VmHost ip="192.168.0.100">
      <Disks>
        <Disk name="test4-0-disk0" path="/dev/disk/by-id/aaaa" size="10.1"/>
      </Disks>
    </VmHost>
    <VmHost ip="192.168.0.101">
      <Disks>
        <Disk name="test4-0-disk0" path="/dev/disk/by-id/bbbb" size="10.1"/>
      </Disks>
    </VmHost>
  </VmHosts>
</Storage>
```

....

2.4.2 iSCSI Boot Information

The XML definition of the iSCSI boot information is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<Storage>
  <Pool name="Storage Pool Name"/>
  <Ports>
   <Port index="Storage Port Index Number" ip="IP Address[:iSCSI Communication Port Number]"
iqn="IQN Name"/>
   <Port index="Storage Port Index Number" ip="IP Address[:iSCSI Communication Port Number]"
iqn="IQN Name"/>
  </Ports>
  <Disks>
   <Disk name="Disk Name">
    <DiskSize>Disk Size</DiskSize>
    <Server>
     <Nics>
      <Nic ip="Server IP Address" iqn="Server IQN Name" portindex="Storage port Index number
connected from server"/>
      <Nic ip="Server IP Address" iqn="Server IQN Name" portindex="Storage port Index number
connected from server"/>
     </Nics>
     <Chap user="User Name Authentication" password="Authentication Password"/>
     <MutualChap password="Mutual Authentication Password"/>
```

```
      </Server>
    </Disk>
    <Disk name="Disk Name">
      ...
    </Disk>
  </Disks>
 </Storage>
```

Table 2.8 List of Items Specified in XML Definitions for iSCSI Boot Information

Element Name	Description	Remarks (Possible Values, Examples)
Storage pool name (Pool name)	Storage pool name for disk registration	Specify the resource name of an existing storage pool. If there are storage pools with the same name on different levels, the level must also be specified. *Resource_folder_name*/*Resource_pool_name*
Storage port index number (*1) (Port index)	Index number to specify the storage port	Specify an integer starting from "0". Specify a number between 0 and 999. Smaller index numbers are managed on the primary side of iSCSI boot.
Storage port IP address (Port ip)	Storage port IP address	Specify the items in the following format. *IP_address*[:*iSCSI Communication_Port_Number*] Specify an integer between 1,024 and 65,535 for *iSCSI Communication_Port_Number*. If left blank, "3,260" is set.
Storage port IQN name (Port iqn)	Storage port IQN name	Specify a character string beginning and ending with an alphanumeric character and containing up to 223 alphanumeric characters, colons (":"), hyphens ("-"), and periods (".").
Disk Name (Disk name)	Disk name to register in the storage pool	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
Disk size (*2) (DiskSize)	Disk size to register in the storage pool	Specify a number with up to one decimal place, in units of gigabytes. For details on the scope which can be specified, refer to "10.2.3 [Disk] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
Server IP Address (Nic ip)	IP address of the server to use iSCSI boot	Specify the IP address.
Server IQN name (Nic iqn)	IQN name of the server to use iSCSI boot	Specify a character string beginning and ending with an alphanumeric character and containing up to 223 alphanumeric characters, colons (":"), hyphens ("-"), and periods ("."). For multipath configurations, the same IQN name must be specified for the same server.
Storage port index number connected from the server (*1, *3) (Nic portindex)	Storage port index number which is connected to a NIC of a server to use iSCSI boot	Specify an integer starting from "0". Specify a number between 0 and 999.
User name authentication (Chap user)	User name for CHAP authentication (optional)	Specify a user name consisting of alphanumeric characters or symbols containing from 1 to 127 characters (ASCII characters (0x20 to 0x7e)). If left blank, the authentication password cannot be specified.

Element Name	Description	Remarks (Possible Values, Examples)
Authentication password (Chap password)	Authentication password for CHAP (optional)	Specify a user name consisting of alphanumeric characters or symbols containing from 12 to 16 characters (ASCII characters (0x20 to 0x7e)). If a user name for authentication is specified, this setting cannot be omitted.
Mutual authentication password (MutualChap password)	Password for mutual authentication (optional)	Specify a user name consisting of alphanumeric characters or symbols containing from 12 to 16 characters (ASCII characters (0x20 to 0x7e)). If a user name for authentication is omitted, this setting cannot be specified.

*1: If the Index number of a storage port is the same as the one connected to a server, a physical connection is required.
*2: Register the actual LUN size in the iSCSI boot information. If it differs, the actual size of the LUN will be enabled from the server.
*3: The NIC Index specified in the iSCSI boot network definition file must be connected in the ascending order of the specified numbers.

📋 Example

The definition when portindex=0 with NIC1, and portindex=2 with NIC2 are connected is shown below.

- Specifying a storage definition file for iSCSI boot

  <Nic ... portindex="0"/>

  <Nic ... portindex="2"/>

- Specifying a network definition file for iSCSI boot

  chassis_model.BX900.boot_nic = NIC1,NIC2

📋 Example

```xml
<?xml version="1.0" encoding="utf-8"?>
<Storage>
  <Pool name="StoragePool" />
  <Ports>
    <Port index="0" ip="192.168.0.1" iqn="iqn.2010-03.com.fujitsu:iscsi:storage-0" />
    <Port index="1" ip="192.168.0.2" iqn="iqn.2010-03.com.fujitsu:iscsi:storage-1" />
  </Ports>
  <Disks>
    <Disk name="disk-01">
      <DiskSize>10</DiskSize>
      <Server>
        <Nics>
          <Nic portindex="0" ip="192.168.0.10" iqn="iqn.2010-03.com.fujitsu:iscsi:server-01" />
          <Nic portindex="1" ip="192.168.0.11" iqn="iqn.2010-03.com.fujitsu:iscsi:server-01" />
        </Nics>
        <Chap user="root" password="passwordpassword" />
      </Server>
    </Disk>
    <Disk name="disk-02">
      <DiskSize>10</DiskSize>
      <Server>
        <Nics>
          <Nic portindex="0" ip="192.168.0.20" iqn="iqn.2010-03.com.fujitsu:iscsi:server-02" />
          <Nic portindex="1" ip="192.168.0.21" iqn="iqn.2010-03.com.fujitsu:iscsi:server-02" />
        </Nics>
```

```
        </Server>
      </Disk>
    </Disks>
  </Storage>
```

....

2.5 Network Resources

This section explains the creation and modification of network resources.

2.5.1 Creation

The XML definition for network resources is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<Pool name="Resource Pool Name">
<Network name="Network resource name" label="label" auto="Automatic configuration">
  <Type>"Network Resource Type"</Type>
  <Comment>Comment</Comment>
  <Vlanid>VLAN ID</Vlanid>
  <PhysicalLANSegment>Physical LAN Segment Name</PhysicalLANSegment>
  <ExternalPorts vlanautosetting="Automatic VLAN configuration for external connection port">
    <NetworkSwitchPort number="LAN switch blade external port number" switch="LAN switch blade
name"/>
    <NetworkSwitchPort lag="Link Aggregation Group Name" switch="LAN Switch Blade Name"/>
  </ExternalPorts>
  <AddressSet name="Address set name" subnet="subnet address" mask="subnet mask">
    <Exclude>
      <AddressRange start="IP address range to exclude (Start IP address #1)" end="IP address
range to exclude (End IP address #1)" />
      <AddressRange start="IP Address Range to Exclude (Start IP Address #2)" end="IP Address
Range to Exclude (End IP Address #2)" />
    </Exclude>
    <DefaultGateway address="Default Gateway"/>
  </AddressSet>
  <SwitchConfiguration auto="Auto-Configuration">
    <Ruleset name="Ruleset Name"/>
  </SwitchConfiguration>
</Network>
</Pool>
```

The XXX.XXX.XXX.XXX format (period (".") -decimal notation) is used for the IP address, subnet address, and subnet mask.
The AddressSet tag is optional. If it is omitted, a network resource that cannot be assigned an address is created.

Table 2.9 List of Items Specified in XML Definitions for Network Resources

Element Name	Description	Remarks (Possible Values, Examples)
Resource pool name (Pool name)	Name of the resource pool to store the network resource	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
Network resource name (Network name)	Name of the network resource	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
Label (Network label)	Network resource label (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Automatic configuration (Network auto)	Automatic configuration for network resources	Specify whether automatic configuration for virtual networks, virtual switches, or port groups, which are associated with the network resource, is to be performed.

Element Name	Description	Remarks (Possible Values, Examples)
		- true If there are no virtual networks, virtual switches, or port groups associated with the network resource, the network is configured automatically. - false Automatic configuration of networks is not performed. The virtual networks, virtual switches, or port groups created beforehand are used for the network resource. If left blank, "true" is set.
Network resource type (Type)	Network resource type	Specify the type of the network resource. - For an admin LAN Specify "admin". Subnet information for admin LANs can be set using the AddressSet tag. - For iSCSI boot Specify "iSCSI". - For a public LAN Specify "<Type/>" (an empty element), or omit the Type element. If omitted, a public LAN is specified.
Admin LAN Subnet Name (ManagementLanSubnet name)	Admin LAN subnet name (optional)	This can be specified when the network resource type is an admin LAN. When a network resource is created using a registered admin LAN subnet, specify the admin LAN subnet name instead of the AddressSet element. Either use a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters and hyphens ("-"), or leave the field blank. If left blank, the admin LAN subnet directly connected from the manager is specified.
Comment (Comment)	Network resource comment (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
VLAN ID (Vlanid)	VLAN ID	Specify an integer between 1 and 4094.
Physical LAN segment name (PhysicalLANSegment)	Physical LAN segment name (optional)	Specify a physical LAN segment name. When using the NIC configuration specified in the server NIC definition, specify the physical LAN segment name specified in that server NIC definition.
External Connection Port Number (ExternalPorts)	A collection of LAN switch blade external connection port numbers (optional)	Specify one or more NetworkSwitchPort elements.
Automatic VLAN configuration for external connection ports	Specify whether or not to automatically perform VLAN setting for external connection ports.	Specify whether or not to automatically perform VLAN setting for external connection ports of a LAN switch blade. - true

Element Name	Description	Remarks (Possible Values, Examples)
(ExternalPorts vlanautosetting)	(optional)	VLAN setting for external connection ports of a LAN switch blade is automatically performed. - false VLAN setting for external connection ports of a LAN switch blade is not automatically performed. If left blank, "false" is set.
Physical port number of LAN switch blade external connection port (NetworkSwitchPort number)	Physical port number of LAN switch blade external connection port for external communications A member port from a link aggregation cannot be specified as an external port for the LAN switch blade.	Specify a positive integer.
Link aggregation port name of the external port of the LAN switch blade (NetworkSwitchPort lag)	Link aggregation group name of the external port of the LAN switch blade used for external communications When specifying the link aggregation group name of the external port of the LAN switch blade, there must be at least one member port.	Specify the link aggregation group name that was set up beforehand (e.g., linkaggregation1). Specify the link aggregation group name that is displayed in the resource details of the LAN switch blade on the server resource tree in the ROR console.
LAN Switch Blade Name (NetworkSwitchPort switch)	Name of a LAN switch blade with an external connection port	-
Address set name (AddressSet name)	Name of the address set	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), periods ("."), and hyphens ("-").
Subnet address (AddressSet subnet)	Subnet	Specify a subnet value.
Subnet mask (AddressSet mask)	Subnet mask	Specify a subnet mask value. The maximum value for a subnet mask is 255.255.255.255 (32-bit mask) and the minimum value is 255.255.0.0 (16-bit mask). However, 255.255.255.254 cannot be specified.
IP address to exclude (Exclude)	A collection of exclusion ranges of IP addresses (optional)	Specify one or more AddressRange elements.
IP address exclusion range (Start IP address, End IP address) (AddressRange)	IP address range (start and end) to exclude from the administration of Resource Orchestrator Start and end IP addresses are included in the exclusion range. Multiple ranges can be specified.	Specify start and end IP addresses. As the network address and broadcast address are automatically excluded, do not specify them in the IP address range (start and end) to exclude.
IP address exclusion range (Start IP address)	Starting point of exclusion range of IP addresses	Specify the IP address in IPv4 format.

Element Name	Description	Remarks (Possible Values, Examples)
(AddressRange start)		
IP address exclusion range (End IP address) (AddressRange end)	Endpoint of exclusion range of IP addresses	Specify the IP address in IPv4 format.
Default gateway (DefaultGateway address)	Default gateway	Specify the IP address.

Auto-configuration
 	
 (SwitchConfiguration auto)
	Enabling or disabling auto-Configuration for network devices	Specify whether or not to enable auto-Configuration.
		
		 - true
		
		  Auto-configuration is enabled.
		
		 - false
		
		  Auto-configuration is disabled.

Ruleset name (Ruleset name)	Name of the ruleset (This can be omitted, when "false" is set for Auto-Configuration)	Specify a character string up to 32 characters.

The created network resource varies depending on the values specified for *External connection port number* (ExternalPorts) and *Automatic VLAN configuration for external connection port* (ExternalPorts vlanautosetting).

Table 2.10 Network Resource Creation with the Values of ExternalPorts and vlanautosetting

No.	ExternalPorts Element	vlanautosetting Attribute Value	Number of External Connection Ports	Created Network Resources
1	None	Not specified	-	Internal networks
2	Specified	false or not specified	0	Internal networks
3	Specified	false or not specified	One or more	External networks
4	Specified	true	0	Internal networks (*1)
5	Specified	true	One or more	External networks (*1)

For network resource modification, when an external connection port is added, a tagged VLAN is automatically set to the external connection port.

Note

. . . .

- When specifying a subnet address and not specifying IP addresses for exclusion or a default gateway address, do not specify the end tag for the <AddressSet> tag.

Example

. . . .

- Do not specify an end tag as shown below.

```
<Pool name="NetworkPool">
  <Network name="sample">
    <Vlanid>10</Vlanid>
    <AddressSet name="sample" subnet="192.168.1.0"
mask="255.255.255.0">
    </AddressSet>
  </Network>
</Pool>
```

- Specify an empty element tag instead of the end tag.

```
<Pool name="NetworkPool">
  <Network name="sample">
     <Vlanid>10</Vlanid>
     <AddressSet name="sample" subnet="192.168.1.0"
mask="255.255.255.0"/>
  </Network>
</Pool>
```

- When specifying the <ExternalPorts> element, and not specifying the external port number or name of a LAN switch blade, do not specify the end tag of the <ExternalPorts> element. Specify an empty element tag instead of the end tag.

Example

```
<?xml version="1.0" encoding="utf-8"?>
<Pool name="NetworkPool">
<Network name="man_net" label="man_net_label">
    <Comment>comment</Comment>
  <Vlanid>4000</Vlanid>
  <PhysicalLANSegment>segmentA</PhysicalLANSegment>
  <ExternalPorts vlanautosetting="true">
    <NetworkSwitchPort number="11" switch="bx620-lan1"/>
    <NetworkSwitchPort number="12" switch="bx620-lan2"/>
    <NetworkSwitchPort lag="linkaggregation1" switch="bx900-lan1"/>
    <NetworkSwitchPort lag="linkaggregation2" switch="bx900-lan2"/>
  </ExternalPorts>
  <AddressSet name="192.168.99.0" subnet="192.168.99.0" mask="255.255.255.0">
    <Exclude>
      <AddressRange start="192.168.99.10" end="192.168.99.20" />
      <AddressRange start="192.168.99.30" end="192.168.99.40" />
    </Exclude>
    <DefaultGateway address="192.168.99.254"/>
  </AddressSet>
  <SwitchConfiguration auto="true">
    <Ruleset name="Ruleset1"/>
  </SwitchConfiguration>
</Network>
</Pool>
```

2.5.2 Modification

When modifying network resources, only elements that have been defined can be modified.

The following elements can be modified:

- Network Resource Name

- Label

- Comment

- Physical LAN Segment

- Subnet Information

- Exclusion Range of IP Addresses

- Default Gateway

- External Connection Port Settings

- Ruleset name

If defining multiple elements, they will be modified at the same time.

Define all new information of the settings after modification for external connection port settings.

Define all new information of the settings after modification for IP addresses to exclude.

When modifying network resources that automatically perform VLAN setting for external connection ports, if an external connection port is added, VLAN setting is automatically performed.

📑 Note

- Network resource types cannot be changed (specification of the Type tag).

- Resource pools cannot be changed (specification of the Pool tag). To change to another resource pool, use the rcxadm pool move command.

- VLAN IDs cannot be changed (specification of the Vlanid tag).

- Automatic VLAN configuration for external connection ports cannot be modified (the vlanautosetting attribute of the ExternalPorts element cannot be specified).

- Admin LAN subnet names cannot be changed (specification of the ManagementLanSubnet tag).

- No errors occur in command execution.

- When an external connection port is deleted, the following virtual resources may remain on the server within the chassis in which the LAN switch blade specified for the external connection port is mounted.

    - For VMware

      Port groups, virtual switches

    - For Hyper-V

      Virtual networks

  In this case, check the remaining virtual resources. If they are unnecessary, delete them using VM management software.

  The network map of Resource Orchestrator or VM management software can be used to check for the remaining virtual resources.

The XML definition for modification of each element is shown below.

🗒 Example

- Modifying network resource names

```
<Network name="Modified network resource name" />
```

- Modifying labels

```
<Network label="Modified label" />
```

- Modifying comments

```
<Network>
  <Comment>Modified Comments</Comment>
</Network>
```

- Addition of physical LAN segments

```
<Network>
  <PhysicalLANSegment>Physical LAN segment name which is added</
```

```
PhysicalLANSegment>
</Network>
```

- Deletion of physical LAN segments

```
<Network>
  <PhysicalLANSegment />
</Network>
```

- Modifying subnet information (when subnet information is not registered in network resources)

```
<Network>
  <AddressSet subnet="Modified subnet address" mask="Modified subnet
mask" />
</Network>
```

- Initializing subnet information (when the network resource type is public LAN, and the subnet information is registered)

```
<Network>
  <AddressSet />
</Network>
```

Do not specify any value in <AddressSet>.

- Adding exclusion range of IP addresses (when adding the IP address range of 192.168.1.1 to 192.168.1.10 to the existing exclusion range of 192.168.1.100 to 192.168.1.200)

```
<Network>
  <AddressSet>
    <Exclude>
      <AddressRange start="192.168.1.100" end="192.168.1.200" />
      <AddressRange start="192.168.1.1" end="192.168.1.10" />
    </Exclude>
  </AddressSet>
</Network>
```

- Changing exclusion range of IP addresses (when deleting the IP address range of 192.168.1.1 to 192.168.1.10 from the exclusion ranges of 192.168.1.100 to 192.168.1.200 and 192.168.1.1 to 192.168.1.10)

```
<Network>
  <AddressSet>
    <Exclude>
      <AddressRange start="192.168.1.100" end="192.168.1.200" />
    </Exclude>
  </AddressSet>
</Network>
```

Specify all IP address ranges to be excluded after modification for the Exclude element.

- Initializing the value of exclusion range of IP addresses

```
<Network>
  <AddressSet>
    <Exclude />
  </AddressSet>
</Network>
```

Do not specify any value in <Exclude>.

- Modifying the default gateway

```
<Network>
  <AddressSet>
    <DefaultGateway address="Modified default gateway" />
  </AddressSet>
</Network>
```

- Initializing the default gateway (This can only be specified when the network resource type is public LAN)

```
<Network>
  <AddressSet>
    <DefaultGateway />
  </AddressSet>
</Network>
```

Do not specify a value in <DefaultGateway>.

- Adding external connection ports (when adding external connection port information for an attached chassis (PRIMERGY BX900/BX400))

Information before Modification		Information after Modification	
LAN Switch Blade Name	External Connection Port Number/Link Aggregation Group Name	LAN Switch Blade Name	External Connection Port Number/Link Aggregation Group Name
bx600-lan1 bx600-lan2	40 40	bx600-lan1 bx600-lan2 bx900-lan1 bx900-lan2 bx400-lan1 bx400-lan2	40 40 41 41 linkaggregation1 linkaggregation2

  - Before the Modification

```
<Network>
  <ExternalPorts>
    <NetworkSwitchPort number="40" switch="bx600-lan1"/>
    <NetworkSwitchPort number="40" switch="bx600-lan2"/>
  </ExternalPorts>
</Network>
```

  - After the Modification

```
<Network>
  <ExternalPorts>
    <NetworkSwitchPort number="40" switch="bx600-lan1"/>
    <NetworkSwitchPort number="40" switch="bx600-lan2"/>
    <NetworkSwitchPort number="41" switch="bx900-lan1"/>
    <NetworkSwitchPort number="41" switch="bx900-lan2"/>
    <NetworkSwitchPort lag="linkaggregation1" switch="bx400-lan1"/>
    <NetworkSwitchPort lag="linkaggregation2" switch="bx400-lan2"/>
  </ExternalPorts>
</Network>
```

- Deleting external connection ports

Information before Modification		Information after Modification	
LAN Switch Blade Name	External Connection Port Number/Link Aggregation Group Name	LAN Switch Blade Name	External Connection Port Number/Link Aggregation Group Name
bx600-lan1	40		
bx600-lan2	40		
bx900-lan1	41	bx900-lan1	41
bx900-lan2	41	bx900-lan2	41
bx400-lan1	linkaggregation1		
bx400-lan2	linkaggregation2		

- Before the Modification

```
<Network>
  <ExternalPorts>
    <NetworkSwitchPort number="40" switch="bx600-lan1"/>
    <NetworkSwitchPort number="40" switch="bx600-lan2"/>
    <NetworkSwitchPort number="41" switch="bx900-lan1"/>
    <NetworkSwitchPort number="41" switch="bx900-lan2"/>
    <NetworkSwitchPort lag="linkaggregation1" switch="bx400-lan1"/>
    <NetworkSwitchPort lag="linkaggregation2" switch="bx400-lan2"/>
  </ExternalPorts>
</Network>
```

- After the Modification

```
<Network>
  <ExternalPorts>
    <NetworkSwitchPort number="41" switch="bx900-lan1"/>
    <NetworkSwitchPort number="41" switch="bx900-lan2"/>
  </ExternalPorts>
</Network>
```

- Modifying external connection ports

Information before Modification		Information after Modification	
LAN Switch Blade Name	External Connection Port Number/Link Aggregation Group Name	LAN Switch Blade Name	External Connection Port Number/Link Aggregation Group Name
bx900-lan1	41	bx900-lan1	40
bx900-lan2	41	bx900-lan2	40
bx400-lan1	linkaggregation1	bx400-lan1	linkaggregation11
bx400-lan2	linkaggregation2	bx400-lan2	linkaggregation12

- Before the Modification

```
<Network>
  <ExternalPorts>
    <NetworkSwitchPort number="41" switch="bx900-lan1"/>
    <NetworkSwitchPort number="41" switch="bx900-lan2"/>
    <NetworkSwitchPort lag="linkaggregation1" switch="bx400-lan1"/>
    <NetworkSwitchPort lag="linkaggregation2" switch="bx400-lan2"/>
  </ExternalPorts>
</Network>
```

- After the Modification

```
<Network>
  <ExternalPorts>
    <NetworkSwitchPort number="40" switch="bx900-lan1"/>
    <NetworkSwitchPort number="40" switch="bx900-lan2"/>
    <NetworkSwitchPort lag="linkaggregation11" switch="bx400-lan1"/>
    <NetworkSwitchPort lag="linkaggregation12" switch="bx400-lan2"/>
  </ExternalPorts>
</Network>
```

- Modifying a ruleset name

```
<SwitchConfiguration auto="true">
  <Ruleset name="Modified Ruleset Name"/>
</SwitchConfiguration>
```

2.6 Network Configuration Information

This section explains the creation and modification of network configuration information.

The commands for network device operations are shown below.

Operation		Command
Creation	Individual creation	rcxadm netdevice create
	Batch creation	rcxadm netconfig import
Modification		rcxadm netdevice modify

2.6.1 Creation

The XML definition for network configuration information is shown below.

- XML definitions for creation of individual network devices

```
<?xml version="1.0" encoding="utf-8"?>
<Netdevice ip="Admin IP Address" name="Device Name">
  <Location>Location</Location>
  <Types>
    <Type>Type</Type>
  </Types>
  <Maintenance>Maintenance Mode</Maintenance>
  <AutoConfiguration>Auto-Configuration for Network Device</AutoConfiguration>
  <DeviceInfo>
    <SysObjectId>sysObjectID</SysObjectId>
    <Vendor>Vendor Name</Vendor>
    <ProductName>Device Name</ProductName>
    <ModelName>Model Name</ModelName>
    <Firmware>Firmware</Firmware>
  </DeviceInfo>
  <Redundancy group_id="Group ID"></Redundancy>
  <MgmtInfos>
    <Snmps>
      <ReadCommunity>Community Name</ReadCommunity>
    </Snmps>
    <LoginInfos>
      <LoginInfo auth_type="Management Method for Authentication Information"
authority="Administrator Authority" check="Account Confirmation">
        <IpAddress>Destination IP Address</IpAddress>
        <Port>Destination Port Number</Port>
        <Tenant>Tenant Name</Tenant>
```

```
      <User>Account</User>
      <Password>Password</Password>
      <PrivilegedPassword>Administrator Password</PrivilegedPassword>
      <PasswordEncryption>Password Encryption</PasswordEncryption>
    </LoginInfo>
  </LoginInfos>
  <Monitoring method="Monitoring Method">
    <Interval>Monitoring Interval</Interval>
    <RetryCount>Retry Count</RetryCount>
    <Timeout>Timeout</Timeout>
  </Monitoring>
  <MgmtURL>Web Management Window URL</MgmtURL>
  </MgmtInfos>
  <Ports>
    <Port name="Port Name">
      <Description>Port Overview</Description>
      <PhysicalState>Communication Status</PhysicalState>
      <Link ip="Management IP address for Link Destination Device" port="Port Name of Link
Destination" kind="Type of Link Destination Device" />
    </Port>
  </Ports>
</Netdevice>
```

- XML definitions for batch creation of multiple network devices

```
<?xml version="1.0" encoding="utf-8"?>
</NetConfig>
<Netdevices>
  <Mode>Registration Mode</Mode>
  <Netdevice ip="Admin IP Address" name="Device Name">
    <Location>Location</Location>
    <Types>
      <Type>Type</Type>
    </Types>
    <Maintenance>Maintenance Mode</Maintenance>
    <AutoConfiguration>Auto-Configuration for Network Device</AutoConfiguration>
    <DeviceInfo>
      <SysObjectId>sysObjectID</SysObjectId>
      <Vendor>Vendor Name</Vendor>
      <ProductName>Device Name</ProductName>
      <ModelName>Model Name</ModelName>
      <Firmware>Firmware</Firmware>
    </DeviceInfo>
    <Redundancy group_id="Group ID"></Redundancy>
    <MgmtInfos>
      <Snmps>
        <ReadCommunity>Community Name</ReadCommunity>
      </Snmps>
      <LoginInfos>
        <LoginInfo auth_type="Management Method for Authentication Information"
authority="Administrator Authority" check="Account Confirmation">
          <IpAddress>Destination IP Address</IpAddress>
          <Port>Destination Port Number</Port>
          <Tenant>Tenant Name</Tenant>
          <User>Account</User>
          <Password>Password</Password>
          <PrivilegedPassword>Administrator Password</PrivilegedPassword>
          <PasswordEncryption>Password Encryption</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring method="Monitoring Method">
        <Interval>Monitoring Interval</Interval>
        <RetryCount>Retry Count</RetryCount>
```

```
          <Timeout>Timeout</Timeout>
        </Monitoring>
        <MgmtURL>Web Management Window URL</MgmtURL>
      </MgmtInfos>
      <Ports>
        <Port name="Port Name">
          <Description>Port Overview</Description>
          <PhysicalState>Communication Status</PhysicalState>
          <Link ip="Management IP address for Link Destination Device" port="Port Name of Link
Destination" kind="Type of Link Destination Device" />
        </Port>
      </Ports>
    </Netdevice>
  </Netdevices>
  <Links>
    <Link>
      <Devices>
        <Device ip="Admin IP Address of Device 1" kind="Type of Device 1">
          <Port>Connection Port Name of Device 1</Port>
        </Device>
        <Device ip="Admin IP Address of Device 2" kind="Type of Device 2">
          <Port>Connection Port Name of Device 2</Port>
        </Device>
      </Devices>
    </Link>
  </Links>
</NetConfig>
```

Table 2.11 List of Items Specified in XML Definitions for Network Configuration Information

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
Network configuration information (NetConfig)	A collection of network configuration information	-	Not possible	Not possible	Required	Yes
Network Device Information (Netdevices)	A collection of network device information	Specify one or more Netdevice elements. When registering two or more network devices for resources simultaneously, this element cannot be omitted.	Not possible	Not possible	Optional	Yes (*1)
Registration Mode (Mode)	Registration mode (optional)	Specify the registration mode of the network device. Specify one of following items. - add New registration Network device information is not overwritten when the specified management IP address has already been used to register another resource. - modify Modification Network device information is overwritten when the specified	Not possible	Not possible	Optional	-

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
		management IP address has already been used to register another resource. If left blank, "add" is specified.				
Admin IP address (Netdevice ip)	Admin IP address for the network device	Specify an IPv4 address.	Required	Optional	Required	Yes
Device name (Netdevice name)	Name of the network device (optional)	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), hyphens ("-"), and periods ("."). If left blank, the value the of standard MIB sysName obtained using SNMP is specified.	Optional	Optional	Optional	Yes
Location (Location)	Location (optional)	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). If left blank, the value of the standard MIB sysLocation obtained using SNMP is specified.	Optional	Optional	Optional	Yes (*2)
Type information (Types)	A collection of type information (optional)	Specify one or more Type elements.	Optional	Optional	Optional	Yes (*1)

Type
(Type)
	Network device type
	
	(optional)
		Specify the type of the network device.
		
		Specify one of following items.
		
		  - L2-Switch
		
		  - Firewall
		
		Network devices with "Firewall" specified are set as the registration targets for network pools.
		If left blank, "-" is specified.
			Optional	Optional	Optional	Yes (*2)

Maintenance Mode
(Maintenance)
	Maintenance mode settings
	
	(optional)
		Specify the status of maintenance mode.
		
		Specify one of following items.
		
		  - true
		    Maintenance mode
		
		  - false
		    Normal
		
		If left blank, "false" is specified.
			Optional	Optional	Optional	Yes

Auto-configuration for the network device
(AutoConfiguration)
	Auto-configuration for the network device
	
	(optional)
		Specify the status of auto-configuration for the network device.
		
		Specify one of following items.
		
		  - true
		    Target of auto-configuration
			Optional	Optional	Optional	-

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
		- false Not the target of auto-configuration If left blank, "true" is specified.				
Device information (DeviceInfo)	Device information	Information that is automatically collected by network device model definition and SNMP.	-	-	-	Yes
SysObjectId (SysObjectId)	SysObjectId	AN OID in number and period format is specified. Specification is unnecessary as it is automatically collected by SNMP.	-	-	-	Yes
Vendor Name (Vendor)	Vendor name	A character string is specified. Specification is unnecessary as it is set based on network device model definition.	-	-	-	Yes
Device name (ProductName)	Device name (product name)	A character string is specified. Specification is unnecessary as it is set based on network device model definition.	-	-	-	Yes
Model Name (ModeName)	Model name	A character string is specified. Specification is unnecessary as it is set based on network device model definition.	-	-	-	Yes
Firmware (Firmware)	Firmware or IOS version	A character string is specified. Specification is unnecessary as it is automatically collected by SNMP.	-	-	-	Yes
Group ID (Redundancy group_id)	Group ID (optional)	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). For the network devices belonging to the same group ID, use the same vendor name and device name.	Optional	Optional	Optional	Yes (*2)
Management information (MgmtInfos)	A collection of management information	Specify one or more Snmps elements, LoginInfo elements, or other similar elements.	Required	Optional	Required	Yes
SNMP information (Snmps)	A collection of SNMP information	Specify the ReadCommunity element once.	Required	Optional	Required	Yes
Community name (ReadCommunity)	Community name	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").	Required	Optional	Required	Yes
Login information (LoginInfos)	A collection of login information (optional)	Specify one or more LoginInfo elements.	Optional	Optional	Optional	Yes (*1)

Element Name	Description	Remarks (Possible Values, Examples)	Specification Individual Registration	Specification Individual Modification	Specification Batch Registration	Output Using Export
Management method for authentication information (LoginInfo auth_type)	Management method for authentication information (optional)	Specify the management method for the authentication information. When the information is managed within a network device, specify "local password". If omitted, it will be automatically specified.	Optional	Optional	Optional	Yes (*3)
Administrator authority (LoginInfo authority)	Presence or absence of administrator authority (optional)	Specify the type of authority for the account. When the account has user authority, specify "user" If omitted, it will be automatically specified.	Optional	Optional	Optional	Yes (*3)
Account confirmation (LoginInfo check)	Presence or lack of account information checks (optional)	Specify whether to check the account information when the registration or modification is performed. Specify one of following items. - true Checking is performed. (*4) - false Checking is not performed. If left blank, "false" is specified.	Optional	Optional	Optional	-
Destination IP address (IpAddress)	Destination IP address (optional)	Specify the IP address in IPv4 format. Specify the IP address when configuring a destination IP address other than an admin IP address for automatic configuration on the network device. When "true" is specified for account checks, specify the IP address of the network device that performs connection checks using the specified account and password. If left blank, the admin IP address is specified.	Optional	Optional	Optional	Yes (*3)
Destination port number (Port)	Port number of the protocol to connect the destination (optional)	Specify an integer between 1 and 65535. When "true" is specified for account checks, specify the port number of the network device that performs connection checks using the specified account and password. Connection checks are performed using the telnet protocol. If left blank, "23" is set.	Optional	Optional	Optional	Yes (*3)

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	
Tenant name (Tenant)	Tenant name (optional)	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). Specify the name of a tenant displayed in the orchestration tree that the resource belongs to. Only specify when "Firewall" is specified for the type (Type). Can be omitted when registering in the global pool.	Optional	Optional	Optional	Yes (*3)
Account (User)	User account for connection	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").	Required	Optional	Required	Yes (*3)
Password (Password)	Password for connection	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").	Required	Optional	Required	Yes (*3)
Administrator password (PrivilegedPassword)	Administrator password (optional)	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").	Optional	Optional	Optional	Yes (*3)
Password encryption (PasswordEncryption)	Presence or absence of password encryption (optional)	Specify whether the password of the network device is encrypted. Specify one of following items. - true Encrypted - false Not encrypted If left blank, "false" is specified. Specify "false" for initial registration as the password is entered in plain text at that time. To ensure security, when exporting the information in XML format, the password will be encrypted and "true" is set for this element. Specify "true" only when registering a network device using an encrypted password.	Optional	Optional	Optional	Yes (*3)
Monitoring Information (Monitoring)	Monitoring information (optional)	Specify the element of monitoring information.	Optional	Optional	Optional	Yes
Monitoring method (Monitoring method)	Monitoring method (optional)	Specify the monitoring method for the network device. Specify one of following items.	Optional	Optional	Optional	Yes

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	
		- 0: Not monitored - 1: SNMP monitoring - 2: ping monitoring - 3: ping and SNMP monitoring If left blank, "1" is set.				
Monitoring interval (Interval) (*5)	Monitoring interval (seconds) (This cannot be omitted when modifying the monitoring method)	Specify an integer between 1 and 600. If left blank, "300" is set.	Optional	Optional	Optional	Yes
Retry count (RetryCount) (*5)	Retry count (This cannot be omitted when modifying the monitoring method)	Specify an integer between 1 and 10. If left blank, "3" is set.	Optional	Optional	Optional	Yes
Timeout (Timeout) (*5)	Timeout (seconds) (This cannot be omitted when modifying the monitoring method)	Specify an integer between 1 and 300. If left blank, "30" is set.	Optional	Optional	Optional	Yes
Web management Window URL (MgmtURL)	Web management window URL (optional)	Specify the URL. If left blank, "http://*Admin IP address*/" is specified. This specification is valid only when using network devices for which Web management functions are provided.	Optional	Optional	Optional	Yes
Port information (Ports)	A collection of port information	One or more Port elements are specified.	-	-	-	Yes (*1)
Port name (Port name)	Port name	The value of the standard MIB ifName obtained using SNMP is specified. Specification is unnecessary as it is automatically collected by SNMP.	-	-	-	Yes
Port overview (description)	Overview of the port	The value of the standard MIB ifDescr obtained using SNMP is specified. Specification is unnecessary as it is automatically collected by SNMP.	-	-	-	Yes
Communication Status (PhysicalState)	Communication status	The value of line speed and communication mode obtained using SNMP are specified. Specification format:*Line_speed (MB)/ Communication_mode* For the communication mode, one of the following is specified:	-	-	-	Yes

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	

		- F
		
		  Represents full duplex.
		
		- H
		
		  Represents half duplex.
		
		- -
		
		  Represents unknown.
		
		Specification is unnecessary as it is automatically collected by SNMP.				

Management IP address for link destination device (Link ip)	Management IP address for link destination	An IP address in IPv4 format is specified.	-	-	-	Yes (*2)
Port Name of Link Destination (Link port)	The name of the link destination port of a physical interface	The port name which is set for the standard MIB ifName of the network device is specified.	-	-	-	Yes (*2)

Type of Link Destination Device
 	
(Link kind)
	Type of link destination device	The destination device to be linked to is specified.
		
		One of the following is specified:
		
		- netdevice
		
		  Represents a network device.
		
		- server
		
		  Represents a server.
			-	-	-	Yes (*2)

Link information (Links) (*6)	Link information destination (optional)	This element consists of one or more Link elements. Link information specified with the Links element is registered after all of the currently registered link information is deleted. When modifying only device information, do not specify the Links element to avoid modifying the current link information. In order to delete all current link information, specify the following elements for the Links element: <Links><Link></Link></Links>	Not possible	Not possible	Optional	Yes (*1)
Link (Link)	Link definition (This cannot be omitted when specifying link information)	Specify the Devices element once.	Not possible	Not possible	Optional	Yes (*1)
Device information (Devices)	Definition of device information	Specify the Device element twice.	Not possible	Not possible	Optional	Yes (*1)

Element Name	Description	Remarks (Possible Values, Examples)	Individual Registration	Individual Modification	Batch Registration	Output Using Export
	(This cannot be omitted when specifying links)					
Admin IP address for the device (Device ip)	Admin IP address for the device	Specify the IP address in IPv4 format.	Not possible	Not possible	Required	Yes
Device type (Device kind)	Device type (optional)	Specify the type of the device. Specify one of following items. - netdevice Represents a network device. - server Represents a server. If left blank, "netdevice" is specified.	Not possible	Not possible	Optional	Yes
Connection port name of device (Port)	Connection port name of device	Specify a character string. - When device type is "netdevice" Specify the port name which is set for the standard MIB ifName (*7) of the network device. - When device type is "server" Specify the L-Server NIC number. For physical L-Servers, specify the value for the NIC number of a rack mount server or a tower server. The NIC number is defined in preparations explained in "4.2.3.5 Pre-configuring Managed Servers" of the "Setup Guide CE". 📖 **Example** .... If "1" is defined for the NIC number placed on the upper left of the back face of a rack mount server, specify "1".	Not possible	Not possible	Required	Yes

-: Specification is unnecessary when registering or modifying. The information for the element is supplied by automatic configuration. The information is notified when the network configuration information is exported.

Yes: The element is output when exporting the network configuration information.

No: The element is not output when exporting the network configuration information.

*1: The element is output only when the tags are defined under that element.

*2: The element is output only when a value is set for that element.

*3: The element is output only when login information is set. When login information is not set, the default value (the value used when omitted) for that element is output if available.

*4: Accounts will be confirmed only for network devices satisfying the following conditions:

Vendor Name	Model Name	Prompt Type	Prompt Character
Fujitsu	SR-X IPCOM EX	Login prompt	Login:
		Password prompt	Password:
		Command prompt	*Arbitrary_character_string*#
			Arbitrary_character_string>
Cisco	Catalyst ASA	Login prompt	Username:
		Password prompt	Password:
		Command prompt	*Arbitrary_character_string*#
			Arbitrary_character_string>

The command prompt treats the *arbitrary character string* and the "#" or ">" that follows it as a prompt character string.

*5: Only specify the values when there are special requirements.

*6: It is not necessary to register network link information between Cisco ASA and adjacent network devices.

*7: When the standard MIB ifName for the network device is unknown, it can be confirmed using the snmpwalk command.

> **snmpwalk -v 1 -c [***SNMP community name***] [***IP address***] ifName** <RETURN>

📋 Example
. . . .

- When creating one network device:

```xml
<?xml version="1.0" encoding="utf-8"?>
<Netdevice ip="192.168.5.11" name="Firewall01">
  <Location>B1F</Location>
  <Types>
    <Type>Firewall</Type>
  </Types>
  <Maintenance>false</Maintenance>
  <AutoConfiguration>true</AutoConfiguration>
  <Redundancy group_id="1"></Redundancy>
  <MgmtInfos>
    <Snmps>
      <ReadCommunity>public</ReadCommunity>
    </Snmps>
    <LoginInfos>
      <LoginInfo auth_type="local password" authority="admin" check="true">
        <Tenant>TenantA</Tenant>
        <User>user</User>
        <Password>password</Password>
        <PrivilegedPassword>root_password</PrivilegedPassword>
        <PasswordEncryption>false</PasswordEncryption>
      </LoginInfo>
    </LoginInfos>
    <Monitoring method="3">
      <Interval>300</Interval>
      <RetryCount>5</RetryCount>
      <Timeout>60</Timeout>
    </Monitoring>
    <MgmtURL>https://192.168.5.11</MgmtURL>
  </MgmtInfos>
</Netdevice>
```

- When creating multiple network devices in one operation:

```xml
<?xml version="1.0" encoding="utf-8"?>
</NetConfig>
<Netdevices>
  <Mode>add</Mode>
  <Netdevice ip="192.168.5.11" name="Switch1">
    <Location>B1F</Location>
    <Types>
      <Type>L2-Switch</Type>
    </Types>
    <Maintenance>false</Maintenance>
    <AutoConfiguration>true</AutoConfiguration>
    <Redundancy group_id="1"></Redundancy>
    <MgmtInfos>
      <Snmps>
        <ReadCommunity>public</ReadCommunity>
      </Snmps>
      <LoginInfos>
        <LoginInfo auth_type="local password" authority="admin" check="true">
          <User>user</User>
          <Password>password</Password>
          <PrivilegedPassword>root_password</PrivilegedPassword>
          <PasswordEncryption>false</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring method="3">
        <Interval>300</Interval>
        <RetryCount>5</RetryCount>
        <Timeout>60</Timeout>
      </Monitoring>
      <MgmtURL>https://192.168.5.11</MgmtURL>
    </MgmtInfos>
  </Netdevice>
  <Netdevice ip="192.168.5.10" name="Firewall1">
    <Location>B1F</Location>
    <Types>
      <Type>Firewall</Type>
    </Types>
    <Maintenance>false</Maintenance>
    <AutoConfiguration>true</AutoConfiguration>
    <Redundancy group_id="2"></Redundancy>
    <MgmtInfos>
      <Snmps>
        <ReadCommunity>public</ReadCommunity>
      </Snmps>
      <LoginInfos>
        <LoginInfo auth_type="local password" authority="admin" check="true">
          <Tenant>TenantA</Tenant>
          <User>user</User>
          <Password>password</Password>
          <PrivilegedPassword>root_password</PrivilegedPassword>
          <PasswordEncryption>false</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring method="3">
        <Interval>300</Interval>
        <RetryCount>5</RetryCount>
        <Timeout>60</Timeout>
      </Monitoring>
      <MgmtURL>https://192.168.5.10:82</MgmtURL>
    </MgmtInfos>
  </Netdevice>
</Netdevices>
<Links>
```

```
      <Link>
        <Devices>
          <Device ip="192.168.1.1" kind="netdevice">
            <Port>lan0.1</Port>
          </Device>
          <Device ip="192.168.1.2" kind="netdevice">
            <Port>Fa2/1</Port>
          </Device>
        </Devices>
      </Link>
      <Link>
        <Devices>
          <Device ip="192.168.1.3" kind="netdevice">
            <Port>Fa2/2</Port>
          </Device>
          <Device ip="192.168.1.4" kind="server">
            <Port>1</Port>
          </Device>
        </Devices>
      </Link>
    </Links>
  </NetConfig>
```

2.6.2 Modification

When modifying network devices, only elements that have been defined can be modified.

The following elements can be modified:

- Admin IP address

- Device name

- Location

- Type information

- Maintenance Mode

- Auto-configuration for the network device

- Group ID

- SNMP Information

- Login Information

- Monitoring Information

- Web Management Window URL

If defining multiple elements, they will be modified at the same time.
Be sure to define the admin IP address to identify the target resource for modification. For the rcxadm netconfig import command, specify "modify" for Registration Mode (the Mode element).

The XML definition for modification of each element is shown below.

Example

- Changing the admin IP address and name:

```
<Netdevice ip="New Admin IP Address" name="New Device Name">
...
</Netdevice>
```

- Modifying a Location:

```
<Location>Modified Location</Location>
```

- Modifying the Type Information:

```
<Types>
  <Type>Modified Type</Type>
</Types>
```

- Modifying the Maintenance Mode:

```
<Maintenance>Modified Maintenance Mode</Maintenance>
```

- Modifying auto-configuration for network device (when changing the value to "true"):

```
<AutoConfiguration>true</AutoConfiguration>
```

- Modifying a Group ID:

```
<Redundancy group_id="Modified Group ID"></Redundancy>
```

- Modifying the SNMP Information:

```
<Snmps>
  <ReadCommunity>Modified Community Name</ReadCommunity>
</Snmps>
```

- Modifying the Login Information:

```
<LoginInfo auth_type="Modified management method of authentication information"
authority="Modified Administrator Authority" check="Modified Account Confirmation">
  <IpAddress>Modified Destination IP Address</IpAddress>
  <Port>Modified Destination Port Number</Port>
  <Tenant>Modified Tenant Name</Tenant>
  <User>Modified User Account for Connection</User>
  <Password>Modified Password for Connection</Password>
  <PrivilegedPassword>Modified Administrator Password</PrivilegedPassword>
  <PasswordEncryption>Presence or absence of password encryption after
modification</PasswordEncryption>
</LoginInfo>
```

- Modifying the Monitoring Information:

```
<Monitoring method="Modified Monitoring Information">
  <Interval>Modified Monitoring Interval</Interval>
  <RetryCount>Modified Retry Count</RetryCount>
  <Timeout>Modified Timeout</Timeout>
</Monitoring>
```

- Modifying the Web Management Window URL:

```
<MgmtURL>Modified Web Management Window URL</MgmtURL>
```

> ✑ **Note**
> ....
>
> - Type information cannot be modified when the target network device for modification is already registered in a network pool.
>
> - Redundancy configuration information cannot be modified when there is a firewall deployed for the network device to be modified.
>
> - When modifying login information, all existing login information is replaced.
>   All registered login information is deleted.
>
> ....

2.7 Resource Folders

The XML definition for resource folders is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<Folder name="Resource Folder Name" label="Label">
  <Comment>Comment</Comment>
  <LServers>
    <LServer name="L-Server Name" label="Label">
      L-Server information
    </LServer>
    <LServer name="L-Server Name" label="Label">
      L-Server information
    </LServer>
    ...
  </LServers>
</Folder>
```

Table 2.12 List of Items Specified in XML Definitions for Resource Folders

Element Name	Description	Remarks (Possible Values, Examples)
Resource Folder Name (Folder name)	Name of the resource folder	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). When creating it in a resource folder or a tenant folder, specify the resource folder name or the tenant folder name using slashes ("/").
Label (Folder label)	Resource folder label (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (Comment)	Comment for the resource folder (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.

For details on the elements of LServer tags, refer to "2.3 L-Servers".

> 📝 **Example**
> ....
>
> ```
> <?xml version="1.0" encoding="utf-8"?>
> <Folder name="folder001" label="Folder for work
> 1">
>   <Comment>Created on 2010/XX/XX for work 1</
> Comment>
>   <LServers>
>     <LServer name="L-Server1" label="Label">
>       L-Server1 Information
>     </LServer>
>     <LServer name="L-Server2" label="Label">
>       L-Server2 Information
> ```

```
      </LServer>
    </LServers>
</Folder>
```

....

2.8 User

This section explains the XML definitions of Users.

2.8.1 Tenant Management Roles and Tenant User Role

The XML definition for users with tenant management roles and tenant user roles is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<Users>
  <User name="User ID">
    <Password>Password</Password>
    <Roles>
      <Role name="Role name">
        <Scopes>
          <Scope>Access scope</Scope>
        </Scopes>
      </Role>
    </Roles>
    <MailAddress>User's mail address</MailAddress>
    <ContractName>Company name or Department name</ContractName>
    <EmergencyMailAddress>User's emergency contact mail address</
EmergencyMailAddress>
    <TelephoneNumber>User's telephone number</TelephoneNumber>
    <Comment>"Comment 1"</Comment>
    <ActualName>
      <FirstName>First Name</FirstName>
      <LastName>Last Name</LastName>
      <MiddleName>Middle Name</MiddleName>
    </ActualName>
  </User>
</Users>
```

Table 2.13 List of Items Specified in XML Definitions for Users

Element Name	Description	Remarks (Possible Values, Examples)
User ID (User name)	User ID	Specify a character string beginning with an alphanumeric character and containing between 4 and 31 alphanumeric characters, underscores ("_"), hyphens ("-"), and periods (".").
Password (Password)	Password for the user	Specify in the following cases, when changing to the setting that registers the user in the directory service with the directory service operation definition file: - Creating of a user - Changing of the user password in the user information Specify a character string that meets the following conditions: - A character string containing between 8 and 64 alphanumeric characters and symbols
Role name (*1) (Role name)	Role of the user	Specify the role name to allocate to the access scope. Two or more roles cannot be specified. - Tenant management roles

Element Name	Description	Remarks (Possible Values, Examples)
		- tenant_admin (Tenant Administrator) - tenant_operator (Tenant Operator) - tenant_monitor (Tenant Monitor) - Tenant user role - tenant_user (Tenant User) It is not possible to change the tenant management roles and the tenant user role to the infrastructure administrative roles or the multiple roles.
Access scope (*1) (Scope)	Access scope for the specified role	Specify the scope of access to allow for the user. Specify the name of the tenant that the user belongs. Specify the existing tenant. The tenant (access scope) who can specify it is only one.
E-mail address (MailAddress)	User's email address	Specify a character string of up to 64 alphanumeric characters or symbols.
Company name or department name (ContractName)	Company name or department name (optional)	Specify a character string up to 30 characters.
User's emergency contact mail address (EmergencyMailAddress)	User's emergency contact email address (optional)	Specify a character string of up to 64 alphanumeric characters or symbols.
User's telephone number (TelephoneNumber)	User's telephone number (optional)	Specify a character string of up to 24 alphanumeric characters or symbols.
Description (Comment)	Comment for the user (optional)	Specify a character string up to 256 characters.
First Name (FirstName)	User's first name	Specify a character string up to 15 characters.
Last Name (LastName)	User's first name	Specify a character string up to 15 characters.
Middle Name (MiddleName)	User's middle name	Specify a character string up to 15 characters.

*1: Role (lplatform_user) is specified for the L-Platform that the user uses when changing from the tenant management role to the tenant user role. Multiple specification of the lplatform_user role is possible. Moreover, it is possible to specify multiple access scopes (L-Platform) for the lplatform_user role.

💡 Example

. . . .

A definition example when changing the role from tenant administrator to tenant user:

```
<Roles>
  <Role name="tenant_user">
    <Scopes>
      <Scope>tenantA</Scope>
    </Scopes>
  </Role>
  <Role name="lplatform_user">
    <Scopes>
      <Scope>tenantA/lplatform1</Scope>
      <Scope>tenantA/lplatform2</Scope>
```

```
      </Scopes>
    </Role>
</Roles>
```

2.8.2 Infrastructure Administrative Roles and Multiple Roles

```xml
<?xml version="1.0" encoding="utf-8"?>
<Users>
  <User name="User ID" label = "Label" >
    <Password>Password</Password>
    <MailAddress>User's mail address</MailAddress>
    <Comment>"Comment 1"</Comment>
    <UserGroup>User Group Name</UserGroup>
      <Roles>
      <Role name="Role Name 1">
        <Scopes>
          <Scope>Access Scope 1</Scope>
          <Scope>Access Scope 2</Scope>
          <Scope>Access Scope 3</Scope>
        </Scopes>
      </Role>
      <Role name="Role Name 2">
        <Scopes>
          <Scope>Access Scope 1</Scope>
          <Scope>Access Scope 2</Scope>
          <Scope>Access Scope 3</Scope>
        </Scopes>
      </Role>
    </Roles>
  </User>
</Users>
```

Table 2.14 List of Items Specified in XML Definitions for Users

Element Name	Description	Remarks (Possible Values, Examples)
User ID (User name)	Name of the user	Specify a character string beginning with an alphanumeric character and containing between 4 and 31 alphanumeric characters, underscores ("_"), hyphens ("-") and periods (".").
Label (User label)	Label for the user (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Password (Password)	Password for the user	Specify in the following cases, when changing to the setting that registers the user in the directory service with the directory service operation definition file: - Creating of a user - Changing of the user password in the user information Specify a character string that meets the following conditions: - A character string containing between 8 and 64 alphanumeric characters and symbols
E-mail address (MailAddress)	User's email address (optional)	Specify a character string of up to 64 alphanumeric characters or symbols.
Description (Comment)	Comment for the user (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.

Element Name	Description	Remarks (Possible Values, Examples)
User group name (UserGroup)	Name of the user group the user belongs to (optional)	Specify the name of a user group. If omitted, the user group that the current user belongs to will be assigned. The same name as an existing name of the tenant cannot be specified.

Role name
(Role name)
	Role name
	(optional)
		Specify the role name to allocate to the access scope. If omitted, the role assigned to the user group will be assigned.
		
		- Infrastructure administrative roles
		
		  - infra_admin (Infrastructure Administrator)
		
		  - infra_operator (Infrastructure Operator)
		
		- Multiple roles
		
		  - administrator (Administrator)
		
		  - operator (Operator)
		
		  - monitor (Infrastructure Monitor, Monitor)
		
		It is not possible to change the infrastructure administrative roles and the multiple roles to the tenant management roles or the tenant user role.

Access scope
(Scope)
	Access scope for the specified role	Specify the scope of access to allow for the user.
		
		- When restricting the access scope
		
		  Specify resource folder names or resource names.
		
		- When not restricting the access scope
		
		  Specify "all".

📝 Example

```
<?xml version="1.0" encoding="utf-8"?>
<Users>
  <User name="test_user01" label="test_user01">
    <Password>test_user01</Password>
    <Comment>test_user</Comment>
    <UserGroup>admin</UserGroup>
  </User>
</Users>
```

2.9 User Groups

The XML definition for user groups is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<UserGroup name ="User Group name 1" label="label 1">
  <Comment>Comment 1</Comment>
  <Roles>
    <Role name="Role Name 1">
      <Scopes>
        <Scope>Access Scope 1</Scope>
        <Scope>Access Scope 2</Scope>
        <Scope>Access Scope 3</Scope>
      </Scopes>
    </Role>
    <Role name="Role Name 2">
```

```
    <Scopes>
      <Scope>Access Scope 1</Scope>
      <Scope>Access Scope 2</Scope>
      <Scope>Access Scope 3</Scope>
    </Scopes>
  </Role>
 </Roles>
</UserGroup>
```

Table 2.15 List of Items Specified in XML Definitions for User Groups

Element Name	Description	Remarks (Possible Values, Examples)
User group name (UserGroup name)	Name of the user group	Specify a Unicode character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
Label (UserGroup label)	Label for the user group (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (Comment)	Comment for the user group (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
Role Names (Role name)	Role name (optional)	Specify the role name to allocate to the access scope. For details on specifiable role names, refer to "Appendix B Access Control by Roles" in the "Operation Guide CE".

Access scope
(Scope)
	Role access scope	Specify the scope of access to allow for the user.
		
		- When restricting the access scope
		
		  Specify resource folder names or resource names.
		
		- When not restricting the access scope
		
		  Specify "all".

📑 Example

```
<?xml version="1.0" encoding="utf-8"?>
<UserGroup name="admin" label="admin">
  <Comment>admin_group</Comment>
  <Roles>
    <Role name="administrator">
      <Scopes>
        <Scope>all</Scope>
      </Scopes>
    </Role>
  </Roles>
</UserGroup>
```

2.10 Tenants

The XML definition for tenant folders is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<Tenants>
  <Tenant name ="Name of the tenant">
    <DisplayName>Display Name</DisplayName>
    <MailAddress>User's mail address</MailAddress>
    <Pools>
```

```
        <Pool name="Resource pool name" type="Resource pool type"
label="Label">
            <Comment>Comment</Comment>
            <Priority>Priority</Priority>
        </Pool>
      </Pools>
      <GlobalPoolLinks>
        <GlobalPoolLink>Global Pool Name</GlobalPoolLink>
          ...
      </GlobalPoolLinks>
    </Tenant>
</Tenants>
```

Table 2.16 List of Items Specified in XML Definitions for Tenant

Element Name	Description	Remarks (Possible Values, Examples)
Tenant name (Tenant name)	Name of the tenant (*1)	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). Creation in a resource folder and tenant is not possible.
Display Name (DisplayName)	Tenant display name	Specify a character string of up to 30 alphanumeric characters or symbols.
E-mail address (MailAddress)	Mail address of the tenant administrator	Specify a character string of up to 64 alphanumeric characters or symbols.
Resource pool name (Pool name)	Name of the resource pool to create in the tenant	Specify the name of the resource pool to create in the tenant . If the Pools element is omitted, no resource pool is created in the tenant.
Resource pool types (Pool type)	Resource Pool Types (optional)	Specify the type of the resource pool to create in the tenant . It can be specified using the following methods: - vm (VM pool) - server (Server pool) - storage (Storage pool) - network (Network pool) - address (Address pool) - image (Image pool)
Label (Pool label)	Label for the resource pool (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (Pool comment)	Comment for the resource pool (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
Priority (Priority)	Resource pool priority (optional)	Specify the priority for the resource pool as between 1 and 10. If omitted, "5" is set. For the priority order, "1" is the highest and "10" is the lowest.
Global pool name	Name of the global pool	Specify the resource pool name to be defined in a global pool of a tenant.

Element Name	Description	Remarks (Possible Values, Examples)
(GlobalPoolLink)	(optional)	If the GlobalPoolLinks element is omitted, no global pool is defined for the tenant. If specifying a resource pool in a resource folder, specify the resource folder name using slashes ("/").

*1: User group of the same name as the specified name of the tenant is created.

2.11 Server NIC Definitions

To register the server NIC definition, create the following files:

[Windows]
Installation_folder**Manager\etc\customize_data\nicdefctl\model***Chassis_model_name_product_name.xml* (*1)
Installation_folder**Manager\etc\customize_data\nicdefctl\host** *VM_host_name.xml* (*2)

[Linux]
/etc/opt/FJSVrcvmr/customize_data/nicdefctl/model/*Chassis_model_name_product_name.xml* (*1)
/etc/opt/FJSVrcvmr/customize_data/nicdefctl/host/ *VM_host_name.xml* (*2)

*1: For the *chassis name* and *product name* used as file name, set the specified value of element name for server NIC definition using lower case. When using a rack mount server or a tower server, set the file name to create to "*Product name*.xml". For the *product name*, specify the value of the model attribute of the Server element using lower case letters, removing blank spaces.

📝 Example

· ·
When "PRIMERGY RX300 S6" is displayed on the GUI, specify "primergyrx300s6" for the file name.
· ·

*2: For a VM host name used as a file name, set the same format as the element name for server NIC definition.

The XML definition for server NIC definition is shown below.

```
<Server chassis_model="Chassis Model Name" model="Product Name" name = "VM Host Name">
  <NICGroups>
    <NICGroup>
      <NICs>
        <NIC index="Index Number" redundant="Active/Standby Type"/>
      </NICs>
      <PhysicalLANSegments>
        <PhysicalLANSegment name="Physical LAN Segment Name"/>
      </PhysicalLANSegments>
    </NICGroup>
  </NICGroups>
</Server>
```

Table 2.17 List of Items Specified in XML for Server NIC Definition

Element Name	Description	Remarks (Possible Values, Examples)

Chassis Model Name
(Server chassis_model)
	Chassis model name
	
	When using a blade server, specify the chassis model name. This cannot be specified when a rack mount server, a tower server, or a VM host name is specified.
		Specify the following values for the chassis model name.
		
		- When the chassis is a BX900
		
		  "BX900"
		
		- When the chassis is a BX600
		
		  "BX600"
		
		- When the chassis is a BX400

Element Name	Description	Remarks (Possible Values, Examples)
		"BX400"
Product Name (Server model)	Server product name Specify the name when using a blade server, rack mount server, or tower server. When specifying the VM host name, the name cannot be specified.	Specify the product name that is displayed by selecting the [Resource Details] tab which is the server attribute of the server tree.
VM Host Name (Server name)	VM host name Specify when using a VM host name. When specifying the chassis model name or the product name, the name cannot be specified.	Specify the server name that is displayed by selecting the [Resource Details] tab which is the VM host attribute of the server tree.
NIC Definition Group Information (NICGroups)	Collection of NIC definition group	Specify one or more NICGroup elements.
NIC Definition Group (NICGroup)	NIC definition and physical LAN segment group	Specify one NICs element and one PhysicalLANSegments element.
NIC Definition Information (NICs)	A collection of NIC definitions	Specify one or two NIC elements.

Index Number
 	
(NIC index)
	NIC index number	Specify an integer starting from "1".
		
		- For blade servers
		
		  The index number of physical network information displayed by selecting the [Resource Details] tab which is the server attribute of the server tree.
		
		- For rack mount servers or tower servers
		
		  The number corresponding to the name of a NIC recognized by server virtualization software. (*1)

Active/Standby Type
 	
(NIC redundant)
	Type of active or standby, when using NICs in teaming configurations
	
	When only specifying one NIC for the NIC definition information, this specification is invalid.
	When specifying two NICs for the NIC definition information, this specification cannot be omitted.
	When "Active" is specified for two NICs, load balancing is performed based on virtual port IDs. For details on load balancing based on virtual port IDs, refer to the VMware manual.
	The values specified for this element are only valid when the virtual L-Server destination of
		When using the element with teaming configurations, specify active or standby.
		
		- Active
		
		  Indicates active.
		
		- Standby
		
		  Indicates standby.

Element Name	Description	Remarks (Possible Values, Examples)
	server virtualization software is VMware. When the server virtualization software is not VMware, this specification is disabled.	
Physical LAN Segment Information (PhysicalLANSegments)	Collection of physical LAN segments	Specify one or more PhysicalLANSegment elements. When sharing server NIC configurations, multiple PhysicalLANSegment elements are necessary.
Physical LAN Segment Name (PhysicalLANSegment name)	Physical LAN segment identifier name	Specify character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). Specify the identifier name of physical LAN segment that will use the NIC definition information within the NIC definition group.

*1: For VMware, index numbers are integers starting from 1 (1, 2, 3 ...). The numbers correspond to the names of NICs (vmnic0, vmnic1, vmnic2 ...) of the managed servers recognized by VMware.

Example

```
<Server chassis_model="BX900" model="D3030">
  <NICGroups>
    <NICGroup>
      <NICs>
        <NIC index="1" redundant="Active" />
        <NIC index="2" redundant="Active" />
      </NICs>
      <PhysicalLANSegments>
        <PhysicalLANSegment name="A" />
        <PhysicalLANSegment name="B" />
      </PhysicalLANSegments>
    </NICGroup>
    <NICGroup>
      <NICs>
        <NIC index="3" redundant="Active" />
        <NIC index="4" redundant="Standby" />
      </NICs>
      <PhysicalLANSegments>
        <PhysicalLANSegment name="C" />
      </PhysicalLANSegments>
    </NICGroup>
  </NICGroups>
</Server>
```

After Modifying the Server NIC Definition

Virtual switches, port groups, and virtual bridges already deployed can continue to be operated without any modifications, even if the server NIC definition is modified.
Newly deployed virtual switches, port groups, and virtual bridges should be configured according to the server NIC definition that has been modified.
This also applies when physical LAN segments referred to from network resources are modified.
When modifying already deployed networks, directly operate server virtualization software to modify them.

2.12 VMware Exclusion Port Group Definition File

Create the definition files of port group excluding VMware in the following folders in order to deploy L-Servers, even when the service console and port group are the same.

[Windows]
Installation_folder**Manager\etc\customize_data\vnetwork_excluded_vmware.rcxprop**

[Linux]
/etc/opt/FJSVrcvmr/customize_data/vnetwork_excluded_vmware.rcxprop

The definition files of port groups to exclude from VMware are as follows:

```
Port group name to exclude
```

- If "#" is specified for the first letter, the line will be recognized as a comment and ignored.

- When a blank line is specified, the line will also be ignored.

- The character code is UTF-8.

- Describe one port group name in one line. When excluding multiple port groups, describe the names in multiple lines.

📝 Example
. . . .

```
Service Console
VMkernel
Service Console 2
```

. . . .

2.13 Network Device Model Definition

Create the model definition file for network devices in the following folders:

[Windows]
Installation_folder**Manager\etc\customize_data\network_device_model.xml**

[Linux]
/etc/opt/FJSVrcvmr/customize_data/network_device_model.xml

The XML definition of model definitions for network devices is shown below.

```xml
<?xml version="1.0" encoding="utf-8"?>
<NetworkDeviceCategory>
  <Vendors>
    <Vendor name="Vendor Name" enterprise_num="Vendor Number">
      <Products>
        <Product name="Device Name">
          <Types>
            <Type>Type</Type>
          </Types>
          <Models>
            <Model name="Model Name">
              <Types>
                <Type>Type</Type>
              </Types>
              <SysObjectId>sysObjectID</SysObjectId>
            </Model>
          </Models>
        </Product>
      </Products>
    </Vendor>
```

```
    </Vendors>
</NetworkDeviceCategory>
```

Table 2.18 List of Items Specified in XML Definitions of Model Definitions for Network Devices

Element Name	Description	Remarks (Possible Values, Examples)
Vendor Information (Vendors)	Collection of vendors	Specify one or more Vendor elements.
Vendor name (*1) (Vendor name)	Vendor name of the network device	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). Specify the same arbitrary name as used for the vendor name of the folder (*2) where the rulesets for L-Platform templates are registered.
Vendor number (*3) (Vendor enterprise_num)	Vendor number of the enterprise OID of the network device (optional)	Specify the numbers allocated to the vendors continuing on from the enterprise MIB (1.3.6.1.4.1).
Device name information (Products)	Device name information	Specify one or more Product elements.
Device name (Product name)	Network device name (product name)	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). Specify the same arbitrary name as used for the unit name or model name of the folder (*1) where the rulesets for L-Platform templates are registered.
Type information (Types)	Type information (optional)	Specify one or more Type elements.
Type (*4) (Type)	Type (This cannot be omitted when specifying type information)	Specify the type of the network device. - L2-Switch - Firewall
Model name information (Models)	Model name information	Specify one or more Model elements.
Model Name (Model name)	Model name of network device	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). Specify the same arbitrary name as used for the unit name or model name of the folder (*1) where the rulesets for L-Platform templates are registered.
Type information (Types)	Type information (optional)	Specify one or more Type elements.
Type (*4) (Type)	Type (This cannot be omitted when specifying type information)	Specify the type of the network device. - L2-Switch - Firewall
sysObjectID (SysObjectId)	sysObjectID of network device	Specify the OID character string including numbers and periods ("."). When the standard MIB sysObjectID for a network device is unknown, it can be confirmed using the snmpwalk command.

Element Name	Description	Remarks (Possible Values, Examples)
		📋 **Example** • >snmpwalk -v 1 -c [SNMP community name] [IP address] sysObjectID •

*1: If two or more Vendor information (Vendor) that have the same Vendor Number are defined, the earliest one will take effect.

If only the vendor name is to be defined, specify the Vendor name and Vendor enterprize_num, and do not specify the apparatus name (Products) or model name (Models).

*2: For details on folders for registration of rulesets for L-Platform templates, refer to "4.2.4.9 When Automatically Configuring Network Devices" of the "Setup Guide CE".

*3: The vendor numbers for major vendors are shown for reference.

Vendor Name	Organization name registered in IANA	Vendor Number
Fujitsu	Fujitsu Limited	211
Brocade	Brocade Communications Systems, Inc. (previous was 'McData Corporation')	289
	Brocade Communications Systems, Inc.	1588
	Brocade Communications Systems, Inc. (previous was 'Foundry Networks, Inc.')	1991
	Brocade Communications Systems, Inc. (previous was 'NuView Inc.')	2427
	Brocade Communications Systems, Inc. (previous was 'McDATA,Inc')	4369
	Brocade Communications Systems, Inc. (previous was 'Rhapsody Networks Inc.')	6905
	Brocade Communications Systems, Inc. (previous was 'McDATA Corp.')	8244
Cisco	ciscoSystems	9
	Cisco Systems, Inc.	5771
	Cisco Systems	5842
Alaxala_Networks	ALAXALA Networks Corporation	21839
Alcatel-Lucent	Alcatel-Lucent (previously was 'Alcatel Data Network')	637
	Alcatel-Lucent (previously was Tropic Networks)	7483
	Alcatel-Lucent, 4ESS	35710
Allied_Telesis	Allied Telesis, Inc.	207
Blue_Coat	Blue Coat Systems	14501
Extreme_Networks	Extreme Networks	1916
Fortinet	Fortinet, Inc.	12356
F5_Networks	F5 Labs, Inc.	3375
	F5 Networks Inc	12276
Hitachi_Cable	Hitachi Cable, Ltd.	278
HP	Hewlett-Packard	11

Vendor Name	Organization name registered in IANA	Vendor Number
H3C	H3C	25506
Juniper_Networks	Juniper Networks, Inc.	2636
	Juniper Networks/Unisphere	4874
	Juniper Networks/Funk Software	1411
NEC	NEC Corporation	119
Panasonic_Electric_Works	Panasonic Electric Works Co., Ltd.	396
Radware	RND	89
3Com	3Com	43

IANA: Internet Assigned Number Authority

*4: If a type (Type) has been specified under both Product name and Models, the type under Models is given priority.
No network device type is specified if neither is specified.

📑 Example

....

```xml
<?xml version="1.0" encoding="UTF-8"?>
<NetworkDeviceCategory>
  <Vendors>
    <Vendor name="Fujitsu" enterprise_num="211">
      <Products>
        <Product name="SR-X300">
          <Types>
            <Type>L2-Switch</Type>
          </Types>
          <Models>
            <Model name="SR-X316T1">
              <SysObjectId>1.3.6.1.4.1.211.1.127.65.53</SysObjectId>
            </Model>
            <Model name="SR-X324T1">
              <SysObjectId>1.3.6.1.4.1.211.1.127.65.54</SysObjectId>
            </Model>
            <Model name="SR-X340TR1">
              <SysObjectId>1.3.6.1.4.1.211.1.127.65.55</SysObjectId>
            </Model>
          </Models>
        </Product>
        <Product name="SR-X500">
          <Types>
            <Type>L2-Switch</Type>
          </Types>
          <Models>
            <Model name="SR-X526R1">
              <SysObjectId>1.3.6.1.4.1.211.1.127.65.52</SysObjectId>
            </Model>
          </Models>
        </Product>
      </Products>
    </Vendor>
  </Vendors>
</NetworkDeviceCategory>
```

....

> 📝 **Note**

....

The model name of a network device is identified using the OID character string specified in the SysObjectId element in the Model element.

- Searching is performed from the beginning of the model definition file for the network device, and the value of the name attribute in the Model element for the matching sysObjectID found first is regarded as the model name.

- If no matching 0ID character string is found in the model definition file, the network device is regarded as having no model name.

....

2.14 Parameter Files (for Scripts)

The changeable XML definition to be used by the ruleset script is shown below.

```xml
<?xml version="1.0" encoding="utf-8"?>
<RulesetParameter>
  <Ruleset name="Ruleset Name">
    <MaxSegment>Maximum Segment Number</Maxsegment>
      <MaxServer>Maximum Server Number</MaxServer>
    <RulesetDescription>Ruleset Description</RulesetDescription>
  </Ruleset>
  <LNetworkDeviceInterfaces>
    <LNetworkDeviceInterface name="Network Identifier Parameter Name1">
      <SegmentType>Segment Type Name1</SegmentType>
      <NetworkResourceId>Network Resource ID1</NetworkResourceId>
    </LNetworkDeviceInterface>
    <LNetworkDeviceInterface name="Network Identifier Parameter Name2">
      <SegmentType>Segment Type Name2</SegmentType>
      <NetworkResourceId>Network Resource ID2</NetworkResourceId>
    </LNetworkDeviceInterface>
    ...
  </LNetworkDeviceInterfaces>
  <Parameters>
    <Parameter name="Parameter Variable1" label="Parameter Variable Display Name1"
view="display existence">
      <Syntax>Syntax</Syntax>
      <Value>Parameter Value1</Value>
      <ParameterDescription>Parameter Description1</ParameterDescription>
    </Parameter>
    <Parameter name="Parameter Variable2" label="Parameter Variable Display Name2"
view="display existence">
      <Syntax>Syntax</Syntax>
      <Value>Parameter Value2</Value>
      <ParameterDescription>Parameter Description2</ParameterDescription>
    </Parameter>
    ...
  </Parameters>
</RulesetParameter>
```

Table 2.19 List of Specified XML Items for Parameter Information to be Taken Over to Scripts

Element Name	Description	Remarks (Possible Values, Examples)
Ruleset name (Ruleset name)	Name of the ruleset	Specify a character string up to 32 characters.
Maximum Segment Number (MaxSegment)	The maximum number of segments which can be used with a ruleset When configuring systems involving multiple	Specify an integer between 1 and 99.

Element Name	Description	Remarks (Possible Values, Examples)
	hierarchy models, this maximum segment number is the upper limit of multiple hierarchy models. When the ruleset is used for network resources, specification is not necessary.	
Maximum Server Number (MaxServer)	The maximum number of servers which can be set for server specific configuration for one segment unit for ruleset. The total of the maximum number of servers and the maximum number of segments is the upper limit of the number of servers that can be created using an L-Platform. When the ruleset is used for network resources, specification is not necessary.	Specify an integer between 1 and 10.
Ruleset Description (RulesetDescription)	Ruleset description	Specify a character string up to 256 characters.
Network Identifier Parameter Information (LNetworkDeviceInterfaces)	Collection of network identifier parameter information	Specify one or more LNetworkDeviceInterface elements.
Network Identifier Parameter Name (LNetworkDeviceInterface name)	Network identifier parameter name for LNetdev virtual interfaces When the ruleset is used for network resources, specification is not necessary.	Specify the parameter variable name described in script.
Segment Type Name (SegmentType)	Name specifying segment types for rulesets (DMZ or Intranet) When configuring a multiple hierarchy model using an L-Platform, only segments with this segment type name can be created. When the ruleset is used for network resources, specification is not necessary.	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
Network Resource ID (NetworkResourceId)	Network resource ID for network identifier parameter	-

Element Name	Description	Remarks (Possible Values, Examples)
	When the ruleset is used for network resources, specification is not necessary.	
Parameter Information (Parameters)	Collection of parameter information (optional)	Specify one or more Parameter elements.
Parameter Variable Name (Parameter name)	Parameter variable name	Specify the parameter variable name described in script.
Parameter Variable Display Name (Parameter label)	Parameter variable display name	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

Display Existence (Parameter view)	Existence of parameter variable values	Specify display existence in order to operate parameter variable values.
		
		- true
		
		  displayed
		
		- false
		
		  not displayed

Syntax (Syntax)	Parameter variable format	Specify the format of the parameter variable.
		
		- INTEGER(0..255)
		
		  An integer
		  Specify the value range in the format (minimum..maximum).
		
		- DisplayString (SIZE (0..256))
		
		  Character string
		  Specify the maximum and minimum number of characters using SIZE.
		
		  For DisplayString(SELECT("*AA*"|"*BB*"|"*CC*")), select the character string from SELECT.
		
		- Physical Address
		
		  MAC address
		  Specify the address in MAC address format.
		
		- IpAddress
		
		  IP address
		  Specify the address in IPv4 address format or IPv6 address format.

Parameter Values (Value)	Parameter values	Specify the values omitted from the parameter variables. When no values are omitted, this element is not specified.
Parameter Description (ParameterDescription)	Parameter description Specify the meanings of parameter variables, the format of specified values, and the scope description.	Specify a character string up to 256 characters.

2.15 Network Device Interface Configuration File

Create the following files to configure the interfaces in the network devices using the scripts called by the auto-configuration function.

[Windows]

Installation_folder**Manager\etc\scripts\network_resource\Unm_network_setting.xml**

[Linux]

/etc/opt/FJSVrcvmr/scripts/network_resource/Unm_network_setting.xml

The XML definition of the interface configuration file of network device is as follows:

```
<?xml version="1.0" encoding="utf-8"?>
<UnmNetwork>
<Networks>
  <PXENetworkLink name="Network Resource Name"/>
    <NetworkDevices>
      <NetworkDevice name="Node Name">
        <Ipv4Addresses>
          <Ipv4Address address="IPv4 Address1" parameternumber="Sequential Number1"/>
          <Ipv4Address address="IPv4 Address2" parameternumber="Sequential Number2"/>
          ...
        </Ipv4Addresses>
        <Ipv6Prefix>IPv6 Prefix</Ipv6Prefix>
        <Ipv6Prefixlen>IPv6 Prefix Length</Ipv6Prefixlen>
        <Ipv6Addresses>
          <Ipv6Address address="IPv6 Address1" parameternumber="Sequential Number1"/>
          <Ipv6Address address="IPv6 Address2" parameternumber="Sequential Number2"/>
          ...
        </Ipv6Addresses>
        <Vrid>VRID</Vrid>
      </NetworkDevice>
      ...
    </NetworkDevices>
  </Network>
  ...
<Networks>
</UnmNetwork>
```

Table 2.20 List of Defined XML Items for Interface Configuration Files of Network Devices

Element Name	Description	Remarks (Possible Values, Examples)
Network Resource Name (Network name)	Name of the network resource	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), periods ("."), or hyphens ("-").
Node Name (NetworkDevice name)	Name of node	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), hyphens ("-"), and periods (".").
IPv4 Address (Ipv4Address address)	IPv4 address used in the specified node (optional)	Specify the IP address in IPv4 format.
Sequential Serial Number (parameternumber)	Sequential serial number for reserved variables	Specify an integer between 1 and 99.
IPv6 Prefix (Ipv6Prefix)	IPv6 prefix used in the specified node (optional)	Specify the IPv6 prefix.
IPv6 Prefix Length	IPv6 prefix length used in the specified node	Specify the IPv6 prefix length.

Element Name	Description	Remarks (Possible Values, Examples)
(Ipv6Prefixlen)	(optional)	
IPv6 Address (Ipv6Address address)	IPv6 address used in the specified node (optional)	Specify the IP address in the IPv6 format.
Sequential Serial Number (parameternumber)	Sequential serial number for reserved variables	Specify an integer between 1 and 99.
VRID (Vrid)	VRID values used in the specified node	Specify an integer between 1 and 255.

2.16 User (for Basic mode)

The XML definition for users is shown below.

```
<?xml version="1.0" encoding="utf-8"?>
<User name="User ID" label = "Label" >
  <Password>Password</Password>
  <Comment>Comment 1</Comment>
  <UserGroup>User Group Name</UserGroup>
   <Roles>
    <Role name="Role Name 1">
      <Scopes>
        <Scope>Access Scope 1</Scope>
        <Scope>Access Scope 2</Scope>
        <Scope>Access Scope 3</Scope>
      </Scopes>
    </Role>
    <Role name="Role Name 2">
      <Scopes>
        <Scope>Access Scope 1</Scope>
        <Scope>Access Scope 2</Scope>
        <Scope>Access Scope 3</Scope>
      </Scopes>
    </Role>
  </Roles>
</User>
```

Table 2.21 List of Items Specified in XML Definitions for Users

Element Name	Description	Remarks (Possible Values, Examples)
User ID (User name)	Name of the user	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
Label (User label)	Label for the user (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Password (Password)	Password for the user	Specify in the following cases: - Changing of the user password in the user information - Creating of a user when using internal authentication to manage user information in Basic mode Specify a character string that meets the following conditions: - For single sign or user management using a directory service in Basic mode:

Element Name	Description	Remarks (Possible Values, Examples)
		A character string containing between 8 and 64 alphanumeric characters and symbols
		- For user management using internal authentication in Basic mode
		Character string of up to 16 alphanumeric characters or symbols
Comment (Comment)	Comment for the user (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
User group name (UserGroup)	Name of the user group the user belongs to (optional)	Specify the name of a user group. If omitted, the user group that the current user belongs to will be assigned.
Role name (Role name)	Role name (optional)	Specify the role name to allocate to the access scope. For details on specifiable role names, refer to "Appendix B Access Control by Roles" in the "Operation Guide CE".
Access scope (Scope)	Access scope for the specified role	Specify the scope of access to allow for the user. - When restricting the access scope Specify resource folder names or resource names. - When not restricting the access scope Specify "all".

📝 **Example**

••

```xml
<?xml version="1.0" encoding="utf-8"?>
<User name="test_user01"
label="test_user01">
  <Password>test_user01</Password>
  <Comment>test_user</Comment>
  <UserGroup>admin</UserGroup>
</User>
```

••

2.17 Tenants (for Basic mode)

The XML definition for tenant folders is shown below.

```xml
<?xml version="1.0" encoding="utf-8"?>
<Tenant name ="Name of the tenant folder" label="Label">
  <Comment>Comment</Comment>
  <UserGroup name="User group name" label="Label">
    <Comment>Comment</Comment>
    <Role name="Role name">
        <Scopes>
          <Scope>Tenant Folder Name</Scope>
        </Scopes>
    </Role>
  </UserGroup>
  <User name="User ID" label = "Label" >
    <Password>Password</Password>
    <Comment>Comment</Comment>
    <UserGroup>User Group Name</UserGroup>
  </User>
  <Pools>
```

```
      <Pool name="Resource pool name" type="Resource pool type"
label="Label">
         <Comment>Comment</Comment>
         <Priority>Priority</Priority>
      </Pool>
   </Pools>
   <GlobalPoolLinks>
      <GlobalPoolLink>Global Pool Name</GlobalPoolLink>
         ...
   </GlobalPoolLinks>
</Tenant>
```

Table 2.22 List of Items Specified in XML Definitions for Tenant Folders

Element Name	Description	Remarks (Possible Values, Examples)
Tenant folder name (Tenant name)	Name of the tenant folder	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). When creating it in a resource folder, specify the resource folder name using slashes ("/"). Creation in a tenant folder is not possible.
Label (Tenant label)	Tenant folder label (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (Comment)	Comment for a tenant folder (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
User group name (UserGroup name)	Name of the user group to create in the tenant folder	Specify a user group name to create. If the UserGroup element is omitted, "supervisor" is set. For details on elements in the UserGroup element, refer to "2.9 User Groups". Create a user group when using directory service authentication.
User ID (User name)	Name of the user to create in the tenant folder	Specify the user ID to create. If the User element is omitted, no user is created. The following elements can be specified for User elements. - Label (User label) - Password (Password) - Comment (Comment) - User Group Name (UserGroup name) Role names (Role name) and access scopes (Scope) cannot be specified. For details on each element, refer to "2.8 User". When using directory service authentication, register the users registered in the directory service with the manager. A user and a manager are not converted, when no users are registered in the directory service.
Resource pool name (Pool name)	Name of the resource pool to create in the tenant folder	Specify the name of the resource pool to create in the tenant folder. If the Pools element is omitted, no resource pool is created in the tenant folder.
Resource Pool Types (Pool type)	Resource Pool Types	Specify the type of the resource pool to create in the tenant folder. It can be specified using the following methods: - vm (VM pool) - server (Server pool)

Element Name	Description	Remarks (Possible Values, Examples)
		- storage (Storage pool)
		- network (Network pool)
		- address (Address pool)
		- image (Image pool)
Label (Pool label)	Label for the resource pool (optional)	Specify a character string of up to 32 alphanumeric characters or symbols.
Comment (Pool comment)	Comment for the resource pool (optional)	Specify a character string of up to 256 alphanumeric characters or symbols.
Priority (Priority)	Resource pool priority (optional)	Specify the priority for the resource pool as between 1 and 10. If omitted, "5" is set. For the priority order, "1" is the highest and "10" is the lowest.
Global pool name (GlobalPoolLink)	Name of the global pool	Specify the resource pool name to be defined in a global pool of a tenant. If the GlobalPoolLinks element is omitted, no global pool is defined for the tenant. If specifying a resource pool in a resource folder, specify the resource folder name using slashes ("/").

📝 Example

```
<?xml version="1.0" encoding="utf-8"?>
<Tenant name ="TenantFolder" label="TenantFolder Label">
  <Comment>TenantFolder Comment</Comment>
  <UserGroup name="TenantUserGroup" label="TenantUserGroup Label">
    <Comment>TenantUserGroup Comment</Comment>
    <Role name="administrator">
        <Scopes>
          <Scope>TenantFolder</Scope>
        </Scopes>
    </Role>
  </UserGroup>
  <User name="TenantAdminUser" label="TenantAdministratorUser Label">
    <Password>tenant123</Password>
    <Comment>TenantAdministratorUser Comment</Comment>
    <UserGroup>TenantUserGroup</UserGroup>
  </User>
  <Pools>
    <Pool name="VMHostPool" type="vm" label="VMHostPool Label">
      <Comment>VMHostPool Comment</Comment>
      <Priority>5</Priority>
    </Pool>
    <Pool name="ServerPool" type="server" label="ServerPool Label">
      <Comment>ServerPool Comment</Comment>
      <Priority>5</Priority>
    </Pool>
    <Pool name="StoragePool" type="storage" label="StoragePool Label">
      <Comment>StoragePool Comment</Comment>
      <Priority>5</Priority>
    </Pool>
    <Pool name="NetworkPool" type="network" label="NetworkPool Label">
      <Comment>NetworkPool Comment</Comment>
      <Priority>5</Priority>
    </Pool>
```

```
    <Pool name="AddressPool" type="address" label="AddressPool label">
      <Comment>AddressPool Comment</Comment>
      <Priority>5</Priority>
    </Pool>
    <Pool name="ImagePool" type="image" label="ImagePool label">
      <Comment>ImagePool Comment</Comment>
      <Priority>5</Priority>
    </Pool>
  </Pools>
  <GlobalPoolLinks>
    <GlobalPoolLink>/VMHostPool</GlobalPoolLink>
    <GlobalPoolLink>/ServerPool</GlobalPoolLink>
       ...
  </GlobalPoolLinks>
</Tenant>
```

Chapter 3 Messages

This chapter explains the messages output or displayed by Resource Orchestrator.

When messages other than those listed in this chapter are output, refer to "Messages CE" or "Messages VE".

3.1 Messages from Resource Orchestrator

This appendix explains the following messages output or displayed by Resource Orchestrator.

3.1.1 21XXX Series

This section explains the 21XXX message series.

21146

FJSVrcx:INFO:21146:*name*:*type* status is changed to *status*

[Description]

The status of the *type* resource *name* has changed to *status*.

Status ("normal", "stop", "unknown") is displayed in *status*.

[Corrective Action]

Check the status *status* of the *type* resource *name*. If the status is "normal" or if the status changed to "stop" after an operation accompanying stopping of the resource stop, no action is necessary.

- When "Disk" is displayed for *type*, and "unknown" is displayed for *status*

The disk resource may be being used for other than the managed server.

Check that there are no problems.

21156

FJSVrcx:INFO:21156:*server_name*:registering server using *filename*

[Description]

When registering the managed server *server_name*, settings in the definition file *filename* were used.

[Corrective Action]

No action is necessary.

21161

FJSVrcx:INFO:21161:*obj*:*type* is detected.

[Description]

The resource displayed in *type* has been detected.

One of the following is displayed in *type*:

- "VMguest"
  The server name of the VM guest name is displayed in *obj*.

- "cloning image"
  The name and version of the cloning image is displayed in *obj*.

- "snapshot image"
  The name and version of the snapshot is displayed in *obj*.

- When *type* is "vstorage"
  The name of the virtual storage resource is displayed in *obj*.

- "storage"
  The name of the physical storage unit resource is displayed in *obj*.

[Corrective Action]

No action is necessary.

21162

FJSVrcx:INFO:21162:*obj*:*type* is lost.

[Description]

The resource displayed in *type* is no longer being managed by Resource Orchestrator.

One of the following is displayed in *type*:

- "VMguest"
  The server name of the VM guest name is displayed in *obj*.

- "cloning image"
  The name and version of the cloning image is displayed in *obj*.

- "snapshot image"
  The name and version of the snapshot is displayed in *obj*.

- When *type* is "vstorage"
  The name of the virtual storage resource is displayed in *obj*.

- "storage"
  The name of the physical storage unit resource is displayed in *obj*.

- "Disk"
  The disk resource name is displayed in *obj*.

[Corrective Action]

No action is necessary.

21163

FJSVrcx:INFO:21163:*obj*:*type* is migrated.

[Description]

The resource displayed in *type* has been migrated.

"Disk" is displayed in *type*.
The name of the disk that has been migrated is displayed in *obj*.

[Corrective Action]

No action is necessary.

21167

FJSVrcx:INFO:21167:*obj*:*type* configuration information updated

[Description]

The configuration information (CPU, memory, disk, etc.) of the L-Server on *obj* has been updated.

"L-Server" is displayed in *type*.

[Corrective Action]

No action is necessary.

3.1.2 22XXX Series

This section explains the 22XXX message series.

22700

FJSVrcx:INFO:22700:*name*:using already existing virtual switch on server *server*

[Description]

The virtual switch *name* on the server *server* is used.

[Corrective Action]

No action is necessary.

22701

FJSVrcx:INFO:22701:*name*:using already existing virtual network on server *server*

[Description]

The virtual network *name* on the server *server* is used.

 - When the target server is a VMware server

   The virtual network indicates a port group on the virtual switch.

[Corrective Action]

No action is necessary.

22702

FJSVrcx:INFO:22702:*name*:was manually created by a user, so do not delete the *resource* on the server *server*

[Description]

When deleting a network resource, the resource *name* corresponding to the network resource that exists on the server *server* was not deleted.

The resource *name* was manually created by a user, not automatically by Resource Orchestrator. Therefore, it cannot be deleted.

One of the following is displayed in *resource*:

- "virtual switch"

  The resource indicates a virtual switch.

- "virtual network"

  If the target is a VMware server, the resource indicates a port group on the virtual switch.

In cases other than the above, the resource indicates a virtual network.

[Corrective Action]

No action is necessary.

22704

FJSVrcx:INFO:22704:change to link aggregation specified for network resources detected(switch=*switch*,name=*lagname*)

[Description]

The make up of the link aggregation *lagname* of the LAN switch blade *switch* specified in the network resource has been changed.

[Corrective Action]

No action is necessary.

22750

FJSVrcx:INFO:22750:automatic network device configuration successful. ruleset=*ruleset_name* scriptlist=*scriptlist_name*

[Description]

The script list *scriptlist_name* has been successfully executed.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.

[Corrective Action]

No action is necessary.

22780

FJSVrcx:INFO:22780:unm-mon:Node status of *nodeid* is changed to *status*

[Description]

The status of the network device *nodeid* has changed to *status*.

[Corrective Action]

No action is necessary.

3.1.3 25XXX Series

This section explains the 25XXX message series.

25901

FJSVrcx:INFO:25901:Import has not been performed.

[Description]

Import was not performed, as there are no resource definitions for registration/change described in the specified configuration definition file or network configuration information file.

This message will be output in the following status:

- When no resource information is described in the configuration definition file or network configuration information file

- When the cells of resources described in the configuration definition file are all hyphens ("-")

[Corrective Action]

No action is necessary.

When registering or changing resources, confirm the contents of configuration definition files or network configuration information files, correct the contents, and perform the operations again.

3.1.4 41XXX Series

This section explains the 41XXX message series.

41303

FJSVrcx:WARNING:41303:*server_name*:server status is changed to status

[Description]

Refer to the explanation in "Message number 41303" in the "Messages VE".

However, for Resource Orchestrator, "warning", "error", or "unknown" may be displayed for the status of the L-Server or the resources that comprise the L-Server.

[Corrective Action]

Refer to the explanation in "Message number 41303" in the "Messages VE".

When "warning", "error", or "unknown" are displayed for status of the L-Server or the resources that comprise the L-Server, perform the following corrective action:

- Identify the failure location from the ROR console.

  For the operation method using the ROR console, refer to "Chapter 1 User Interface" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- When there is resource management software on the resource, identify the failed part using the resource management software.

41502

FJSVrcx:WARNING:41502:*obj*:*function* was skipped (*cause*)

[Description]

During the operation for *obj*, part of the process *function* was skipped to enable continuance of the operation.

The resource name is displayed for *obj*.
The name of the skipped process is displayed for *function*.
The reason the process was not performed is displayed for *cause*.

[Corrective Action]

- When "StorageChassisFailover" is displayed for *function*:

  The process *obj* was skipped by the switchover between operating and standby storage.

  Take corrective action based on the content displayed for *cause*.

- "not supported"

  There are no storage unit name or volume identifiers in the disk information.

  Check that the content of the replication definition file is correct.

- "mirror_definition not found"

  The replication definition file corresponding to a disk registered in Resource Orchestrator does not exist.

  Check that the content of the replication definition file is correct.

- "not pre_created"

  The disk registered with Resource Orchestrator is not the one created in advance.

  The target is the disk created in advance.

3.1.5 42XXX Series

This section explains the 42XXX message series.

42501

FJSVrcx:WARNING:42501:invalid value in the configuration file (file=*file*, detail=*detail*)

[Description]

There is an invalid value in the definition file.

The file name is displayed for *file*.
The details of the error are displayed for *detail*. When multiple errors are detected, they are displayed separated by commas (",").

- When "l_server.rcxprop" is displayed for "*file*", and "allocate_after_create" or "auto_preserved" is displayed for *detail*

  The value in the [Create an L-Server] dialog or the [Modify an L-Server] dialog has not been correctly set. Therefore, an unintended value may be set.

- When "vnetwork_ibp.rcxprop" is displayed for *file*, and "support_ibp_mode" is displayed for *detail*

  The IBP setting values have not been set correctly.

[Corrective Action]

- When the file name is "vnetwork_ibp.rcxprop"

  Check the value corresponding to the key value displayed for *detail*, and change the setting to the correct value, which is case-sensitive. After that, take corrective action based on the content of *detail*.

  - "allocate_after_create"

    - When there is no problem with the L-Server even if resources are allocated

      No action is necessary.

    - When only an L-Server definition has been created

      After deleting the L-Server, perform creation again.

  - "auto_preserved"

    - When resources have been allocated to the L-Server

      Change the "Resource release" in the [Modify an L-Server] dialog.

    - When an L-Server has only been defined

      Change the "Resource release" in the [Modify L-Server's definition] dialog.

      When changing the L-Server using the command, set the Repurpose element, and then change the L-Server.

- When the file name is "vnetwork_ibp.rcxprop"

    Check the value corresponding to the key value displayed for *detail*, and change the setting to the correct value, which is case-sensitive.

For details, refer to "D.4 Pre-setup Preparations (Network)" of the "Setup Guide CE".

42502

FJSVrcx:WARNING:42502: failed to read the configuration file (file=*file*)

[Description]

Failed to read the definition file.
The file name is displayed for *file*.

[Corrective Action]

Check the following, resolve the cause of the error and then re-execute.

- The file does not exist

- Access privileges of the file and directory

- The file is locked by another program

42503

FJSVrcx:WARNING:42503:control of *obj* failed. perform recovery referring to the message *msg*.

[Description]

When separating disk resources from the virtual storage, an error occurred in the storage management product, but the separation of the disk resources was successful.

However, action regarding the storage machine identification number must be taken.

In *obj*, the resource name of the storage management software is displayed.

The message output by the storage management product is output to *msg*.

[Corrective Action]

Check the message displayed in *msg*, then refer to the manual for the storage management product and take the required action.

42540

FJSVrcx:WARNING:42540:failed to write records. detail=*detail*

[Description]

The recording process of the operation log failed.

[Corrective Action]

- When *detail* is "filesystem full"

    Check the system log, resolve the cause of the error, and then perform the operation again.

    - Check if there are any error messages regarding the disk or file system.

    - Check if there is a quota limit or file system full message.

42701

FJSVrcx:WARNING:42701:NIC*number* is not connected to any of the external connection ports of the network resource *name* on the server *server*

[Description]

- When *server* is a physical server

  The external connection port of the switch specified for the network resource *name* and NIC*number* are not connected.

- When *server* is a VM host

  The external connection port of the switch specified in the network resource *name* and NIC*number* used by the virtual network created by the user in advance, are not connected.

  The virtual network is not created again, after changing the external connection port specified in the network resource *name*.

  The virtual network is not created again, after changing the physical LAN segment specified in the network resource *name*.

[Corrective Action]

- When *server* is a physical server

  Check the details related to the causes of the description above, and specify a NIC which can be connected with the network resource.

- When *server* is a VM host

  Check the details related to the causes of the description above, and create the virtual network again.

42702

FJSVrcx:WARNING:42702:NIC*number* of the server *server* is different from the physical LAN segment of network resource *name*

[Description]

The NIC *number* used by the virtual network is different from the physical LAN segment specified in the network resource *name*.

[Corrective Action]

In the following cases, create the virtual network again if necessary.

- If you have changed the server NIC definition or the physical LAN segment specified in the network resource *name*

- When the physical LAN segment specified in the network resource *name* differs from the NIC *number* used in the virtual network that was created by the user beforehand

42704

FJSVrcx:WARNING:42704:deleted link aggregation that is specified for network resources has been detected(switch=*switch*,name=*lagname*)

[Description]

The ports making up the link aggregation *lagname* of the LAN switch blade *switch* specified in the network resource have been deleted. Therefore, the L-server using the network resource where the ports making up the link aggregation *lagname* have been specified may not be able to communicate with other servers.

[Corrective Action]

Take one of the following actions:

- If the released port that makes up the link aggregation is no longer required as an external port for the network resource, change the specifications of the network resource to delete the port from the external ports of the network resource.

- If the port was released by mistake, reset the port as part of the link aggregation *lagname* from the management console of the LAN switch blade *switch*, then refresh the LAN switch blade *switch* from the ROR console with the <Update> button to have it recognized by this product.

42750

FJSVrcx:INFO:42750:automatic network device configuration warning. ruleset=*ruleset_name* scriptlist=*scriptlist_name* detail=*detail*

[Description]

An error occurred while executing the script list *scriptlist_name*, however, the subsequent processes were executed.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *detail*, the following detailed information is displayed:

- "status of device (*device_name*) is error. line=*n*"

  The status of the network device *device_name* is error. As the status of another network device for redundancy configuration is valid, the process was continued without executing for the network device *device_name*.

  In *device_name*, the network device name is displayed.
  In *n*, the line number of the script list *scriptlist_name* which was not executed is displayed.

- "device (*device_name*) is in maintenance mode. line=*n*"

  The network device *device_name* is undergoing maintenance. As the status of another network device for redundancy configuration is valid, the process was continued without executing for the network device *device_name*.

  In *device_name*, the network device name is displayed.
  In *n*, the line number of the script list *scriptlist_name* which was not executed is displayed.

- "deletion of file (*file_name*) failed"

  Deletion of the history information storage area *file_name* has failed.

  In *file_name*, the name of the file or directory is displayed.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "status of device (*device_name*) is error. line=*n*"

  After restoring the status of the network device *device_name*, log into the network device *device_name* directly and manually configure the definition, referring to the scriptlist *scriptlist_name* which was to be executed.

  For details on how to log into the network device *device_name* and delete definitions, refer to the manual for the network device.

- "device (*device_name*) is in maintenance mode. line=*n*"

  Perform the following after maintenance of the network device *device_name* is complete.

  - Refer to the script list *scriptlist_name* that was to be executed, login directly to the network device *device_name*, and then make the definitions changes manually.
    For details on how to log into the network device *device_name* and delete definitions, refer to the manual for the network device.

  - Use the rcxadm netdevice set command to cancel the maintenance mode for the *device_name* network device.
    For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

- "deletion of file (*file_name*) failed"

  If the history information storage area *file_name* exists, delete the history information storage area *file_name* manually.

  This action is not necessary if *file_name* history information storage area does not exist.

42751

FJSVrcx:WARNING:42751:execution of the script list was interrupted. ruleset=*ruleset_name* scriptlist=*scriptlist_name* script=*script_name* detail=*detail*

[Description]

An error occurred while executing the script list *scriptlist_name*. Execution of the script list *scriptlist_name* was aborted, however, the resource release process was continued.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *script_name*, the name of the script that caused the process to abort or the script name executed after the variable parameter conversion is displayed.

In *detail*, the following detailed information is displayed:

- "unavailable status for auto-config. device=*device_name* line=*n*"

  The network device *device_name* that executes the script *script_name* specified in the script list *scriptlist_name* cannot be selected as the target of automatic configuration.

  In *device_name*, the network device name is displayed.
  In *n*, the line number of the script list *scriptlist_name* which resulted in the aborting of script execution is displayed.

- "scripts execution error. device=*device_name* result=*code* line=*n*"

  An error occurred while executing the script *script_name*.

  In *device_name*, the network device name is displayed.
  In *code*, the return value of the script in which the error occurred is displayed.

    - If *code* is "04"

      An error such as disconnection and timeout has occurred, however, the script can be re-executed.

    - In other cases

      An error other than those above has occurred. The script cannot be re-executed.

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred while executing the script is displayed.

- "execution timeout. device=*device_name* line=*n*"

  Timeout occurred while executing the script list *scriptlist_name*.

  In *device_name*, the network device name is displayed.
  In *n*, the line number of the script list *scriptlist_name* at which timeout occurred while executing the script is displayed.

- "internal error. device=*device_name* line=*n*"

  An internal error occurred while executing the script list *scriptlist_name*.

  In *device_name*, the network device name is displayed.
  In *n*, the line number of the script list *scriptlist_name* at which an internal error occurred while executing the script is displayed.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of operation details at the time of error occurrence, and the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "unavailable status for auto-config. device=*device_name* line=*n*"

  - If "false" (not the target of auto-configuration) has been set for auto-configuration information for the network device *device_name* (the AutoConfiguration element) when registering or modifying the network configuration information of the network device *device_name*

    Perform modification using the rcxadm netdevice set command so that the corresponding network device *device_name* can be selected as the target of auto-configuration.
    For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

  - In other cases

    Before this message was output, script execution on the same network device *device_name* had failed, as notified by the following messages:

      - "Message number 42751"

      - "Message number 62760"

      - "Message number 67999"

    Based on the message that was output, identify the cause of the script execution error on the network device *device_name* and take the relevant corrective action.
    After taking corrective action, perform modification using the rcxadm netdevice set command so that the corresponding network device *device_name* can be selected as the target of auto-configuration.

    For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

- "scripts execution error. device=*device_name* result=*code* line=*n*"

  Identify the cause based on the return value of the script and information in the execution log and take the relevant corrective action.

  When executing the script again after performing corrective action, execute the rcxadm netdevice show command to check if the corresponding network device *device_name* can be selected as a target of auto-configuration. If it cannot be selected as a target of auto-configuration, perform modification using the rcxadm netdevice set command so that the corresponding network device *device_name* can be selected as a target of auto-configuration.

  For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

- "execution timeout. device=*device_name* line=*n*"

  Identify the time-consuming process occurring during execution of the script and take corrective action accordingly.

- "internal error. device=*device_name* line=*n*"

  Collect this message and troubleshooting data, and contact Fujitsu technical staff.

If it is necessary to delete the definition of the network device *device_name* for which a definition has been configured by the execution of the script, log into the network device *device_name* directly and delete the definition manually.

For details on how to log into the network device *device_name* and delete definitions, refer to the manual for the network device.

42752

FJSVrcx:WARNING:42752:execution of the script is skipped. ruleset=*ruleset_name* scriptlist=*scriptlist_name* script=*script_name* device=*device_name* line=*n*

[Description]

As the execution of the script list *scriptlist_name* was stopped, subsequent scripts were not executed.

For the reason why the execution was stopped, refer to "Message number 42751".

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *script_name*, the name of the script that was not executed or the name of the script that was not executed after conversion of the variable parameter is displayed.

In *device_name*, the name of the network device for which the script was not executed is displayed.

In *n*, the line number of the script list which was not executed is displayed.

This message is output for each of the scripts which were not executed.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of operation details at the time of error occurrence, and the information in this message.

The infrastructure administrator should take the corrective actions for "Message number 42751".

After taking the corrective actions for "Message number 42751", log into the network device directly and manually delete the definition configured for the network device *device_name*, referring to the script *script_name* which was to be executed.

For details on how to log into a network device and how to delete definitions, refer to the manual for the network device.

42780

FJCVrcx:WARNING:42780:unm-mon:Node status of *nodeid* is changed to *status*

[Description]

The status of the network device *nodeid* has changed to *status*.

[Corrective Action]

Check the state of the network device.

3.1.6 47XXX Series

This section explains the 47XXX message series.

47234

FJSVrcx:WARNING:47234:an error was ignored by the "force" option(*detail*)

[Description]

An error was ignored by the option.

In *detail*, a detailed message is displayed.

[Corrective Action]

Check the contents in *detail*, and then perform the corrective actions.

47242

FJSVrcx:WARNING:47242:*name*:failed to control switching HUB. (*detail*)

[Description]

VLAN configuration for the LAN switch displayed in *name* has failed.

In *detail*, an error message that explains the root cause of the problem is output.

[Corrective Action]

The VLAN information used by the source server for switchover may be set for the LAN switch displayed in *name*.

Delete the VLAN information by manually operating the LAN switch when necessary.

3.1.7 61XXX Series

This section explains the 61XXX message series.

61105

FJSVrcx:ERROR:61105:*name*:*address type* no more addresses available

[Description]

When creating the L-Server or changing the network configuration, there are not enough *address type* included in *name*.

- When the *address type* is IPv4

  The name of the network resource is displayed in *name*.

- When the *address type* is MAC or WWN

  The name of address set resource is displayed in *name*.

[Corrective Action]

- When the *address type* is IPv4

  Take one of the following actions:

  - Delete IP addresses that are not to be managed.

  - Create a new network resource.

  - Extend the subnet address.

  - Delete L-Servers that are not needed.

- When the *address type* is MAC or WWN

  - Create a new address set resource.

  - Delete L-Servers that are not needed.

61108

FJSVrcx:ERROR:61108:*L-Server*:must be connected to an admin LAN

[Description]

When creating a physical L-Server, the network resource of the management LAN is not connected.

The physical L-Server must be connected to a management LAN.

[Corrective Action]

Specify so a network resource of the management LAN is connected to the NIC of the physical L-Server, then retry.

61151

FJSVrcx:ERROR:61151:*value*: conflicts with *address_type* of:*obj*

[Description]

There is a conflict between *value* and the *address_type* of *obj*.
The following causes are possible:

- The specified value overlaps with the *address_type* of *obj*

- The value of an already registered *obj* is incorrect

One of the following is displayed in *address_type*:

- IP address

- MAC address

- Network address

One of the following is displayed in *obj*:

- Admin server

  Indicates an admin server.

- Resource name

  Indicates a registered resource.

- Subnet name

  Indicates a registered subnet.

[Corrective Action]

- When the specified value overlaps with the *address_type* of *obj*

  Perform the operation again after correcting the specified value.

- When the value of an already registered *obj* is incorrect

  Perform the operation again after changing the value of *obj*.

- When this message is displayed during creation of a network resource for which the Admin LAN type is set

  Select [Create Resource]-[Using existing admin subnet] to create a resource.

61162

FJSVrcx:ERROR:61162:resource state(s) differ from actual state(s) in *external_software*.

[Description]

Refer to the explanation in "Message number 61162" in the "Messages VE".

[Corrective Action]

Refer to the explanation in "Message number 61162" in the "Messages VE".

61166

FJSVrcx:ERROR:61166:*server_name* is not powered off.

[Description]

The power of the L-Server *server_name* has not been stopped.

The name of the L-Server is displayed in *server_name*.

[Corrective Action]

Stop the power of the L-Server. Then perform the operation again.

61167

FJSVrcx:ERROR:61167:I/O device not found for *server_name*

[Description]

The I/O device used for allocation of the server profile on the server *server_name* was not found.

When creating a physical L-Server, the server name selected when creating the L-Server will be displayed in *server_name*.

[Corrective Action]

Hardware requirements may not have been met.

For details, refer to "Table 1.50 Required Hardware" of "1.5 Hardware Environment" in the "Setup Guide CE".

61174

FJSVrcx:ERROR:61174:*server_name*:addresses already used in *external_software*. detail=*detail*

[Description]

The address specified for the server *server_name* already exists.

An address that is the same as one already in use may have been specified.

In *server_name*, the name of the server is displayed.

When the specified address is that of external software, the name of the external software is displayed in *external_software*.

In *detail*, a detailed message is displayed.

[Corrective Action]

Specify an unused address resource, and perform the operation again.

When the error occurs even when an unused address resource is specified, part of the external software information may be incorrect.

Refer to the external software information, and check whether or not the same address is included in the information.

If incorrect information remains, delete the information, and then perform the operation again.

When using the server as a current server, perform the following operations to set a unique address, and then perform the operation again:

- Set the address resource as being outside the range

- Use the current server as an L-Server

61175

FJSVrcx:ERROR:61175:*server_name*:addresses out of range in *external_software*. detail=*detail*

[Description]

- When *external_software* is VIOM

  The address specified for the server *server_name* is outside the range that is available for use.

In *server_name*, the name of the server is displayed.

In *detail*, a detailed message is displayed.

[Corrective Action]

Please change the VIOM settings so that the address (MAC address or WWN) displayed in *detail* is included in the range that is available for use.

61176

FJSVrcx:ERROR:61176:*profile_name*:already assigned to another server.

[Description]

The server profile *profile_name* is assigned to another server.

In *profile_name*, the name of the server profile is displayed.

[Corrective Action]

Delete the server profile of *profile_name*, and perform the operation again.

61177

FJSVrcx:ERROR:61177:*server_name*:a server profile is already assigned.

Another server profile has been assigned to the server *profile_name*.

In *server_name*, the name of the server is displayed.

[Corrective Action]

Delete the server profile configured for the server *server_name*, and perform the operation again.

61178

FJSVrcx:ERROR:61178:*server_name*:server profile deletion failed (*detail*).

[Description]

Failed to delete the server profile.

In *server_name*, the name of the server is displayed.

In *detail*, a detailed message is displayed.

[Corrective Action]

Delete the server profile configured for the server *server_name*, and perform the operation again.

61184

FJSVrcx:ERROR:61184:inconsistent boot configuration between: *spare_servers* and *server_name*

[Description]

The settings for iSCSI boot differ between *spare_servers* and *server_name*.

One of the following is displayed in *spare_servers* and *server_name*:

- L-Server XML

- iscsi_*user_group_name*.rcxprop

- iscsi.rcxprop

- iSCSI disk resource

When *spare_servers* or *server_name* is something other than the above, refer to the explanation in "Message number 61184" in "Messages VE".

[Corrective Action]

Review the settings of *spare_servers* and *server_name*, and perform the operation again.

Take corrective action based on the content of *spare_servers* and *server_name*.

- "L-Server XML"

  Review the content of the L-Server XML definition file.

  For details on L-Server XML definition files, refer to "Chapter 2 Resource Configuration Information and User Definition Information (XML Files)".

- "iscsi_*user_group_name*.rcxprop" or "iscsi.rcxprop"

  Review the content of the iSCSI boot network definition file.

  For details on iSCSI boot network definition files, refer to "4.2.4.3 When using an iSCSI LAN for iSCSI Boot" of the "Setup Guide CE".

- "iSCSI disk resource"

  Review the content of the definition file of the disk used for iSCSI boot.

For details on definition files of disks used for iSCSI boot, refer to "Chapter 2 Resource Configuration Information and User Definition Information (XML Files)".

61189

FJSVrcx:ERROR:61189:*service* is not installed

[Description]

service is not installed.

"DHCP Server" is displayed for *service*:

[Corrective Action]

After installing *service*, perform the operation again.

There is also the following case for Resource Orchestrator:

- When "DHCP Server" is displayed for *service* on a Windows manager

  After installing the standard DHCP service of the OS, perform the operation again.

61191

FJSVrcx:ERROR:61191:*obj*:*function* was aborted. detail=*detail*

[Description]

The process *function* for *obj* was not executed.

The reason why *function* was not executed is displayed for *detail*.

- When "failover", "failback", or "recovery" is displayed for *function*

  Due to the reason in *detail*, the process of failover, failback, or recovery using the rcxstorage command was aborted.

[Corrective Action]

- When "failover", "failback", or "recovery" is displayed for *function*

  Collect this message and troubleshooting data, and contact Fujitsu technical staff.

61199

FJSVrcx:ERROR:61199: operation is restricted by the license.

[Description]

The operation is restricted by the license.

[Corrective Action]

SPARC Enterprise servers cannot be registered in environments where Cloud Edition licenses are registered.

61508

FJSVrcx:ERROR:61508:The file version (*ExportVersion*) is incompatible with the system version (*ImportVersion*).

[Description]

The version used for the export of the configuration information and the one used for the import are different.

The version used for the export is output in *ExportVersion*. When the version information does not exist in the configuration information specified at import, "unknown" is output.

The version used for the import is output in *ImportVersion*.

[Corrective Action]

Use the same version for the export and import system.

61509

FJSVrcx:ERROR:61509:invalid format. detail=*detail*

[Description]

The format of the specified value, or the content of the XML specified when performing the following is not correct:

- Import of Configuration Information

Detailed information is output in the format "*message*: *error part*" for *detail*.

- When the message is "invalid MIME type":

The format of the configuration information specified at import is not in XML format.

The specified MIME type is output in the error part.

- When the message is "invalid XML tag":

The format of the XML tag information of the configuration information specified at import is not correct.

The XML tag name of the incorrect format is output in the error part.

- When the message is "invalid tag name":

An incorrect resource type exists in the configuration information specified at import.

The highest-level tag of the incorrect resource type is output in the error part. When multiple element names are output, they are displayed separated by commas (",").

- When the message is "lack of XML tag":

The configuration information specified at import does not contain all of the configuration information required for the resource type.

The highest-level tag of the resource type and the insufficient resource name are output in the error part. When multiple element names are output, they are displayed separated by commas (",").

- When the message is "lack of resource tag":

The resource type information of the configuration information specified at import does not contain all of the required resource information.

The highest-level tag of the resource type and the insufficient resource name are output in the error part, separated by commas (",").

- When the message is "duplicate XML tag":

There are multiple highest-level tags of the same resource type in the configuration information specified at import. When importing, multiple instances of the same resource type cannot be processed.

The top-level tag of the resource type is output to the error part. When multiple element names are output, they are displayed separated by commas (",").

- Import of Network Configuration Information

Detailed information is output in the format "*message*: *error part*" for *detail*.

- When the message is "invalid MIME type":

The format of the network configuration information specified at import is not in XML format.

The specified MIME type is output in the error part.

- When the message is "invalid XML tag":

The format of the XML tag information of the network configuration information specified at import is not correct.

The XML tag name of the incorrect format is output in the error part.

- When the message is "duplicate XML tag":

There are multiple highest-level tags of the same resource type in the network configuration information specified at import. When importing, multiple instances of the same resource type cannot be processed.

The top-level tag of the resource type is output to the error part. When multiple element names are output, they are displayed separated by commas (",").

[Corrective Action]

- When Importing Configuration Information

Contact Fujitsu technical staff.

- When Importing Network Configuration Information

Perform the operation again after checking the content displayed in *detail*, and resolving the cause of the error.

For details on the elements and the values, refer to "2.6.1 Creation".

3.1.8 62XXX Series

This section explains the 62XXX message series.

62501

FJSVrcx:ERROR:62501:*key*:is required

[Description]

key must be specified.

[Corrective Action]

- If this message is output during the following operations:

Check the content of the XML file specified when operating the server, and correct the elements and values specified in *key*.

  - Creating an L-Server

  For details on the elements and the values, refer to "2.3 L-Servers".

  When creating another L-Server using detailed L-Server information, which is output using the rcxadm lserver show command, refer to "Creating another L-Server using detailed L-Server information" of "2.3.1 Definition Information for Physical L-Servers (XML)" or "2.3.2 Definition Information for Virtual L-Servers (XML)".

  - Importing an L-Server template

  For details on the elements and the values, refer to "2.2 L-Server Template".

  - Registration of iSCSI boot information

  For details on the elements and the values, refer to "2.4.2 iSCSI Boot Information".

  - Registering or changing disk resources for a VM guest

  Take corrective action based on the content of *key*.

    - "Storage"

    It is necessary to define the Storage element.

    - "Pool"

    It is necessary to define the Pool element.

    - "Pool.name"

    It is necessary to define the name attribute for the Pool element.

- "VmHosts"

  It is necessary to define a VmHosts element.

- "VmHost"

  It is necessary to define a VmHost element.

- "VmHost.ip"

  It is necessary to define the ip attribute for the VmHost element.

- "VmHost(ip=*IP address of the VM host defined in XML*).Disks"

  It is necessary to define a Disks element in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

- "VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk"

  It is necessary to define a Disk element in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

- "VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk.name"

  It is necessary to define the name attribute in the Disk element in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

- "VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk(name=*Disk resource name defined in the XML*).size*"

  It is necessary to define the size attribute for the Disk tag to which *disk resource name defined in XML* is specified for name, in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

- "VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk(name=*Disk resource name defined in XML*).path"

  It is necessary to define the path attribute for the Disk element to which *disk resource name defined in XML* is specified for name, in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

- "Disk(name=*disk resource name specified in -name of rcxadm disk modify*)"

  It is necessary to define the Disk element to which the *disk resource name specified in -name of rcxadm disk modify* is specified for the name attribute in the XML.

For details on the elements and the values, refer to "2.4.1 Disk Resources [KVM]".

- Importing network configuration information or creating network devices

  For details on the elements and the values, refer to "2.6.1 Creation".

- If this message is output when creating or modifying a virtual L-Server

  Review the settings in the dialog, and perform the operation again.

- If this message is output when starting a virtual L-Server

  Check the values in the L-Server definition settings, and perform the operation again.

  Take corrective action based on the content of *key*.

  - "OSSetting.AdminPassword"

    Specify the "Administrator password" on the [OS] tab.

  - "OSSetting.DNSSearchPaths.DNSSearchPath"

    Specify the "DNS Search Path" on the [OS] tab.

    For the values, refer to "Chapter 10 Creating L-Servers" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

  - "port group"

    Check that there are no incomplete descriptions for the virtual bridge or VLAN ID in the virtual network definition file.

- If this message is output when importing DR

  Check the content of the XML file specified when operating the server, and correct the elements and values specified in *key*.

- If this message appears when linking a configured virtual machine with an L-Server and *key* is "CPU.NumOfCPU"

  Confirm that the VM host is managed by the VM management software and then perform the operation again.

62502

FJSVrcx:ERROR:62502:*template*:L-Server created from the template remains. detail=*obj*,..

[Description]

template is being used by the L-Server output in *obj*.
If there are three or more L-Server names output in *obj*, only two are displayed, followed by "...".

[Corrective Action]

If you do not want to use the template *template* used when creating the L-Server again, perform the following operations:

- Add the -force option to the command, and perform the operation again

- Delete the L-Server template from the ROR console

62503

FJSVrcx:ERROR:62503:*obj*:storage management software registration failed. detail=*detail*

[Description]

An error occurred during the control of storage management software, so registration of the storage management software *obj* failed.

[Corrective Action]

Take corrective action based on the content of *detail*.

- "version unmatch. [*version_of_the_storage_management_software*]"

  There is an error in the *version_of_the_storage_management_software*. Use a supported version.

- "service is not run."

  The storage management software is not operating. Start the storage management software.

- "invalid storage management software name"

  There is an error in the name specified for the -soft_name option. Specify the correct name.

- "one or more option is short"

  A required option has not been specified. Specify the required option.

- "one or more option is unnecessary"

  An unnecessary option has been specified. Do not specify unnecessary options.

- "storagemgr is already registered"

  The specified storage management software has already been registered. Storage management software that is already registered cannot be registered.

- "ip address:invalid format"

  There is an error in the specified IP address. Specify the correct IP address.

- "port:invalid format"

  There is an error in the specified port number. Specify the port number using a decimal number.

- "port: out of range"

There is an error in the specified port number. Specify the port number in the range of 0 to 65535.

- "command failed."

Storage management software may not be able to be used. Check whether storage management software is available.

In the following cases, storage management software is unavailable. Check that the preparations have been completed, referring to "4.3.1.1 Storage Environment Preparation" in the "Setup Guide CE".

- When the IP address for access to the storage management software specified with the -ip option is incorrect

- When descriptions in the storage connection definition file are incorrect

- When a security file has not been created

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62504

FJSVrcx:ERROR:62504:*obj*:changing storage management software information failed. detail=*detail*

[Description]

An error occurred during control of storage management software, so changes to the configuration of the storage management software *obj* failed.

[Corrective Action]

Take corrective action based on the content of *detail*.

- "storagemgr is registered as VM management software"

This command cannot be used to make configuration changes, as storage management software has been registered as VM management software. For how to modify the settings for VM management software, refer to "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- "one or more option is unnecessary"

An unnecessary option has been specified. Do not specify unnecessary options.

- "ip address:invalid format"

There is an error in the specified IP address. Specify the correct IP address.

- "port:invalid format"

There is an error in the specified port number. Specify the port number using a decimal number.

- "port: out of range"

There is an error in the specified port number. Specify the port number in the range of 0 to 65535.

- "storagemgr is registered as iSCSI controller"

This command cannot change resources, as the disk used for iSCSI boot has been registered.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62505

FJSVrcx:ERROR:62505:*obj*:storage management software unregistration failed. detail=*detail*

[Description]

An error occurred in the control of the storage management software, so deletion of the storage management software *obj* failed.

[Corrective Action]

Take corrective action based on the content of *detail*.

- "storagemgr is registered as VM management software"

  This command cannot be used for deletion as the storage management software has been registered as VM management software. For how to delete VM management software, refer to "5.6 Deleting VM Management Software" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- "storagemgr is registered as iSCSI controller"

  This command cannot delete resources, as the disk used for iSCSI boot has been registered.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62506

FJSVrcx:ERROR:62506:*server_name*:*vm_host* on the L-Server is registered in *pool*.

[Description]

The L-Server cannot be deleted because the VM host *vm_host* on the L-Server *server_name* is registered with the VM pool *pool*.

[Corrective Action]

When deleting the L-Server, delete the registration of the VM host *vm_host* from the VM pool *pool*, and then perform the operation again.

62507

FJSVrcx:ERROR:62507:*resource*:the disk and its contents will be deleted (unless shared with another L-Server), to do so, specify the -allow deldisk option.

[Description]

It is necessary to specify the "-allow deldisk" option when executing the command, because this operation may delete the disk contents.

The name of the L-Server or the disk is displayed for *resource*.

[Corrective Action]

Specify the "-allow deldisk" option for the command, and perform the operation again.

When backing up the disk contents of L-Server, perform this corrective action and then perform the operation again.

62508

FJSVrcx:ERROR:62508:*resource_name* is not selectable. detail=*detail*

[Description]

The resource *resource_name* cannot be selected.

In *resource_name*, the resource name is displayed.

In *detail*, the following detailed information is displayed:

- "physical_server is user not privileged"

  Cannot be selected because the physical server does not have access privileges.

- "physical_server is not selectable status"

  Cannot be selected because the status of the physical server is error.

- "physical_server is specified spare server"

  Cannot be selected because the specified physical server has been configured as a spare server in the server resource tree.

- "physical_server is not preserved by lserver *lserver*"

  Cannot be selected because the physical server is being used as another L-Server.

- "physical_server is already set up"

  Cannot be selected because a server profile has been allocated to the physical server.

- "invalid model name"

  Cannot be selected because there is an error in the model name of the physical server.

- "physical_server is incompatible model *model* and *model*"

  Cannot be selected because the model of the physical server is incompatible.

- "physical_server can not get spec *cpu or memory*"

  Cannot be selected because the information about the CPU or memory of the physical server cannot be obtained.

- "physical_server spec is low"

  Cannot be selected because the information about the CPU, memory, NIC, and FC of the physical server does not meet the defined conditions.

- "physical_server is not blade. fc-connection pattern is valid only blade."

  "FC connection pattern" is valid with blades only.

- "admin LAN pair is not the same between *index* and *index*"

  Cannot be selected because the combination of the admin LAN pair of the physical server is different from the definitions for physical L-Server creation.

- "physical_server is search locked"

  Failed because multiple operations of physical L-Server creation were performed at the same time.

- "physical_server is search locked"

  Cannot be selected because the physical server is used for multiple processes.

- "physical_server is preserved. but lserver is repurpose false"

  Cannot be selected because the physical server has been released while resource release was not specified when creating the L-Server.

- "server type is not the same between"

  Cannot be selected because the server type (blade server or rack mount server) of the physical server is different from the definition.

- "Virtual I/O type is not the same between"

  Cannot be selected because the virtualization method of the physical server is different.

- "admin LAN position is not the same between *index* and *index*"

  Cannot be selected because the position of the admin LAN of the physical server is different from the definitions for the physical L-Server.

[Corrective Action]

Take the following corrective action based on the content of *detail*.

- "physical_server is user not privileged"

  Grant the physical server access privileges and perform the operation again.

- "physical_server is not selectable status. state *status*"

  Check the status of the physical server, and then perform the operation again.

- "physical_server is specified spare server"

  Cancel the spare server settings, and then perform the operation again.

- "physical_server is not preserved by lserver *lserver*"

  Change the physical server status to unused, and then perform the operation again.

- "physical_server is already set up"

  Check the status of the physical server, and then perform the operation again.

- "invalid model name"

  Review the model name that was specified during creation of the physical L-Server, then perform the operation again.

- "physical_server is incompatible model *model* and *model*"

  Check the model compatibility of the physical server, and then perform the operation again.

  For details, refer to "Table 14.1 List of Items Specified in Definition Files for Checking Spare Server Models and Configurations" in "14.1.1 L-Server High Availability" of the "Operation Guide CE".

- "physical_server can not get spec *cpu or memory*"

  Confirm that the CPU and memory information of the physical server has been configured, and then perform the operation again.

- "physical_server spec is low"

  Review the CPU, memory, NIC, and FC (*1) information that was specified during creation of the physical L-Server, and then perform the operation again.

  *1 A physical server cannot be found that has the number of FCs specified in the FC connection pattern.

  Refer to "4.3.1.2 Storage Configuration" in the "Setup Guide CE" for information on how to obtain the FC information for the physical server.

- "physical_server is not blade. fc-connection pattern is valid only blade."

  "FC connection pattern" is valid with blades only.

- "admin LAN pair is not the same between"

  Confirm that the admin LAN information of the physical L-Server and physical server has been configured, and then perform the operation again.

- "physical_server is search locked"

  Multiple operations of physical L-Server creation were performed at the same time. Perform the operation again.

- "physical_server is search locked"

  Check if the physical server is being used for multiple processes, and then perform the operation again.

- "physical_server is preserved. but lserver is repurpose false"

  Specify resource release when creating the physical L-Server, then perform the operation again.

- "server type is not the same between"

  Confirm the server type (blade server or rack mount server) used when creating the physical L-Server and then perform the operation again.

- "Virtual I/O type is not the same between"

  Check the virtualization method setting for the physical server, and then perform the operation again.

- "admin LAN position is not the same between *index* and *index*"

  Check the physical L-Server definition and admin LAN position between physical servers, and then perform the operation again.

62509

FJSVrcx:ERROR:62509:*address*:out of range (*start* to *end*) in *resource name*

[Description]

An address outside of the specifiable address scope was specified when performing the following operations:

- Creating an L-Server

- Changing Network Configuration

- Registering Managed Servers

- Changing Managed Servers

In *address*, the specified address is displayed.

In *start*, the start value of the subnet address or start value of the address set resource is displayed.

In *end*, the end value of the subnet address or end value of the address set resource is displayed.

In *resource name*, the name of either the network resource or address set resource is displayed.

Start value and end value are included in the specifiable scope.

[Corrective Action]

Specify an address within the specifiable scope, and perform the operation again.

62510

FJSVrcx:ERROR:62510: failed to control *obj*(*ipaddress*). IF=*%1*, code=*%2*, message=*%3*

[Description]

An error occurred during control of storage management software.

In *obj*, the resource name of the storage management software is displayed.
For *ipaddress*, the IP address of the target resource is displayed.
In *%1*, the internal function name is displayed.
In *%2*, the internal code information is displayed.
In *%3*, the internal detail information is displayed.

[Corrective Action]

- When using NetApp as storage management software

  Take corrective action based on the content of *%2*.

  - If *%2* is "13062"

    Since the specified disk size is larger than the available space, creation of a volume on the storage unit failed.

    Perform the operation again after modifying the disk size.

  - If *%2* is "13115"

    Since the specified disk size is less than 20MB, creation of a volume on the storage unit failed.

    Perform the operation again after modifying the disk size.

- When using PRIMECLUSTER GDS as storage management software

  - When *%1* is /usr/sbin/sdxvolume, and *%3* contains "no enough space"

    Since the specified disk size is larger than the available space, creation of a volume on the storage unit failed.

  - When "Permission denied" or "not privileged" is included in *%3*

    The user specified when registering the storage management software does not have sufficient privileges to execute the command.

    Change the user name for the storage management software.

    For details, refer to "1.7.1 rcxadm storagemgr".

  - When *%1* is /usr/sbin/sdxvolume, and *%3* contains "class closed down", or when *%1* is /bin/dd, and *%3* contains "No such device or address"

    A failure may occur on the disk used as virtual storage.

Refer to the PRIMECLUSTER GDS manual.

- When *%1* is /usr/sbin/sdxvolume, and *%3* contains "related to proxy volume"

  In the settings of PRIMECLUSTER GDS, a proxy volume is related to a disk.

  After deleting the relationship using PRIMECLUSTER GDS, perform the operation again.

- When a character string beginning with "/usr/sbin/sdx" is displayed in *%1*

  An error occurred while executing a PRIMECLUSTER GDS command.

  Refer to the PRIMECLUSTER GDS manual.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in internal code information, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62511

FJSVrcx:ERROR:62511: failed to control *obj.* IF=*%1*, message=*%2*

[Description]

An error occurred during control of storage management software.

In *obj*, the resource name of the storage management software is displayed.
In *%1*, the internal function name is displayed.
In *%2*, the message of the storage management software is displayed.

[Corrective Action]

- When the target storage is ETERNUS

  - When *%2* is "ERROR:ssmgr3419:The specified alias name has already been registered."

    Creation or startup of the L-Server failed because the alias name of the affinity group has already been defined when ETERNUS storage was created.

    For corrective actions, refer to "When an L-Server is Created or Started, "Message number 62511" is Displayed, then Creation or Startup of the L-Server Fails.".

  - When *%2* is "ERROR:ssmgr3422:As for specified volume *Volume_number*, the LUN mapping is done."

    Connecting a disk resource to an L-Server has failed because the Volume corresponding to the disk resource had already been mapped.

    For corrective actions, refer to "When a Disk Resource is Connected to an L-Server, "Message number 62511" is Displayed and Connection Fails.".

  - When any other message is displayed

    Performing corrective actions referring to the ETERNUS SF Storage Cruiser manual, and then perform the operation again

- When the target storage is EMC CLARiiON, EMC Symmetrix DMX or EMC Symmetrix VMAX

  - When *%2* is "lunmask doesn't set it."

    A disk resource connected to an L-Server has been released from storage management software.

    Detach the disk resource from the L-Server, and then perform the operation again.

  - When any other message is displayed

    Perform the operation again after performing corrective actions referring to "3.2 Messages Beginning with swsag or ssmgr".

- When using any other storage

  Perform operations again after performing corrective actions, referring to the storage management software manual.

62512

FJSVrcx:ERROR:62512:filename:invalid file format, detail=*%1*

[Description]

There is an error in the file format specified for *filename*.

The details of the error are displayed for *%1*.

[Corrective Action]

- When executing the rcxstorage command:

Take corrective action based on the content of *%1*.

- "specified target volume not found in ROR (line:*n*)"

The disk resource corresponding to the target volume for replication specified on line *n* of the replication definition file specified for *filename* has not been detected and displayed in the resource tree. Check that the target volume for replication is correctly specified, and then execute the command again.

- "number of column must be 4 (line:*n*)"

There is an error with the number of columns in line *n* of the replication definition file that is specified for *filename*. Check that the number of columns is 4, and then execute the command again.

- "empty file"

There is no content in the replication definition file specified for *filename*. Check that the content of the replication definition file is correct, and then execute the command again.

- "field missing a value (line:*n*)"

A column with no value set exists in line *n* of the replication definition file specified for *filename*. Set the value for the column, and then execute the command again.

- "definition conflict with line m (line:*n*)"

The definition in line *n* of the replication definition file specified for *filename* is found again in line *m*. Correct the volume, and execute the command again.

- "specified target volume not found in ROR (line:*n*)"

The disk resource corresponding to the target RAID group or TPP for replication specified on line *n* of the mirroring definition file specified for *filename* has not been detected and displayed in the resource tree. Check that the target RAID group or TPP for replication is correctly specified, and then execute the command again.

62513

FJSVrcx:ERROR:62513:*resource_name*:*resource_type* registration failed. detail=*detail*

[Description]

Registration of the resource *resource_name* has failed.

In *resource_name*, the name of the virtual storage resource or the disk resource is displayed. When multiple resources are operated using one operation, only the first resource name an inconsistency was detected for is displayed.

In *resource_type*, "vstorage" or "disk" is displayed.

- When *detail* is "attribute of thick/thin provisioning conflicts with *target*"

Failed due to inconsistencies in the attribute combination of thin provisioning or thick provisioning with the destination storage pool for registration or movement.

In *target*, the name of the storage pool is displayed.

[Corrective Action]

Check the content displayed in *detail*, and then perform the operation again.

- When *detail* is "attribute of thick/thin provisioning conflicts with *target*"

Make sure that there are no inconsistencies in thin or thick provisioning attributes between *resource_name* and *target*, and then perform the operation again.

If this message is output when detaching a disk from a virtual L-Server, either move the virtual storage in which that disk exists to an appropriate thin/thick pool, or create an appropriate thin/thick disk and copy the data to that disk, and then perform the operation again.

62514

FJSVrcx:ERROR:62514:Selectable VM host not found. (*detail*)

[Description]

No available VM host was found.

The error may be the result of one of the following:

- There is no object that meets the conditions

- Creation of an L-Server from the ROR console, specifying values in the definition file. The values are larger than the actual number of CPUs and CPU clock speed of a server for which server management software is not used

- In environments where Hyper-V VM hosts without Windows Server 2008 R2 Service Pack 1 (SP1) or SCVMM that has not been upgraded to System Center Virtual Machine Manager 2008 R2 Service Pack 1 (SP1) or later are being used, one of the following operations was performed:

  - Creation of an L-Server for which dynamic memory is enabled

  - Enabling of dynamic memory using L-Server specification changes

- In environments where an SCVMM that has not been upgraded to Microsoft(R) System Center 2012 Virtual Machine Manager or later is being used, the following operation was performed:

  - Creation of an L-Server specifying a disk that was allocated from a virtual storage and saved

[Corrective Action]

Take corrective action based on the content of *detail*.

- "one of power status, monitoring status, or maintenance mode is invalid"

Perform the operation again after checking whether a VM host in the following state exists:

  - Power is ON

  - Monitoring status is normal

  - Maintenance mode is not set

  - Maintenance mode has not been set for the server virtualization software

- "no other available VM host found"

When performing migration, if this message is output, take the following corrective action according to the values specified during migration:

  - When specifying "Automatic Selection" for the destination VM host, or when executing the rcxadm lserver migrate command without specifying the -to option)

  The resources used by the L-Server do not contain a VM host that satisfies the conditions described in "one of power status, monitoring status, or maintenance mode is invalid", except the one to migrate.

  Specify the destination VM host, and then perform the operation again.

  For how to confirm the resources to use, refer to "11.7 Migration of VM Hosts between Servers" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- When specifying "VM host" for the destination VM host, or when executing the rcxadm lserver migrate command specifying the -to option)

  The specified VM host does not satisfy the conditions described in "one of power status, monitoring status, or maintenance mode is invalid". Specify another VM host, and then perform the operation again.

- "not enough CPU or memory available"

  There is a chance that there are not enough available resources for the CPU or memory of a VM pool. Check the available resources for the CPU and memory of the VM pool.

  Perform the operation again after performing the following corrective actions:

  - If there is insufficient CPU performance or memory resources of the VM pool

    Add a VM host to the VM pool.

  - If there is no VM host in the VM pool that meets CPU performance or the number of CPUs specified for an L-Server or an L-Server template

    Change the CPU performance or the number of CPUs specified for an L-Server or an L-Server template, or add a VM host meeting the necessary performance to the VM pool.

- "there is a VM host with sufficient reservation capacity, but not enough CPU or memory"

  There is a possibility that there is a VM host with sufficient reservation capacity for failover in the VM pool, and there are not enough available CPU or memory resources in the VM pool. Check the cluster configuration of the server virtualization software, correct the reservation capacity, and then perform the operation again.

  If the problem is still not resolved after performing the corrective actions above, perform the following corrective actions:

  - If there is insufficient CPU performance or memory resources of the VM pool

    Add a VM host to the VM pool.

  - If there is no VM host in the VM pool that meets CPU performance or the number of CPUs specified for an L-Server or an L-Server template

    Change the CPU performance or the number of CPUs specified for an L-Server or an L-Server template, or add a VM host meeting the necessary performance to the VM pool.

- "no sharable datastore found"

  Perform the operation again after checking whether a VM host sharing a datastore exists.

  If this message is displayed when performing migration, check whether the datastore is shared between the VM host where the L-Server is deployed and the "VM host" set for the L-Server using VM management software. If the datastore is not shared, specify a VM host that shares the datastore with the destination VM host, and then perform the operation again.

  When migrating between VM hosts that do not share a datastore, perform the operation using VM management software.

  For how to confirm the VM host to use, refer to "11.7 Migration of VM Hosts between Servers" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

  If this message is output when creating or starting a virtual L-Server that has disk resources that were created (and saved) from virtual storage, check all such disk resources connected to the L-Server and ensure that a VM host that can access the datastore which generated such disk resources exists, and then perform the operation again.

- "no valid HA configuration of the server virtualization software found"

  Check and correct the following from the management window of the server virtualization software, and perform the operation again.

  - That there are two or more VM hosts in the same cluster on the server virtualization software

  - That the HA function is enabled in the cluster configuration of the VM hosts

- "no accessible VM host or VM pool found"

  Check the following and perform the operation again.

  - That there is an accessible VM pool

- That there is a VM host in the VM pool

- When an L-Server has been created without configuring overcommit, depending on the VM host selection status, confirm the following:

  - When "Automatic Selection" is selected

    If a VM pool for which overcommit is not configured exists in the accessible area, and if a VM host exists under the VM pool

  - When "VM Pool" is selected

    If overcommit is not configured in the specified VM pool, and if a VM host exists under the VM pool

  For details on overcommit, refer to the "Overcommit" section of the server virtualization software to use in the "Appendix E Design and Configuration For Creating Virtual L-Servers" in the "Setup Guide CE".

  [Hyper-V]
  Check if Windows Server 2008 R2 Service Pack 1(SP1) has been applied to the VM hosts and if SCVMM has been upgraded to System Center Virtual Machine Manager 2008 R2 Service Pack 1 (SP1) or later. If not, apply the appropriate Service Pack and then perform the operation again. When not applying Service Pack, disable dynamic memory and the priority of memory allocation, and perform the operation again.

- "no accessible VM pool for over commit found"

  Check the following and perform the operation again.

  - That there is a VM pool for overcommit and that there is a VM host under that VM pool

  - That both VM pools (the one that is set for overcommit and the one that is not) are inside the access scope

  For details on overcommit, refer to the "Overcommit" section of the server virtualization software to use in the "Appendix E Design and Configuration For Creating Virtual L-Servers" in the "Setup Guide CE".

- "combination of image and VM host combination is incorrect"

  A template corresponding to the cloning image to deploy and the VM host to which the cloning image is deployed must belong to the Oracle VM server pool.

  On Oracle VM Manager, perform configuration so the VM host exists in the same Oracle VM server pool as the template corresponding to the cloning image to deploy.

  Also, register the VM host in a VM pool included in the access scope, and then perform the operation again.

  If the problem is still not resolved after performing the above actions, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

  For how to check the VM host status and free space, refer to "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- "product version of VM management software"

  Check if the SCVMM being used has been upgraded to Microsoft(R) System Center 2012 Virtual Machine Manager or later. If not, upgrade the SCVMM and then perform the operation again.

62517

FJSVrcx:ERROR:62517:Specified VM host is not available. (*detail*)

[Description]

The specified VM host cannot be used.

The error may be the result of one of the following:

- The specified VM host does not satisfy the conditions for the given operation

- Creation of an L-Server from the ROR console, specifying values in the definition file. The values are larger than the actual number of CPUs and CPU clock speed of a server for which server management software is not used

- In environments where Hyper-V VM hosts without Windows Server 2008 R2 Service Pack 1 (SP1) or SCVMM that has not been upgraded to System Center Virtual Machine Manager 2008 R2 Service Pack 1 (SP1) or later are being used, one of the following operations was performed:

    - Creation of an L-Server for which dynamic memory is enabled

    - Enabling of dynamic memory using L-Server specification changes

[Corrective Action]

Check the content displayed in *detail*, and take corrective actions described in "Message number 62514".

62520

FJSVrcx:ERROR:62520:port-set is not defined for the storage unit (*storage_unit_ipaddr*) in *pattern*

[Description]

The port combination for the storage unit at *storage_unit_ipaddr* is not defined in the port combination definition file for SAN storage "storage_portset.rcxprop".

In *storage_unit_ipaddr*, one of the following is displayed:

- For ETERNUS Storage

  The IP address of the admin LAN port of ETERNUS storage is displayed.

- For EMC CLARiiON Storage

  The IP address of the SP of EMC CLARiiON storage is displayed.

- For EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage

  The Symmetrix ID of EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage is displayed.

In *pattern*, the following is displayed:

- SAN storage port combination definition file

  "storage_portset. rcxprop" is displayed.

- FC connection pattern file

  "FC connection pattern file name.rcxprop" is displayed.

[Corrective Action]

Notify the infrastructure administrator of the information in this message.

The infrastructure administrator should define the port combination for the storage unit at *storage_unit_ipaddr*, referring to "6.1.1 Creating Definition Files for Combining Ports for SAN Storage" or "Setting the Number of FCs Fitted and their Position for Each Physical Server" in the "Setup Guide CE".

62521

FJSVrcx:ERROR:62521:unavailable port (*port*) is defined for the storage unit (*storage_unit_ipaddr*) in *pattern*

[Description]

In the port combination definition file for SAN storage, "storage_portset.rcxprop", an unavailable port is defined for the port combination for the storage unit at *storage_unit_ipaddr*.

In *port*, the unavailable port that is defined in the port combination definition file for SAN storage, "storage_portset.rcxprop", is displayed.
In *storage_unit_ipaddr*, one of the following is displayed:

- For ETERNUS Storage

  The IP address of the admin LAN port of ETERNUS storage is displayed.

- For EMC CLARiiON Storage

  The IP address of the SP of EMC CLARiiON storage is displayed.

- For EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage

  The Symmetrix ID of EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage is displayed.

In *pattern*, the following is displayed:

- SAN storage port combination definition file

  "storage_portset. rcxprop" is displayed.

- FC connection pattern file

  "FC connection pattern file name.rcxprop" is displayed.

[Corrective Action]

Notify the infrastructure administrator of the information in this message.

The infrastructure administrator should review the port combination for the storage unit at *storage_unit_ipaddr*, referring to "6.1.1 Creating Definition Files for Combining Ports for SAN Storage" or "Setting the Number of FCs Fitted and their Position for Each Physical Server" in the "Setup Guide CE".

62522

FJSVrcx:ERROR:62522:duplicated port (*port*) definition found for the storage unit (*storage_unit_ipaddr*) in *pattern*

[Description]

Duplicate port combinations are defined for the storage unit at *storage_unit_ipaddr* in the port combination definition file for SAN storage "storage_portset.rcxprop".

In *port*, the duplicate port that is defined in the port combination definition file for SAN storage, "storage_portset.rcxprop", is displayed. In *storage_unit_ipaddr*, one of the following is displayed:

- For ETERNUS Storage

  The IP address of the admin LAN port of ETERNUS storage is displayed.

- For EMC CLARiiON Storage

  The IP address of the SP of EMC CLARiiON storage is displayed.

- For EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage

  The Symmetrix ID of EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage is displayed.

In *pattern*, the following is displayed:

- SAN storage port combination definition file

  "storage_portset. rcxprop" is displayed.

- FC connection pattern file

  "FC connection pattern file name.rcxprop" is displayed.

[Corrective Action]

Notify the infrastructure administrator of the information in this message.

The infrastructure administrator should review the port combination for the storage unit at *storage_unit_ipaddr*, referring to "6.1.1 Creating Definition Files for Combining Ports for SAN Storage" or "Setting the Number of FCs Fitted and their Position for Each Physical Server" in the "Setup Guide CE".

62523

FJSVrcx:ERROR:62523:port-set defined for the storage unit (*storage_unit_ipaddr*) in storage_portset.rcxprop must include a pair of ports

[Description]

The port combination for the storage unit at *storage_unit_ipaddr* defined in the port combination definition file for SAN storage, "storage_portset.rcxprop", is not defined using a port pair.

In *storage_unit_ipaddr*, one of the following is displayed:

- For ETERNUS Storage

  The IP address of the admin LAN port of ETERNUS storage is displayed.

- For EMC CLARiiON Storage

  The IP address of the SP of EMC CLARiiON storage is displayed.

- For EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage

  The Symmetrix ID of EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage is displayed.

[Corrective Action]

Notify the infrastructure administrator of the information in this message.

The infrastructure administrator should review the port combination for the storage unit at *storage_unit_ipaddr*, referring to "6.1.1 Creating Definition Files for Combining Ports for SAN Storage" in the "Setup Guide CE".

62525

FJSVrcx:ERROR:62525:*key*:is specified in duplicate

[Description]

More than one *key* is specified.

[Corrective Action]

If this message is output during the following operation, after reviewing the content of the XML file specified during the operation, ensure that there is only one entry for the element specified in *key*, and perform the operation again.

Registering or changing disk resources for a VM guest

- When *key* is "Pool"

  Ensure that only one Pool element is defined.

- When *key* is "VmHosts"

  Ensure that only one VmHosts element is defined.

- When *key* is "VmHost(ip=*IP address of VM host defined in XML*)"

  Ensure that only one VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip is defined.

- When *key* is "VmHost(ip=*IP address of VM host defined in XML*).Disks"

  Ensure that only one Disks tag is defined in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

- When *key* is "VmHost(ip=*IP address of the VM host defined in the XML*).Disks.Disk(name=*Disk resource name defined in XML*)"

  Ensure that only one Disk element to which the *disk resource name defined in the XML* is specified for name is defined in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

- When *key* is "VmHost (ip=*IP address of the VM host defined in XML*).Disks.Disk(path=*Device path to the disk resource defined in XML*)*"

Ensure that only one Disk element to which the *device path to the disk resource defined in the XML* is specified for path is defined in the VmHost element to which *an IP address of the VM host defined in the XML* is specified for ip.

62526

FJSVrcx: ERROR: 62526: The port-set for Servers and Storages must be the same number defined for (*storage_unit_ipaddr*) in *pattern*

[Description]

The port combination of the storage unit of the *storage_unit_ipaddr* file defined by the SAN storage port combination is not defined in the 2 port combination.

- *storage_unit_ipaddr*

  - For ETERNUS Storage

    The IP address of the admin LAN port of ETERNUS storage is displayed.

  - For EMC CLARiiON Storage

    The IP address of the SP of EMC CLARiiON storage is displayed.

  - For EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage

    The Symmetrix ID of EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage is displayed.

- *pattern*

  - FC connection pattern file

    "FC connection pattern file name.rcxprop" is displayed.

[Corrective Action]

Notify the infrastructure administrator of the information in this message.

Refer to "Setting the Number of FCs Fitted and their Position for Each Physical Server" in the "Setup Guide CE", and review the port combinations for *storage_unit_ipaddr* storage unit (as infrastructure manager).

62527

FJSVrcx: ERROR: 62527:the number of ports is invalid for the storage unit (*storage_unit_ipaddr*) in *pattern*

[Description]

The port combination of the storage unit of the storage_unit_ipaddr file defined by the SAN storage port combination is defined using an invalid number of ports.

- *storage_unit_ipaddr*

  - For ETERNUS Storage

    The IP address of the admin LAN port of ETERNUS storage is displayed.

  - For EMC CLARiiON Storage

    The IP address of the SP of EMC CLARiiON storage is displayed.

  - For EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage

    The Symmetrix ID of EMC Symmetrix DMX Storage or EMC Symmetrix VMAX Storage is displayed.

- *pattern*

  - FC connection pattern file

    "FC connection pattern file name.rcxprop" is displayed.

[Corrective Action]

Notify the infrastructure administrator of the information in this message.

Refer to "Setting the Number of FCs Fitted and their Position for Each Physical Server" in the "Setup Guide CE", and review the port combinations for *storage_unit_ipaddr* storage unit (as infrastructure manager).

62528

FJSVrcx:ERROR:62528:number of columns must be *num* at line *line* in *filename*

[Description]

The number of columns is not *num* in the *line* item of the file displayed in *filename*.

[Corrective Action]

Check the *line* item in the file displayed in *filename* and confirm that the number of columns is *num*.

62529

FJSVrcx:ERROR:62529:field value missing in line *line* of *filename*

[Description]

Field value has not been specified in the *line* item of the file displayed in *filename*.

[Corrective Action]

Check the *line* item in the file displayed in *filename* and confirm that a field value has been specified.

62530

FJSVrcx:ERROR:62530:incorrect field value in line *line* of *filename*

[Description]

Invalid field value in the *line* item of the file displayed in *filename*.

[Corrective Action]

Check the *line* item in the file displayed in *filename* and confirm that field value is correct.

- "storage_mirroring.rcxprop" is displayed in *filename*

  Check the following:

  - The RAID group number or TPP number is a hexidecimal of 4 digits starting with 0x.

    The virtual storage type is "RAID" or "TPP".

62531

FJSVrcx:ERROR:62531:duplicated *item*(*value*) definition found for the storage unit (*ip-address*) in *filename*

[Description]

In the file displayed in *filename*, the *item* definitions for the storage unit of *ip-address* are duplicated.

- *item*

  BOX-ID Storage unit BOX-ID of ETERNUS

  RAID Storage unit RAID group number of ETERNUS

  TPP Storage unit TPP number of ETERNUS

- *value*

  Value of the *item* where definitions are duplicated

[Corrective Action]

In the file displayed in *filename*, check that the definitions for the storage unit of *ip-address* are not duplicated.

- "storage_mirroring.rcxprop" is displayed in *filename*

  Take corrective action based on the content of *item*.

  - BOX-ID

    There are multiple remote site storage unit specified as remote site storage unit. Review the definition.

  - RAID

    The RAID Group number on the local is duplicated. Review the definition.

  - TPP

    The TPP number on the local is duplicated. Review the definition.

62540

FJSVrcx:ERROR:62540:invalid date. (*option*)

[Description]

An incorrect value or time range was specified in *option*.

One of the following is output in *option*:

- -from

- -to

- -duration

- -from >= -to

[Corrective Action]

Refer to the command reference and specify a correct value or time range in *option*, then perform the operation again.

For details, refer to "1.7.15 rcxadm logctl".

62541

FJSVrcx:ERROR:62541:failed to *process* records. *detail*

[Description]

The process *process* for the log operation failed.

In *process*, "read", "delete", or "copy" is output.

[Corrective Action]

Check the system log, resolve the cause of the error, and then perform the operation again.

- Check if there are any error messages regarding the disk or file system.

- Check if there is a quota limit or file system full message.

62557

FJSVrcx:ERROR:62557:*obj* is not empty

[Description]

The specified *obj* is not empty.

[Corrective Action]

Perform the operation again after emptying the specified *obj*.

62558

FJSVrcx:ERROR:62558:*resource* in *obj1* is already used by *obj2*

[Description]

The *resource* in *obj1* is already used by *obj2*. When multiple resources are operated using one operation, only the first resource name an inconsistency was detected for is displayed.

[Corrective Action]

- When releasing registered resources from resource pools or deleting resource pools forcibly

  Perform the operation again, after changing the *resource* so it is not used.

- When VM management software is deleted

  Perform the operation again, after changing the *resource* so it is not used.

  If an L-Server is being managed by the VM management software, the VM management software cannot be deleted.
  If this message is displayed when deleting the VM management software, delete all L-Servers operating on VM hosts managed by the VM management software (*obj1*) for deletion.

  The VM host under the management of the VM management software that is to be deleted is displayed in *resource*. When there are multiple VM hosts, an arbitrary VM host will be displayed.

  The L-Server created in *resource* is displayed in *obj2*. When there are multiple L-Servers, an arbitrary L-Server will be displayed.

- When storage management software is deleted

  If an L-Server using virtual storage resource is being managed by the storage management software, the storage management software cannot be deleted.
  If this message is displayed when deleting the storage management software, delete all L-Servers using virtual storage resource managed by the storage management software (*obj1*) for deletion.

  The virtual storage resource under the management of the storage management software that is to be deleted is displayed in *resource*. When there are multiple virtual storage resources, an arbitrary virtual storage resource will be displayed.

  The L-Server using *resource* is displayed in *obj2*. When there are multiple L-Servers, an arbitrary L-Server will be displayed.

  If there is a storage pool managed by the storage management software that has virtual storage resources registered, the storage management software cannot be deleted.

  If this message is displayed when deleting storage management software, release virtual storage resources managed by the storage management software (*obj1*) that will be deleted.

  The virtual storage resource under the management of the storage management software that is to be deleted is displayed in *resource*.

  When there are multiple virtual storage resources, an arbitrary virtual storage resource will be displayed.

  The storage pool in which *resource* is registered is displayed in *obj2*. When there are multiple storage pools, an arbitrary storage pool will be displayed.

  When a disk resource corresponding to the LUN created in advance has been registered in a storage pool, storage management software corresponding to the disk resource cannot be deleted. Before deleting the storage management software, unregister the disk resource corresponding to the LUN created in advance from the storage pool.

- When creating a physical L-Server:

  In this case, the following messages will be output in the event log:

- When "(create)" follows after *resource*

   The specified physical server resource is already assigned as an L-Server, or registered as a spare server.

- When "(Spare)" follows after *resource*

   The physical server resource specified as a spare server is already assigned as an L-Server, or registered as a spare server.

- When "(Primary)" follows after *resource*

   The physical server resource specified in the physical server usage change is already assigned as an L-Server, or registered as a spare server.

Specify a physical server resource or resource pool that is already registered, and perform the operation again.

- When IP address is displayed in *resource*

The network resource of the specified IP address has already been allocated to another L-Server. Specify an unused IP address for the network resource, and perform the operation again.

- When an address set resource is deleted

Perform the operation again, after changing the *resource* so it is not used.

If an L-Server using a WWN and a MAC address selected from an address set resource exists, the address set resource cannot be deleted.

If this message is displayed when deleting an address set resource, execute the rcxadm addrset show command to check the WWN or the MAC address in use, then delete all L-Servers for which the WWN and the MAC address are set.

The WWN and the MAC address used by the L-Server are displayed in *resource*. If multiple WWNs and MAC addresses exist, one WWN or one MAC address is displayed at random.

   - The address set resource name for deletion is displayed in *obj1*.

   - "L-Server" is displayed in *obj2*.

- When a managed server is modified or deleted

Perform the operation again, after changing the *resource* so it is not used.

If there is a physical L-Server for which the same admin IP address as that of the specified managed server has been set, the managed server cannot be modified or deleted.

   - If this message is output when modifying a managed server

      Change the admin IP address of the physical L-Server displayed in *obj2*, and then perform the operation again.

   - If this message is output when deleting a managed server

      Delete the physical L-Server displayed in *obj2*, or release the managed server from the physical L-Server, and then perform the operation again.

The admin IP address used by a physical L-Server is displayed in *resource*.

   - The name of the network resource in use is displayed in *obj1*.

   - The name of the physical L-Server for which the same IP address as that of the specified managed server has been set, is displayed in *obj2*.

- When a network device is modified or deleted

If necessary, change the *resource* so it is not used, and then perform the operation again.

62559

FJSVrcx:ERROR:62559:external script *script_name* execution error *detail*

[Description]

An error occurred while executing a script registered for external integration.

If other software is integrated into Resource Orchestrator, refer to the manuals for that software and check whether *script_name* is registered.
If *script_name* is registered, refer to the manual of that software.

If the integrated software cannot be found, collect this message and troubleshooting data, and contact Fujitsu technical staff.

62560

FJSVrcx:ERROR:62560:Disk (*diskname*) not found on the VM host (*vmhost*).

[Description]

The disk corresponding to the specified *diskname* is not recognized by *vmhost*.

In *diskname*, the name of the disk resource registered with the admin server is displayed.

In *vmhost*, the name of the VM host registered with the admin server is displayed.

[Corrective Action]

Check and modify the storage settings so that the disk can be recognized by *vmhost*.

62561

FJSVrcx: ERROR: 62561: The value of *item*, in *filename*, is invalid. Detail=*detail*

[Description]

The value of *item* of *filename* is invalid.

- *item* is NUM_OF_FC
  the following is displayed in *detail*.

  please specify the value as 1, 2, or 4

- *item* is BOOT_FC_PORT
  the following is displayed in *detail*.

  please specify the value within the range of NUM_OF_FC

- When *item* is STORAGE_0, one of the following is displayed for *detail*:

  please specify the correct format

[Corrective Action]

Notify the infrastructure administrator of the information in this message.

Refer to "Setting the Number of FCs Fitted and their Position for Each Physical Server" in the "Setup Guide CE", and review the item value (as infrastructure manager)

62565

FJSVrcx:ERROR:62565:specified resource *value* not found in the source *pool*.

[Description]

The specified resource *value* does not exist in the source *pool*. One of the following is displayed in *value*.

- Resource name

  The resource may have been deregistered from the pool or it may have been moved to a different pool.

- "" (empty string)

  The resource may have been deleted.

[Corrective Action]

Check the content displayed in *value*, eliminate the cause of the error and then re-execute.

- Resource Name

  Deselect the *value* in the resource list, then retry. Alternatively, close the dialog box and try again.

- In the case of "" (empty string)

  Close the dialog box and try again.

62566

FJSVrcx:ERROR:62566:the destination *pool* not found.

[Description]

A *pool* that does not exist has been specified as the destination. The destination may have been deleted.

[Corrective Action]

Close the dialog box and check that the destination exists.

62567

FJSVrcx:ERROR:62567:*dest*:destination is *type*, not a resource pool.

[Description]

A *type* other than a resource pool has been specified in *dest*, so the transfer is not possible. The resource pool specified at the destination must be the same as the resource type at the source.

[Corrective Action]

Change the destination and then try again.

62568

FJSVrcx:ERROR:62568:*dest*:pool type is *dest_type*, not *source_type*

[Description]

A pool type *dest_type* has been specified as the destination *dest* that differs from the pool type *source_type* for the source, so the transfer is not possible. The resource pool specified at the destination must be the same as the resource type at the source.

[Corrective Action]

Change the destination and then try again.

62569

FJSVrcx:ERROR:62569:*name*:*type* import was interrupted.message=*message*

[Description]

An error occurred while performing the import process. The following information is stored in an error message:

- type=*type*

  Resource type where the error occurred (template, folder, pool, network, addrset, image, lserver, user, usergroup, firewall) is displayed.

- message=*message*

  Details of the error that occurred are displayed.

  If the resource type is pool, addrset, lserver, network, or firewall, the following is also displayed.

- name=*name*

  The name specifying the resource where the error occurred is displayed. If the name cannot be determined, id = resource ID is displayed.

📝 Example

••

(L-Server) : /tenant1/l-platform1/l_server1

The *name* part is not display for any other type.

••

[Corrective Action]

Take the following action for each of the error messages:

If this does not resolve the problem, collect this message and troubleshooting data, and contact Fujitsu technical staff.

- *type* is template, folder, pool, network, addrset, user, usergroup

  Refer to the *message* error message, take the appropriate action, then re-import.

- *type* is lserver and the *message* is ":67154:VM Guest not found"

  Use rcxadm config show to view the VM name, host name, and external identifier, then reregister the VM on the import destination.

  If the VM is not included in the disk where storage replication was performed, remove the L-Server from the import configuration definition information, then perform import again.

- *type* is lserver and the *message* is "67154:value:not found"

  Use rcxadm config show to determine the resources relevant to the ServerType and value of the L-Server.

  - ServerType is Virtual, and "VirtualStorage name="value"" is in the relevant value

    The virtual storage is not registered in a storage pool that can be viewed from the location where the L-Server is deployed. Check that the following resources (relevant to value in the VM management software registered with Resource Orchestrator) have been correctly registered, then perform import again.

    - vCenter: Data store name

    - SCVMM: Cluster Shared Volume name

  - If the resources are not registered with the VM management software, for example if virtual storage is not included in the disk where storage replication was performed

    After removing the relevant L-Server from the configuration definition information for import, perform import again.

- *type* is firewall and the *message* is "67154:ProvisioningNode(name=*fw_device_name*):not found"

  Check if the network device for *fw_device_name* is registered in the network pool of the tenant for *name*.

  If it has not been registered, check if *fw_device_name* has been registered using another name in the server tree. Ensure that it is correctly registered, and then perform import again.

  If the network device cannot be registered because it does not exist in the destination environment, delete the *name* L-Platform, following the procedure described in "15.3 Switchover Operations when Damaged" in the "Operation Guide CE". During the deletion procedure, make a note of the L-Platform name, and delete the L-Platform after the import process is complete.

- *type* is image, and the *message* is "67154:*obj* not found"

  Check that there is VM management software with an image registered, or a VM host's server registered, if there is not one registered, register one and then perform import again.

- In other cases

  Refer to the *message* error message, take the appropriate action, then re-import.

62570

FJSVrcx:ERROR:62570:conflicting resource identifier found.

[Description]

A resource identifier for import conflicts with another resource identifier.

The rcxadm config reserve command is not executed in the DR procedure.

[Corrective Action]

Install the manager again. After installation, following the DR procedure, execute the rcxadm config reserve command and the rcxadm config import command.

62580

FJSVrcx:ERROR:62580: *soft*:storage(*detail*) not found.

[Description]

The IP address of the storage unit has not been registered in the storage management product **soft**.

[Corrective Action]

Check the following, resolve the cause of the error, and then perform the operation again.

- The specified storage unit has been registered in the storage management product *soft*.

- The IP address of the storage unit has been registered in the storage management product soft.

62581

FJSVrcx:ERROR: 62581: *soft*:no replication definitions found.

[Description]

Cannot find replication definition.

[Corrective Action]

After checking that the replication definitions have been correctly registered with the storage management product *soft*, retry.

62582

FJSVrcx:ERROR:62582: *soft*:can not get ip address for storage.(*detail*)

[Description]

The IP address of the storage apparatus has not been registered in the storage management product soft.

[Corrective Action]

Perform one of the following corrective actions:

- After setting the IP address of the storage apparatus in the storage management product soft, execute the command again.

- Once the -local option is specified, specify the IP address and Box ID with the -remote option, then retry.

62583

FJSVrcx:ERROR:62583:mistake in content of *N*th *tag_name* tag. name=*name* (*detail_message*)

[Description]

The settings of the *n*th *tag_name* tag (*name*) in the definition file are incorrect. In *detail_message*, a message indicating the cause is displayed. All operations described in the definition file have not been completed.

[Corrective Action]

Refer to the corrective action of the message displayed in *detail_message*. Remove the cause of error, and execute the operation again.

62584

FJSVrcx:ERROR:62584:operation failed at *N*th User tag. name=*user* (*detail_message*)

[Description]

Operations of the *n*th User tag (*user*) in the definition file failed. In *detail_message*, a message indicating the cause is displayed. The user operations described before the *user_id* that caused an error in the definition file have been completed.

[Corrective Action]

Refer to the corrective action of the message displayed in *detail_message*. Remove the cause of error, create the definition files for after the *user* that failed, and execute the operation again.

62585

FJSVrcx:ERROR:62585:operation failed at *N*th Tenant tag. name=*tenant* (*detail_message*)

[Description]

Operations of the *n*th Tenant tag (*tenant*) in the definition file failed. The message that is the cause is displayed in *detail_message*. All operations described in the definition file have not been completed.

[Corrective Action]

Refer to the corrective action of the message displayed in *detail_message*. Remove the cause of error, and execute the operation again.

62586

FJSVrcx:ERROR:62586:*user_group*:tenant user group names cannot be specified for users with infrastructure roles

[Description]

It is not possible to specify a user group that is used to manage tenants for the user group *user_group* of users with an infrastructure administrative role or multiple role.

[Corrective Action]

Specify a user group other than a user group used to manage tenants.

62587

FJSVrcx:ERROR:62587:*option* can only be specified once for users with tenant roles

[Description]

The option *option*, which can only be specified once for a user with a tenant administrator role or tenant user role, has been specified multiple times.

[Corrective Action]

Specify only one *option*.

62588

FJSVrcx:ERROR:62588:*role*:invalid role name

[Description]

One of following, which cannot be configured, was specified for the role *role*.

- lplatform_user was specified for the role when creating a user.

- Only lplatform_user was specified for the role when modifying a user.

[Corrective Action]

Configure the correct role.

- When creating a user, specify a role other than lplatform_user.

- When specifying lplatform_user, if modifying a user, also specify the tenant user role.

62589

FJSVrcx:ERROR:62589:users with *old_role* cannot be changed to *new_role*

[Description]

One of following roles, which cannot be changed, was specified.

- An attempt was made to change from a tenant management role or tenant user role to an infrastructure administrative role or a multiple role.

- An attempt was made to change from an infrastructure administrative role or a multiple role to a tenant management role or tenant user role.

[Corrective Action]

When changing a role, specify a role in the following scopes:

- When changing a tenant management role or a tenant user role, specify one of these two roles.

- When changing an infrastructure administrative role or a multiple role, specify one of these two roles.

62590

FJSVrcx:ERROR:62590:*tenant*:not root folder

[Description]

An attempt was made to create a tenant *tenant* other than a root folder

[Corrective Action]

Create a tenant in the root folder.

62591

FJSVrcx:ERROR:62591:*tenant*:same user group name already exists

[Description]

The tenant *tenant* with the same name as that of the user group cannot be created.

[Corrective Action]

For a tenant, specify a name other than the name of the current user group.

62592

FJSVrcx:ERROR:62592:*tenant* is not empty

[Description]

An L-Platform exists under the tenant *tenant*.

[Corrective Action]

Check if the specified tenant name is correct. When the tenant name is correct, delete the L-Platform under the tenant.

62593

FJSVrcx:ERROR:62593:*user_group* of tenant is not empty

[Description]

A user exists in the user group *user_group* used for managing tenants.

[Corrective Action]

Check if the specified tenant name is correct. When the tenant name is correct, delete the users belonging to the user group used for managing tenants.

62594

FJSVrcx:ERROR:62594:*operation* of *user_group* is not possible

[Description]

The user group *user_group* used for managing tenants cannot be changed or deleted.

[Corrective Action]

Check if the specified user group is correct. The user group managing a tenant is deleted, at the same time as the tenant is deleted.

62595

FJSVrcx:ERROR:62595:*param_names*:mandatory parameter not defined in *file*

[Description]

Necessary settings have not been configured in the tuning parameter file "*file*".
In *param_names*, all parameters that have not been configured are displayed.

- If *file* is the definition file for alive monitoring

   "alive_monitoring/*definition file name*.rcxprop" is displayed.

[Corrective Action]

- If *file* is the definition file for alive monitoring

   Notify the infrastructure administrator of the information in this message.

   The infrastructure administrator should review the settings, referring to "Definition File for Alive Monitoring" in "D.5.1 Definition Files" in the "Setup Guide CE".

62700

FJSVrcx:ERROR:62700:*name*:virtual switch creation failed on server *server* (*code*)

[Description]

Failed to create the virtual switch *name* on server *server*.

- If the target server is a Hyper-V server

   Virtual switch indicates the virtual network of Hyper-V.

[Corrective Action]

Take corrective action based on the content of *code*.

- If *code* is "15" or "1511"

  There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

  When using Intel PROSet in Hyper-V, refer to "E.3.5 Advisory Notes for Hyper-V Usage" of the "Setup Guide CE".

- If *code* is "16", "1524", or "1525"

  The VM host could not be found.

  Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

- If *code* is "100", "115", "1512", "1526", "1527", "1528", "1529", or "1531"

  The login account information for the VM host/VM management software entered during registration may not have the required privileges.

  Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

  For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

  When using Intel PROSet in Hyper-V, refer to "E.3.5 Advisory Notes for Hyper-V Usage" of the "Setup Guide CE".

- If *code* is "101", "110", "111", "112", "114", "116", or "1509"

  Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "113" or "1510"

  The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.

  Change the entered values (user name and password) for the login account information to the correct values.

  For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *code* is "500", "511", "1530", "1532", "1533", "1534", or "1600"

  Failed to create the virtual switch as the configuration of the physical network adapter and virtual switch of the VM host/VM management software is not capable of creating the virtual switch. Check the configuration of the physical network adapter and virtual switch of the VM host/VM management software, referring to "7.3 Network Resources" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

  When using Intel PROSet in Hyper-V, refer to "E.3.5 Advisory Notes for Hyper-V Usage" of the "Setup Guide CE".

- If *code* is "513" or "1601"

  Failed to create the virtual switch as the physical network adapter to connect to another virtual switch is in use. Check the network settings of the VM host/VM management software.

  Creation of the virtual switch failed as the type (active or standby) of the physical network adapter for connection to another virtual switch is different from that of other virtual switches. Check the physical LAN segment specified in the network configurations and network resources of VM hosts and VM management software.

- If *code* is "514" or "515"

  Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "1599"

  Failed to create the virtual switch as the response from the VM host or VM management software to the admin server is not correct. Check the operation status and network settings of the VM host or VM management software.

  When using Intel PROSet in Hyper-V, refer to "E.3.5 Advisory Notes for Hyper-V Usage" of the "Setup Guide CE".

- If *code* is "1602"

    Creation of the virtual switch failed because the virtual switch name already exists. Change the virtual switch name of the VM host/VM management software.

When creating network resources using unsupported network configurations for the automatic network configuration, create the network resources manually.

Note that if network resources are to be created using this configuration, specify auto="false" in the Network tag of the XML file that defines the network resource and then retry.

For details on creation of the XML file defining network resources and Network elements, refer to "2.5.1 Creation".

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *code*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62701

FJSVrcx:ERROR:62701:*name*:virtual switch deletion failed on server *server* (*code*)

[Description]

Failed to delete the virtual switch *name* on server *server*.

- If the target server is a Hyper-V server

    Virtual switch indicates the virtual network of Hyper-V.

[Corrective Action]

Take corrective action based on the content of *code*.

As the virtual switch *name* remains on the server *server*, check its usage status and if it is no longer necessary, delete the virtual switch from the VM management software.

- If *code* is "15" or "1511"

    There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "16", "1524", or "1525"

    The VM host could not be found.

    Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

- If *code* is "100", "115", or "1512"

    The login account information for the VM host/VM management software entered during registration may not have the required privileges.

    Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

    For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *code* is "101", "110", "111", "112", "114", "116", or "1509"

    Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "113" or "1510"

    The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.

    Change the entered values (user name and password) for the login account information to the correct values.

For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *code* is "520"

Failed to delete the virtual switch. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Resolve the problem with the VM host/VM management software.

- If *code* is "522"

Failed to delete the virtual switch as the switch is in use. If the virtual switch is not necessary, delete the virtual switch from the VM management software.

- If *code* is "523" or "524"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *code*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62702

FJSVrcx:ERROR:62702:*name*:virtual network creation failed on server *server* (*code*)

[Description]

Failed to create the virtual network *name* on server *server*.

- When the target server is a VMware server

The virtual network indicates a port group on the virtual switch.

[Corrective Action]

Take corrective action based on the content of *code*.

- If *code* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "16"

The VM host could not be found.

Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

- If *code* is "100" or "115"

The login account information for the VM host/VM management software entered during registration may not have the required privileges.

Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *code* is "101", "110", "111", "112", "114", or "116"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "113"

The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.

Change the entered values (user name and password) for the login account information to the correct values.

For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *code* is "610"

Failed to create the virtual network because the virtual network name already exists. Change the virtual network name for the VM host/VM management software.

- If *code* is "611"

Failed to create the virtual network. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

- If *code* is "613"

Failed to create the virtual network, as the virtual switch to connect to the virtual network cannot be found. Check the virtual switch of the VM host/VM management software.

- If *code* is "614" or "615"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *code*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62703

FJSVrcx:ERROR:62703:*name*:virtual network deletion failed on server *server* (*code*)

[Description]

Failed to delete the virtual network *name* on server *server*.

- When the target server is a VMware server

The virtual network indicates a port group on the virtual switch.

[Corrective Action]

Take corrective action based on the content of *code*.

As the virtual network *name* remains on the server *server*, check its usage status and if it is no longer necessary, delete the virtual network from the VM management software.

- If *code* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "16"

The VM host could not be found.

Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

- If *code* is "100" or "115"

The login account information for the VM host/VM management software entered during registration may not have the required privileges.

Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *code* is "101", "110", "111", "112", "114", or "116"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

- If *code* is "113"

The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.

Change the entered values (user name and password) for the login account information to the correct values.

For details on changing login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *code* is "620"

Failed to delete the virtual network. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Resolve the problem with the VM host/VM management software.

- If *code* is "622"

Failed to delete the virtual network as the virtual network being used by the VM guest. If the virtual network is not necessary, delete the virtual network from the VM management software.

- If *code* is "623" or "624"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *code*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

62704

FJSVrcx:ERROR:62704:*name*:virtual switch not found on server *server*

[Description]

The virtual switch *name* was not found on the server *server*.

[Corrective Action]

Perform the operation again after restoring the target virtual switch using the VM management software.

Due to the specification of an external port for the network resource corresponding to the virtual switch, it is necessary to connect to an appropriate physical network adapter. For details, refer to "7.3 Network Resources" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

62705

FJSVrcx:ERROR:62705:*name*:virtual network not found on server *server*

[Description]

The virtual network *name* was not found on the server *server*.

[Corrective Action]

Perform the operation again after restoring the target virtual network using the VM management software.

- When the virtual network *name* has the same name as a network resource

Check the VLAN ID of the network resource using the GUI, and set the same VLAN ID for the virtual network.

- When the virtual network *name* does not have the same name as a network resource

Create a virtual network with the same name as the virtual network created in advance on the server *server*.

- When the target server is a VMware server

    The virtual network indicates a port group on the virtual switch.

62706

FJSVrcx:ERROR:62706:virtual network *name*(vlan*id1*) already set vlan*id2* and exist

[Description]

An attempt was made to create a virtual network *name* assigned with vlan*id1*; however, a virtual network *name* assigned with vlan*id2* already exists.

[Corrective Action]

Perform the operation again after deleting the previously created virtual network *name* assigned with vlan*id2*, or changing the name of the virtual network on registered VM host server.

- When the target server is a VMware server

    The virtual network indicates a port group on the virtual switch.

62707

FJSVrcx:ERROR:62707: some virtual network that sets vlan*id* exists

[Description]

There are multiple virtual networks assigned with the same vlan*id*.

[Corrective Action]

Change the virtual network and vlan*id* combinations so that they are unique between the registered VM hosts.

Use a unique, case-sensitive virtual network name.

- When the target server is a VMware server

    The virtual network indicates a port group on the virtual switch.

    If the VLAN set in the service console or VMkernel network port group and the VLAN set in the port group used for the virtual machine are the same, then the "VMware Exclusion Port Group Definition File" needs to be configured.

    Refer to "When Using the Definition for Port Groups Excluded from the Selections for Automatic Network Configuration" in "E. 2.2 Preparations" in the "Setup Guide CE" for details.

    Also, if multiple pieces of server virtualization software are being used by one manager, then it may be influenced by the settings for the virtual switches, virtual networks, and virtual bridges on another piece of server virtualization software.

    - When Hyper-V is being used by another server

        In the settings for the virtual network to access the VM host through the VLAN, make sure the same VLAN is not set.

        If the same VLAN is set, change the VLAN or change the settings so the VLAN is not used.

62709

FJSVrcx:ERROR:62709:NIC(*number*) on server *server* not redundancy detail=(*mac*)

[Description]

NIC redundancy has not been configured for the combination of NIC (*number*) on the server *server*.

In *number*, the server NIC index numbers to connect with the virtual switches are displayed, separated by commas.
In *mac*, the MAC address information of the server NIC to connect with the virtual switches is displayed, separated by commas.

- If the target server is a Hyper-V server

  Virtual switch indicates the virtual network of Hyper-V.
  When creating a virtual switch, it is connected to NIC (*number*) on the server *server*.
  Redundancy may not have been configured for the NIC(*number*) in advance.

[Corrective Action]

- If the target server is a Hyper-V server

  Configure NIC redundancy using the combination of NIC (*number*) on the server *server*.

  If NIC redundancy has been already configured, the communication between admin server and server *server* have failed and NIC redundancy information may have not been obtained.
  Refer to the explanation in "Message number 67192" in the "Messages VE".

When creating network resources using unsupported network configurations for the automatic network configuration, create the network resources manually.

Note that if network resources are to be created using this configuration, specify auto="false" in the Network tag of the XML file that defines the network resource and then retry.

For details on creation of the XML file defining network resources and Network elements, refer to "2.5.1 Creation".

62710

FJSVrcx:ERROR:62710:*name1*:inconsistent virtual switch name *name2* on NIC(*number*) in server *server*

[Description]

The virtual switch *name1* cannot be created, as there is a virtual switch, *name2*, for NIC(*number*) on the server *server*.

In *number*, the server NIC index numbers to connect with the virtual switches are displayed, separated by commas.

- If the target server is a Hyper-V server

  Virtual switch indicates the virtual network of Hyper-V.

[Corrective Action]

Delete the virtual switch *name2* or change the name *name2* to the virtual switch *name1*.

62711

FJSVrcx:ERROR:62711:virtual switch *name* already exists on NIC expect NIC(*number*)

[Description]

The virtual switch *name* already exists on a NIC other than NIC(*number*).

In *number*, the server NIC index numbers to connect with the virtual switches are displayed, separated by commas.

- If the target server is a Hyper-V server

  Virtual switch indicates the virtual network of Hyper-V.

[Corrective Action]

Either delete the virtual switch *name* created on the interface, excluding NIC(*number*), or change the name of the virtual switch.

62712

FJSVrcx:ERROR:62712:NIC*number* is not connected to any of the external connection ports of the network resource *name* on the server *server*

[Description]

- When *server* is a physical server

The external connection port of the switch specified for the network resource *name* and NIC*number* are not connected.

- When *server* is a VM host

The external connection port of the switch specified in the network resource *name* is not connected to the NIC*number* used for the virtual network manually created by the user in advance.

[Corrective Action]

- When *server* is a physical server

Check the details related to the causes of the description above, and specify a NIC which can be connected with the network resource.

- When *server* is a VM host

Check the details related to the causes of the description above, and create the virtual network again. Create a network resource again after correcting the external connection port.

62717

FJSVrcx:ERROR:62717:Automatic Network Configuration does not support this configuration. detail=*detail*

[Description]

The specified configuration is unavailable for automatic network configuration.

In *detail*, the following detailed information is displayed:

- "different types of LAN switch blades *model*"

In the specified LAN switch blades on the external connection ports for the network resource, different models of LAN switch blades are selected in the combination *model* for the same chassis.

The model names of the LAN switch blades are output in *model*, separated by commas(",").

- "Physical NIC team of virtual switch *name* on the server *server* is not supported"

The physical NIC teaming configuration of the already created virtual switch *name* is not supported.

Physical NICs have not been connected with the virtual switch *name*. Otherwise teaming of three or more physical NICs has been performed for the virtual switch *name*.

- "Outside external port range:*exdetail*"

The external connection ports specified for the network resources are outside the range for automatic network configuration.

In *exdetail*, the following information is output:
The information for some items may not be obtained. In that case, "-" is displayed for the corresponding item.

Output Format

```
(port=(External_connection_port,LAN_switch_blade_name)[/
(...,...)],vmhost=Destination_VM_host_name,chassis=chassis_name)
```

- port

A pair of the external connection port number and the LAN switch blade name specified for the network resource is output. When multiple port information is output, each piece of information is output separated by a slash("/").

- vmhost

The name of the destination VM host is output.

- chassis

The name of the chassis is output.

- "Combination of external ports:*exdetail*"

The combination of the external connection ports specified for the network resource is out of the configuration for automatic network configuration.

In *exdetail*, the following information is output:
The information for some items may not be obtained. In that case, "-" is displayed for the corresponding item.

Output Format

```
(port=(External_connection_port,LAN_switch_blade_name)[/
(...,...)],vmhost=Destination_VM_host_name,chassis=chassis_name)
```

- port

  A pair of the external connection port number and the LAN switch blade name specified for the network resource is output. When multiple port information is output, each piece of information is output separated by a slash("/").

- vmhost

  The name of the destination VM host is output.

- chassis

  The name of the chassis is output.

- "Specified external port is not suitable for an existing composition:*exdetail1*,*exdetail2*"

The external connection port specified for the network resource does not match the configuration of the external connection port specified for the existing network resource.

In *exdetail1*, the following information is output as the network resource that was specified for creation:
The information for some items may not be obtained. In that case, "-" is displayed for the corresponding item.

Output Format

```
(port=(External_connection_port,LAN_switch_blade_name)[/(...,...)],chassis=chassis_name)
```

- port

  A pair of the external connection port number and the LAN switch blade name specified for the network resource is output. When multiple port information is output, each piece of information is output separated by a slash("/").

- chassis

  The name of the chassis is output.

In *exdetail2*, the following information is output as the existing network resource which was the cause of the relevant problem:
The information for some items may not be obtained. In that case, "-" is displayed for the corresponding item.

Output Format

```
(port=(External_connection_port,LAN_switch_blade_name)[/(...,...)],vlanid=vlanid,chassis=chassis_name)
```

- port

  A pair of the external connection port number and the LAN switch blade name specified for the network resource is output. When multiple port information is output, each piece of information is output separated by a slash("/").

- vlanid

  The vlanid specified for the network resource is output.

- chassis

  The name of the chassis is output.

- "Not supported chassis:*exdetail*"

The chassis to be used is not supported.

In *exdetail*, the following information is output:

Output Format

```
(model=Model_name_of_chassis)
```

- model

  The model name of the chassis is output.

- "External port cannot connect to server:*exdetail*"

  An external connection port connectible to the deployment destination VM host has not been specified for the network resource.

  In *exdetail*, the following information is output:
  The information for some items may not be obtained. In that case, "-" is displayed for the corresponding item.

  Output Format

```
(vmhost=Destination_VM_host_name)
```

  - vmhost

    The name of the destination VM host is output.

- "NIC is not recognized on the host:*exdetail*"

  The NIC on the server for which the external connection port specified in the network resource name is not recognized.

  In *exdetail*, the following information is output:

  Output Format

```
(server=(Server_name,index_number_of_physical_link_information))
```

  - server

    The NIC number on the deployment destination server which is not recognized as the destination server name is output.

[Corrective Action]

Check the configurations supported for automatic network configuration, and resolve the error.

Take corrective action based on the content of *detail*.

- "different types of LAN switch blades *model*"

  For each chassis, check that the same model of the LAN switch blade is specified on the external connection ports for the network resource.

  For LAN switch blades, the same model must be used in the same chassis, according to the following model combinations:

  - When the chassis is a BX900

    - CB1 and CB2

    - CB3 and CB4

    - CB5 and CB6

    - CB7 and CB8

  - When the chassis is a BX600

    - NET1 and NET2

    - NET3 and NET4

  - When the chassis is a BX400

    - CB1 and CB2

    - CB3 and CB4

- "Physical NIC team of virtual switch *name* on the server *server* is not supported"

  Create the virtual network on the server *server* again.

- "Outside external port range:*exdetail*"

  Confirm that each of the external connection ports specified for the network resource is selected according to the following model combination in the same chassis:
  If no external connection port is displayed, check all network resources connected to the L-Server.

  - When the chassis is a BX900

    - CB1 and CB2

    - CB3 and CB4

    - CB5 and CB6

    - CB7 and CB8

  - When the chassis is a BX600

    - NET1 and NET2

    - NET3 and NET4

  - When the chassis is a BX400

    - CB1 and CB2

    - CB3 and CB4

  For details, refer to "2.6 Registering Network Resources" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- "Combination of external ports:*exdetail*"

  Confirm that each of the external connection ports specified for the network resource is selected according to the following model combination in the same chassis:
  If no external connection port is displayed, check all network resources connected to the L-Server.

  - When the chassis is a BX900

    - CB1 and CB2

    - CB3 and CB4

    - CB5 and CB6

    - CB7 and CB8

  - When the chassis is a BX600

    - NET1 and NET2

    - NET3 and NET4

  - When the chassis is a BX400

    - CB1 and CB2

    - CB3 and CB4

  For details, refer to "2.6 Registering Network Resources" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- "Specified external port is not suitable for an existing composition:*exdetail1*,*exdetail2*"

  Check if the configuration of the specified external connection port specified for the network resource matches that of the external connection port specified for the network resource that has been already created.
  If no external connection port is displayed, check both network resources to be connected to the L-Server and existing network resources.

- "Not supported chassis:*exdetail*"

  Check if the chassis to be used is supported.

- "External port cannot connect to server:*exdetail*"

  Check if the external connection port connectible to the deployment destination VM host has been specified for the network resource.

  If multiple network resources are connected to the deployment target L-Server, check the external connection ports of all network resources.
  If no destination VM host name is displayed, check the external connection ports of all network resources to be connected to the L-Server.

- "NIC is not recognized on the host:*exdetail*"

  Confirm that the port information of individual servers and LAN switch blades is correctly recognized from the server tree in the ROR console.

When creating network resources using unsupported network configurations for the automatic network configuration, create the network resources manually.

Note that if network resources are to be created using this configuration, specify auto="false" in the Network tag of the XML file that defines the network resource and then retry.

For details on creation of the XML file defining network resources and Network elements, refer to "2.5.1 Creation".

62718

FJSVrcx:ERROR:62718:The value of *item*, *value*, is invalid. file=*filename*

[Description]

Processing was stopped, as errors were detected in the values specified in the definition file displayed in *filename*.

- If *filename* is an XML definition for server NIC definition file

  One of the following is displayed in *item*:

  - "NIC index"

    There is an error in the value specified for the NIC index.

  - "NIC redundant"

    There is an error in the value specified in the active or standby NIC type.

- "PhysicalLANSegment name"

  There is an error in the value specified for physical LAN segment name.

- If *filename* contains "alive_monitoring"

  There is an error in the value specified in the definition file for alive monitoring.

[Corrective Action]

- If *filename* is an XML definition for server NIC definition file

  Perform the operation again after reviewing the specified values of the XML definition of the server NIC definition files, and correcting the definition.

  Take corrective action based on the content of *item*.

  - "NIC index"

    Review the value specified for the NIC index.

  - "NIC redundant"

    Review the values specified in the active or standby NIC values.

- "PhysicalLANSegment name"

Review the value specified for the physical LAN segment name.

- If *filename* contains "alive_monitoring"

Notify the infrastructure administrator of the information in this message.

The infrastructure administrator should review the settings, referring to "Definition File for Alive Monitoring" in "D.5.1 Definition Files" in the "Setup Guide CE".

62719

FJSVrcx:ERROR:62719:*item* is inconsistent with the XML attributes.(element=*element*). file=*file_path*

[Description]

There is an inconsistency in the attribute values between *item* and *element* in the XML definition indicated in *file_path*.

[Corrective Action]

Take corrective action based on the content of *item*.

- "file name"

Review the relationship between the XML definition file name indicated in *file_path* and the attribute value of the *element* element. For details, refer to "2.11 Server NIC Definitions".

62720

FJSVrcx:ERROR:62720:link aggregation member port cannot be specified for network switch port (port=*port*, switch=*switch*)

[Description]

The process was aborted for the following reasons:

- If automatic VLAN setting is enabled for the external port, specify the member port *port* that makes up the link aggregation of the LAN switch blade *switch* in the external port of the physical port.

[Corrective Action]

- When specifying the ports that make up the link aggregation in the external port

Specify the link aggregation group name in the lag attribute of the NetworkSwitchPort tag in the network resource XML definitions

- If a member port that makes up a link aggregation has been incorrectly specified as the physical port in the external port

Review the physical port number specified in the number attribute of the NetworkSwitchPort tag in the network resource XML definitions.

62750

FJSVrcx:ERROR:62750:invalid ruleset name. ruleset=*ruleset_name* detail=*detail*

[Description]

There is an error in the ruleset *ruleset_name*.

In *ruleset_name*, the name of the ruleset is displayed.
In *detail*, the following detailed information is displayed:

- "duplicate"

A duplicate ruleset name has been used.

- "not found"

  The corresponding ruleset does not exist.

- "name too long"

  The ruleset name exceeds the maximum length.

- "name error"

  The ruleset name contains invalid characters.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "duplicate"

  Change the folder name corresponding to the duplicate ruleset name to a name that is unique on the system.

  For details on the folders for rulesets, refer to "Creating a Folder for Registration Rulesets" in "4.2.4.9 When Automatically Configuring Network Devices" in the "Setup Guide CE".

- "not found"

    - When this error is output while operating an L-Platform

      Change the ruleset name specified in the parameter file (default_param.prm) to a valid ruleset name.

    - When this error is output while creating a network resource

      Change the ruleset name specified in the relevant XML file to a valid ruleset name.

- "name too long"

  Change the ruleset name to one with 32 characters or less.

- "name error"

  Specify a ruleset name that begins with an alphanumeric character and consists of alphanumeric characters, hyphens ("-"), or underscores("_").

62751

FJSVrcx:ERROR:62751:parameter file error. ruleset=*ruleset_name* detail=*detail*

[Description]

One of the following files contains an error:

- Parameter file

- File storing the information from when an L-Platform including a firewall was created

- Interface configuration file for the network device

In *ruleset_name*, the name of the ruleset is displayed.
In *detail*, the following detailed information is displayed:

- "creation of file (*filename*) failed"

  Creation of the file *filename* has failed.

  The name of the file storing the information from when an L-Platform including a firewall was created is displayed in *filename*.

- "deletion of file (*filename*) failed"

  Deletion of the file *filename* has failed.

  The name of the file storing the information from when an L-Platform including a firewall was created is displayed in *filename*.

- "copying of file (*filename*) failed"

Copying of the file *filename* has failed.

One of the names of the files is displayed in *filename*.

- Parameter file

- File storing the information from when an L-Platform including a firewall was created

- "error in format of file (*filename*)"

Parsing of the file *filename* has failed.

One of the names of the files is displayed in *filename*.

- Parameter file

- File storing the information from when an L-Platform including a firewall was created

- Interface configuration file for the network device

- "accessing file (*filename*) failed"

Access to the file *filename* has failed.

One of the names of the files is displayed in *filename*.

- Parameter file

- Interface configuration file for the network device

[Corrective Action]

The tenant administrator or tenant user should take corrective action according to the information displayed in *detail*.

- "accessing file (*filename*) failed"

Execute the same operation again.

When the same errors are displayed, notify the infrastructure administrator of the information in this message.

The infrastructure administrator should check the following and resolve the cause of the error.

- Access privileges for the files in the directory (including its child directories) where the ruleset *ruleset_name* is registered

- That there is sufficient disk space available

After completing the corrective actions above, request the tenant administrator or the tenant user to execute the same operation again.

When the same errors are displayed, notify the infrastructure administrator of the information in this message.

If *detail* is something other than the above, the tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "error in format of file (*filename*)"

Correct the parameter file or the network device interface configuration file.

- *detail* in all other cases

Check the following and resolve the cause.

- Access privileges for the files in the directory (including its child directories) where the ruleset *ruleset_name* is registered

- That there is sufficient disk space available

After completing the corrective actions above, request the tenant administrator or the tenant user to execute the same operation again.

When the same errors are displayed, notify the infrastructure administrator of the information in this message.

62752

FJSVrcx:ERROR:62752:script list file error. ruleset=*ruleset_name* scriptlist=*scriptlist_name* detail=*detail*

[Description]

There is an error in the script list *scriptlist_name*.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *detail*, the following detailed information is displayed:

- "not found"

    The script list *scriptlist_name* was not found.

- "file mode error"

    A directory has been specified for the script list *scriptlist_name*.

- "access error"

    Accessing of the script list *scriptlist_name* has failed.

[Corrective Action]

The tenant administrator or tenant user should take corrective action according to the information displayed in *detail*.

- "access error"

    Execute the same operation again.

    When the same errors are displayed, notify the infrastructure administrator of the information in this message.

    The infrastructure administrator should check the following and resolve the cause of the error.

    - Access privileges for the files in the directory (including its child directories) where the ruleset *ruleset_name* is registered

    - That there is sufficient disk space available

    After completing the corrective actions above, request the tenant administrator or the tenant user to execute the same operation again.

    When the same errors are displayed, notify the infrastructure administrator of the information in this message.

If *detail* is something other than the above, the tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "not found"

    In the directory where the ruleset *ruleset_name* is registered, create the script list *scriptlist_name*, and the script specified in the script list *scriptlist_name*.

- "file mode error"

    Make sure to create the script list *scriptlist_name* in text format.

62753

FJSVrcx:ERROR:62753:script list format error. ruleset=*ruleset_name* scriptlist=*scriptlist_name* detail=*detail*

[Description]

There is an error in the descriptions in the script list *scriptlist_name*.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *detail*, the following detailed information is displayed:

- "line over"

  The number of script lines specified in the script list *scriptlist_name* exceeds the limit of 100.

- "operand (*operand_name*) incorrect. line=*n*"

  The operand *operand_name* in the relevant line *n* of the script list *scriptlist_name* is not correctly specified.

  In *operand_name*, the name of the operand which is not correctly specified is displayed.

    - When operand_name is "group"

        - More than one "group" is specified.

        - There is an error in the value specified for the operand "group".

        - The operand group has been specified in the rule sets used for network resources.

        - If there are more than one script groups that have been grouped with the same number in the script list *scriptlist_name*, the number of scripts in each group does not match.

    - When *operand_name* is "-"

        - The operand has not been specified using the "operand name = value" format.

    - When the *operand_name* is not the above

        - The *operand_name* operand has been specified more than once.

        - The value specified in *operand_name* is invalid.

        - The *operand_name* is not a valid operand name.

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "script path error. line=*n*"

  The script path specified in the script list *scriptlist_name* is incorrect.

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "no valid lines found"

  There is no script specified in the script list *scriptlist_name*.

[Corrective Action]

  The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

  The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

  - "line over"

    Correct the number of script lines specified in the script list file *scriptlist_name* so it is within 100 lines.

  - "operand (*operand_name*) incorrect. line=*n*"

    Take corrective action based on the content of *operand_name*.

    - When *operand_name* is "group"

        - If multiple operand groups have been specified, make adjustments so that only one operand group is left.

        - If the value specified in group is invalid, specify a valid value.

        - If operand groups have been specified in the rule sets for network resources, delete the operand group.

        - If there are more than one script groups that have been grouped with the same number in the script list *scriptlist_name*, and the numbers of scripts in each of the script groups are different, adjust so the number of scripts is the same.

    - When *operand_name* is "-"

        - Specify the operand using the format "operand name = value" in the line *n* of the script list *scriptlist_name*.

- When the *operand_name* is not the above

  - If multiple operand *operand_name* have been specified, make adjustments so that only one operand *operand_name* is left.

  - If the value specified in *operand_name* is invalid, specify a valid value.

  - If the operand name of the *operand_name* operand is incorrect, specify a correct operand name or delete the *operand_name* operand.

- "script path error. line=*n*"

  Correct the script path specified in the script list *scriptlist_name*.

- "no valid lines found"

  Specify scripts to be executed in the script list *scriptlist_name*.

62754

FJSVrcx:ERROR:62754:inconsistent definition with create scriptlist. ruleset=*ruleset_name* scriptlist=*scriptlist_name* detail=*detail*

[Description]

There is an inconsistency between the content described in the script list *scriptlist_name* and the descriptions in the create script list.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *detail*, the following detailed information is displayed:

- "group device. line=*n*"

  The following do not match:

  - The number of the grouped scripts with the same group number in the create script list

  - The number of the grouped scripts with the same group number in the script list *scriptlist_name*

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "group number. line=*n*"

  The group numbers of the following scripts do not match:

  - The group number of the grouped scripts specified in the create script list

  - The group number of the grouped scripts specified in the script list *scriptlist_name*

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.
  When *n* is "0", the group number of the grouped script specified in the create script list is not specified in the script list *scriptlist_name*.

- "script path. line=*n*"

  The paths of the following scripts do not match:

  - The path of the script specified in the create script list

  - The path of the script specified in the script list *scriptlist_name*

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.
  When *n* is "0", the path of the script specified in the create script list is not specified in the script list *scriptlist_name*.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "group device. line=*n*"

   Correct the number of the grouped scripts with the same group number specified in the script list *scriptlist_name* so that it is the same as the one specified in the create script list.

- "group number. line=*n*"

   Correct the group number of the grouped scripts specified in the script list *scriptlist_name* so that it is the same as the one specified in the create script list.

- "script path. line=*n*"

   Correct the script path specified in the script list *scriptlist_name* so that it matches the script path specified in the create script.

62755

FJSVrcx:ERROR:62755:file error in script list. ruleset=*ruleset_name* scriptlist=*scriptlist_name* detail=*detail*

[Description]

There is an error in the file used by execution of the script list *scriptlist_name*.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *detail*, the following detailed information is displayed:

- "file (*file_name*) not found. line=*n*"

   The file *file_name* specified in the script list *scriptlist_name* was not found.

   In *file_name*, one of the following names is displayed.

   - Script

   - Command file

   - Parameter file

   In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "file (*file_name*) access error. line=*n*"

   Access to the file *file_name* specified in the script list *scriptlist_name* has failed.

   In *file_name*, one of the following names is displayed.

   - Script

   - Command file

   - Parameter file

   In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "file type of file (*file_name*) incorrect. line=*n*"

   A directory is specified in the file *file_name* that is specified in the script list *scriptlist_name*.

   In *file_name*, one of the following names is displayed.

   - Script

   - Command file

   - Parameter file

   In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

[Corrective Action]

The tenant administrator or tenant user should take corrective action according to the information displayed in *detail*.

- "file (*file_name*) access error. line=*n*"

  - When the deletion of network resources has been performed

    Notify the infrastructure administrator of the information in this message.

    The infrastructure administrator should log directly into the network device specified in the line *n* in the script list *scriptlist_name* and delete the definition manually.

    For details on how to log into a network device and how to delete definitions, refer to the manual for the network device.

  - When operations other than the above operation have been performed

    Execute the same operation again.

    When the same errors are displayed, notify the infrastructure administrator of the information in this message.

    The infrastructure administrator should check the following and resolve the cause of the error.

    - Access privileges for the files in the directory (including its child directories) where the ruleset *ruleset_name* is registered

    - That there is sufficient disk space available

    After completing the corrective actions above, request the tenant administrator or the tenant user to execute the same operation again.

    When the same errors are displayed, notify the infrastructure administrator of the information in this message.

If *detail* is something other than the above, the tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "file (*file_name*) not found. line=*n*"

  Create the file *filename* specified in the script list *scriptlist_name*.

- "file type of file (*file_name*) incorrect. line=*n*"

  Create the file *filename* specified in the script list *scriptlist_name* in text format.

62756

FJSVrcx:ERROR:62756:*device_name*:failed to access device. ruleset=*ruleset_name* scriptlist=*scriptlist_name* detail=*detail*

[Description]

The network device *device_name* for executing the script list *scriptlist_name* cannot be used.

In *device_name*, the name of the network device is displayed (sometimes it may not be displayed).
In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *detail*, the following detailed information is displayed:

- "not found. line=*n*"

  The network device *device_name* specified in the script list *scriptlist_name* has not been registered.

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "cannot be selected. line=*n*"

  There are no network devices for executing the scripts specified in the script list *scriptlist_name*.

  The following causes are possible:

  - The network device corresponding to the model name or apparatus name in the rule set *ruleset_name* and the vendor name is not registered in the network pool.

  - A network device that matches the network device configuration (redundant/non-redundant) that is specified in the script list *scriptlist_name* is not registered in the network pool.

- A network device that can be selected for automatic setting does not exist in the network pool.

In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "not registered in network pool. line=*n*"

The network device *device_name* that executes the scripts specified in the script list *scriptlist_name* has not been registered in the network pool.

In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "not found. line=*n*"

Register the network device *device_name* specified in the script list *scriptlist_name*.

- "cannot be selected. line=*n*"

Follow the instructions below:

- Check that the model name (or the device name) and the vendor name specified in the ruleset *ruleset_name* match the model name (or the device name) and the vendor name of the network devices that have been registered in the network pool.

- Register a network device in the network pool that matches the network device configuration (redundant/non-redundant) that is specified in the script list *scriptlist_name*. If one is already registered, check the redundancy configuration (group ID of network configuration information) of the network device that is registered in the network pool.

Refer to "Network Configuration Information" for information about network configuration information.

- Use the rcxadm netdevice show command to check the status of the network device registered in the network pool, then make it so that it can be selected for automatic setting.

- If the operational status (Status) of the network device is other than "normal"

Remove the cause of the error in the network device, make sure that the operational status (Status) of the network device is "normal", and retry.

- If the maintenance mode (maintenance) of the network device is "ON"

Retry after the maintenance tasks on the network device are complete.

- If the automatic setting selectabilty status (AutoConfiguration) of the network device is "false"

If "false" (not the target of auto-configuration) has been set for auto-configuration information for network device (the AutoConfiguration element) when registering or modifying the network configuration information of network devices

Perform modification using the rcxadm netdevice set command so that the corresponding network device can be selected as the target of auto-configuration.

For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

In other cases

Before this message was output, script execution on the same network device had failed, as notified by the following messages:

- "Message number 42751"

- "Message number 62760"

- "Message number 67999"

Based on the message that was output, identify the cause of the script execution error on the network device and take the relevant corrective action.

After taking corrective action, perform modification using the rcxadm netdevice set command so that the corresponding network device can be selected as the target of auto-configuration.

For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

- "not registered in network pool. line=*n*"

Register the network device *device_name*, which can execute the script specified in the script list *scriptlist_name*, in the network pool.

62757

FJSVrcx:ERROR:62757:*device_name*:invalid device status (*status*). ruleset=*ruleset_name* scriptlist=*scriptlist_name* line=*n*

[Description]

There is an error in the status of the network device *device_name* for executing the script list *scriptlist_name*.

In *device_name*, the network device name is displayed.
In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *n*, the line number of the script list at which an error occurred is displayed.
One of the following network device statuses is displayed in *status*:

- "error"

The network device *device_name* that executes the scripts specified in the script list *scriptlist_name* is not in the normal state.

- "maintenance mode"

The network device *device_name* for executing the scripts specified in the script list *scriptlist_name* is undergoing maintenance.

- "unavailable for auto-config"

The network device *device_name* is unavailable for automatic configuration because execution of the scripts on the device used for executing the scripts specified in the script list *scriptlist_name* has failed and corrective action is being taken.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.
The infrastructure administrator should take the corrective action according to the information displayed in *detail*.

- "maintenance mode"

After performing the maintenance tasks on the *device_name* network device, use the rcxadm netdevice set command to cancel the maintenance mode for the *device_name* network device.

For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

- "error"

Check the status of the network device *device_name* that executes the scripts specified in the script list *scriptlist_name*, and then resolve the cause of the error.

- "unavailable for auto-config"

  - If "false" (not the target of auto-configuration) has been set for auto-configuration information for network device (the AutoConfiguration element) when registering or modifying the network configuration information of network devices

  Perform modification using the rcxadm netdevice set command so that the corresponding network device can be selected as the target of auto-configuration.

  For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

  - In other cases

  Before this message was output, script execution on the same network device *device_name* had failed, as notified by the following messages:

    - "Message number 42751"

    - "Message number 62760"

    - "Message number 67999"

Based on the message that was output, identify the cause of the script execution error on the network device *device_name* and take the relevant corrective action.

After taking corrective action, perform modification using the rcxadm netdevice set command so that the corresponding network device *device_name* can be selected as the target of auto-configuration.

For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

62758

FJSVrcx:ERROR:62758:*device_name*:device type mismatched. ruleset=*ruleset_name* scriptlist=*scriptlist_name* line=*n*

[Description]

The resource type of the network device *device_name* that executes the scripts specified in the script list *scriptlist_name* is incorrect.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *device_name*, the network device name is displayed.
In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should confirm that the network device *device_name* has been registered with the correct resource type specified.

62759

FJSVrcx:ERROR:62759:*server_name*:no switch found connected with NIC(*physical_nic_number*). ruleset=*ruleset_name* scriptlist=*scriptlist_name* line=*n*

[Description]

The switch connected using the NIC number *physical_nic_number* of the target server *server_name* could not be found.

In *server_name*, the name of the server is displayed.
In *num*, the NIC number is displayed.
In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

[Corrective Action]

The tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should check if the switch connected using the NIC number *physical_nic_number* of the target server *server_name* has been registered.

If it has been registered, export the network configuration information using the rcxadm netconfig export command, and then check the link information of the switch and the NIC number *physical_nic_number* of the target server *server_name*.

For details on the rcxadm netconfig command, refer to "1.3.7 rcxadm netconfig".

Refer to "2.6 Network Configuration Information" for information about network configuration information.

62760

FJSVrcx:ERROR:62760:automatic network device configuration failed. ruleset=*ruleset_name* scriptlist=*scriptlist_name* detail=*detail*

[Description]

The process was aborted because an error occurred while executing the script list *scriptlist_name*.

In *ruleset_name*, the name of the ruleset is displayed.
In *scriptlist_name*, the script list name is displayed.
In *detail*, the following detailed information is displayed:

- "scripts execution error. device=*device_name* result=*code* line=*n*"

  An error occurred while executing the script list *scriptlist_name*.

  In *device_name*, the network device name is displayed.
  In *code*, the return value of the script is displayed.

  - 04

    An error that allows re-execution of the script (such as disconnection and timeout) has occurred.

  - In Other Cases

    An error that does not allow re-execution of the script (any other cases) has occurred.

  In *n*, the line number of the script list *scriptlist_name* at which an error occurred is displayed.

- "execution timeout. device=*device_name* line=*n*"

  Timeout occurred while executing the script list *scriptlist_name*.

  In *device_name*, the network device name is displayed.
  In *n*, the line number of the script list *scriptlist_name* at which timeout occurred while executing the script is displayed.

This message may be displayed when there are errors in the network configuration information, specifically when "L2-Switch" has been specified for the "Type" element, and the "Tenant" element has been specified.

[Corrective Action]

When the following two conditions are met, the tenant administrator or tenant user should execute the operation again:

- When *scriptlist_name* is "create.lst", "connect.lst", or "modify.lst"

- When *detail* is "scripts execution error. device=*device_name* result=04 line=*n*"

In other cases, or when the problem persists even after re-execution, notify the infrastructure administrator of the operation performed when the error occurred, and the information in this message.

The infrastructure administrator should check for the following mistakes.

- In the network configuration information for the network device in question, check for the following mistakes:

  - "L2-Switch" has been specified for the Type element

  - The Tenant element has been specified

  If either of the above mistakes is found, delete the Tenant element in the network configuration information of the network device in question, and change the network device settings using the rcxadm netdevice modify command.

  The network device in question can be identified from the network device name which is indicated in *detail* or described in the script list *scriptlist_name*.

  For details on the rcxadm netdevice modify command, refer to "1.3.6 rcxadm netdevice".

  Refer to "2.6 Network Configuration Information" for information about network configuration information.

- If this message is output when operating an L-Platform, check if there is an error in the following files:

  [Windows]
  Installation_folder\Manager\etc\scripts\network_resource\Unm_network_setting.xml

  [Linux]
  /etc/opt/FJSVrcvmr/scripts/network_resource/Unm_network_setting.xml

  For details on the interface configuration file of network devices, refer to "2.15 Network Device Interface Configuration File".

In other cases, the infrastructure administrator should take corrective action according to the information displayed in *detail*.

- "scripts execution error. device=*device_name* result=*code* line=*n*"

Check the network device and the communication path to the network device, and then remove the cause of the error.

If deleting of the definition of a network device for which a definition has been configured by execution of the script is necessary, log into the network device directly and delete the definition manually.

For details on how to log into a network device and how to delete definitions, refer to the manual for the network device.

- "execution timeout. device=*device_name* line=*n*"

Identify the time-consuming process occurring during execution of the script and take corrective action accordingly.

When redoing the operation after taking corrective action, first make sure that changes have been made using the rcxadm netdevice show command so that the network device can be selected automatically.

If it cannot be selected as a target of auto-configuration, perform modification using the rcxadm netdevice set command so that the corresponding network device can be selected as a target of auto-configuration.

For details on the rcxadm netdevice command, refer to "1.3.6 rcxadm netdevice".

62780

FJCVrcx:ERROR:62780:unm-mon:Node status of *nodeid* is changed to *status* (*cause*)

[Description]

The status of the network device *nodeid* has changed to *status*.

One of the following is displayed in *cause*:

- "Ping unreachable"

The network device is not responding to the PING for monitoring active/inactive status.

- "SNMP unreachable"

The network device does not respond to SNMP monitoring of status.

[Corrective Action]

Check the state of the network device *nodeid*.

Take corrective action based on the content displayed for *cause*.

- "Ping unreachable"

Identify the cause that prevents the network device from responding to PING and take corrective action accordingly.

If there is no problem in the network device, it is likely that an error is occurring in the communication path to the network device. Check the network devices on the communication path.

- "SNMP unreachable"

Identify the cause that prevents the network device from responding to SNMP and take corrective action accordingly.

If there is no problem in the network device, it is likely that an error is occurring in the communication path to the network device. Check the network devices on the communication path.

62781

FJSVrcx:ERROR:62781:*device*:vendor or product name of redundant device is unmatched. detail=*device*

[Description]

Setting of the redundancy configuration of the network device has failed.

The same group ID cannot be set for network devices whose vendor name and device name are different.

In *device*, the network device names registered using the same group ID are displayed. When multiple network devices have been registered, they are displayed separated by commas (",").

[Corrective Action]

Check the vendor names and device names of the network devices, specify a correct group ID for each of them, and perform the operation again.

For details on the vendor names and device names of network devices, refer to "4.2.4.8 When Registering Network Devices as Resources" of the "Setup Guide CE".

62782

FJSVrcx:ERROR:62782:*device*:duplicate login authority and tenant name found in login information. detail=*authority,tenant_name*

[Description]

Setting of login information for the network device *device* has failed.

Multiple sets of login information with the same privileges and tenant name cannot be defined for a network device.

In *authority*, privileges of the login information are displayed.
In *authority*, the tenant name of the login information is displayed.

[Corrective Action]

Specify the correct privileges and tenant name, then perform the operation again.

3.1.9 63XXX Series

For details on 63XXX message series, refer to "Messages VE".

3.1.10 65XXX Series

This section explains the 65XXX message series.

65300

65300: *obj* creation failed

[Description]

An error occurred while creating *obj*. *obj* has not been created.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65301

65301: *obj* deletion failed

[Description]

An error occurred while deleting *obj*. *obj* has not been deleted.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65302

65302: Changing of *obj* information failed

[Description]

An error occurred while modifying the information of *obj*. The information of *obj* has not been modified.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65303

65303: Moving of *obj* failed

[Description]

An error occurred while moving *obj*. *obj* has not been moved.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65304

65304: *obj* registration failed

[Description]

An error occurred while registering *obj*. *obj* has not been registered.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65305

65305: Changing of *obj* settings failed

[Description]

An error occurred while modifying the configuration of *obj*. The configuration of *obj* has not been modified.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65306

65306: *obj* migration failed

[Description]

An error occurred while moving *obj* between servers. *obj* has not been moved.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65307

65307: Creation of snapshot image failed

[Description]

An error occurred while collecting the snapshot image. The snapshot image has not been collected.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65308

65308: Restoration of snapshot image failed

[Description]

An error occurred while restoring the snapshot image. The snapshot image has not been restored.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65309

65309: *obj* importation failed

[Description]

An error occurred while importing *obj*. *obj* has not been imported.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65310

65310: *obj* release failed

[Description]

An error occurred while unregistering *obj*. *obj* has not been unregistered.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65311

65311:Opening of the L-Server console failed
FJSVrcx:ERROR:65311:Opening of the L-Server console failed

[Description]

An error occurred while starting the L-Server console.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65312

65312:Powering on of L-Server in *obj* failed.

[Description]

An error occurred while powering on the L-Server. The power is not ON.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65313

65313:Powering off of L-Server in *obj* failed.

[Description]

An error occurred while powering off the L-Server. The power is not OFF.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65314

65314:Reboot of L-Server in *obj* failed.

[Description]

An error occurred while rebooting the L-Server. Rebooting has not been performed.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65615

FJSVrcx:ERROR:65615:Failed to add user group.

[Description]

An error occurred while registering a user group. The user group has not been registered.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65616

FJSVrcx:ERROR:65616:Failed to change user group.

[Description]

An error occurred while changing a user group. The user group has not been changed.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65617

FJSVrcx:ERROR:65617:Failed to delete user group.

[Description]

An error occurred while deleting a user group. The user group has not been deleted.

[Corrective Action]

Check the message number displayed in the details in the dialog, and perform the appropriate action.

65836

65836:User ("*username*") has already been registered.
FJSVrcx:ERROR:65836:User ("*username*") has already been registered.

[Description]

Registration failed as there is already a registered user with the same *user ID*.

[Corrective Action]

Enter a user ID that has not been registered, and register it.

65840

FJSVrcx:ERROR:65840: failed to connect to directory server

[Description]

The directory server could not be communicated with.

[Corrective Action]

Check the following and take corrective action accordingly.

- Check whether the settings for communication with the directory server are correct.

  Settings for communication with the directory server can be checked using the rcxadm authctl command.

  For details, refer to "1.7.10 rcxadm authctl".

- When performing the following operations, it is necessary to register the certificate with Resource Orchestrator again.

  - Reinstallation of ServerView Operations Manager

  - Reinstallation of the directory server used by ServerView Operations Manager

  - Updating of the certificate of ServerView Operations Manager

  - Updating of the certificate of the directory server used by ServerView Operations Manager

  For details on how to register a certificate, refer to "4.5 Installing and Configuring Single Sign-On" in the "Setup Guide CE".

- Confirm that the directory server has been started.
  Then perform the operation again.

65841

FJSVrcx:ERROR:65841: the current user has no valid privileges for this product

[Description]

Refer to the explanation in "Message number 65841" in the "Messages VE".

[Corrective Action]

Refer to the explanation in "Message number 65841" in the "Messages VE".

65842

FJSVrcx:ERROR:65842: The password does not fit the policy of the directory service.

[Description]

The user information registered in the directory service could not be changed.
The following causes are possible:

- The specified password is not compliant with the user password policy of the directory service

[Corrective Action]

Check the user password policy for the directory service and ensure that the specified password is compliant with the policy.

65843

FJSVrcx:ERROR:65843:*user* is already registered in the directory service

[Description]

The user cannot be created as a user with the same name as the user *user* exists in the directory service.

[Corrective Action]

Check if the specified user ID is correct.

When using a user registered in directory service in Resource Orchestrator, create a user with the settings configured not to register a user in directory service using the directory service operation definition file.

For details on the directory service operation definition file, refer to "6.6.1 Settings for Tenant Management and Account Management" in the "Operation Guide CE".

65844

FJSVrcx:ERROR:65844:*user* not found in the directory service

[Description]

The user cannot be changed as the specified user *user* does not exist in the directory service.
A user in the directory service may have been deleted.

[Corrective Action]

Perform one of the following corrective actions:

- Delete the current user, then create a new one.

- After creating a user in the directory service, add it to the members of "cn=IflowUsers,ou=group,*base_DN*" group.

65845

FJSVrcx:ERROR:65845:*group_name* not found in the directory service

[Description]

A user cannot be registered as the group *group_name* does not exist in the directory service. There is an error in directory service environment.

[Corrective Action]

Create the group "cn=*group_name*,ou=group,*base_DN*" in directory service.

65846

FJSVrcx:ERROR:65846:*obj_name* of the directory service failed (*detail_message*)

[Description]

Operations of *obj_name* in the directory service failed.

[Corrective Action]

Check the information in *detail_message* or the logs in the directory service, and perform corrective action for the error.

65903

FJSVrcx:ERROR:65903:Export to *file_name* failed.

[Description]

Export to the file specified for *file_name* failed.

[Corrective Action]

After confirming the path to the specified file name, perform the operation again.

65910

FJSVrcx:ERROR:65910:The value of *item*, *value*, is invalid.

[Description]

The process was canceled due to one of the following reasons:

- There is an error in the format of *value* for *item* in a configuration definition file, L-Server XML file, L-Server template XML file, resource pool XML file, image XML file, user XML file, network configuration information XML file, or the [Create an L-Server] dialog

- An invalid character has been used

- There is no value set

- There is an error in the format of *value* for *item* specified in the XML file of disk resource configuration information for VM guests

- There is an error in the format of *value* for *item* specified in the iSCSI boot information XML file.

- The network resource name and the subnet name of the public LAN subnet are different

- The network resource name and the admin LAN subnet name are different

- When performing switchover of operating or standby storage, the content of the replication definition file is incorrect

- The *value* for *item* that has been specified in the XML file to create tenant folders, or in the XML file of the L-Server has a formatting error

- A tagged VLAN has been configured for a network resource for which PXE boot is specified

- When PXE boot is specified, and an image is also specified

- When retrieving the L-Server, the L-Server name has been specified incorrectly

- The format of *value* for *item* specified in a VM specific information definition file contains an error

- An L-Server cannot be linked with a virtual machine on the specified VM host

- An L-Server cannot be created for specified VM host

- Modification is not possible for an existing L-Server

One of the following is displayed in *item*:

- Disk (Disk name)

- Type

- operation

- Key value of the resource definition information

- An element or attribute name of the L-Server XML file

- An element or attribute name of the L-Server template XML file

- An element or attribute name of the image XML file

- A key value in the [Create an L-Server]

- An element or attribute name of the resource pool XML file

- Pool.name

  There is an error in the value specified for the name attribute of the Pool element.

- VmHost.ip

  There is an error in the value specified for the ip attribute of the VmHost element.

- VmHost (ip=*IP address of the VM host defined in XML*).Disks.Disk.name

  There is an error in the value specified for the name attribute in the Disk element in the VmHost element for which *an IP address of the VM host defined in XML* is specified for ip.

- VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk(name=*Disk resource name defined in XML*).size

  There is an error in the value of the size attribute in the Disk element to which *disk resource name defined in XML* is specified for name, in the VmHost element for which *an IP address of the VM host defined in XML* is specified for ip.

- VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk(name=*Disk resource name defined in XML*).path

  There is an error in the value of the path attribute in the Disk element to which *disk resource name defined in XML* is specified for name, in the VmHost element for which *an IP address of the VM host defined in XML* is specified for ip.

- An element or attribute name of the iSCSI boot information XML file

- Network name, AddressSet name

  The network resource name and the public LAN subnet name are different.

- Network name, ManagementLanSubnet name

  The network resource name and the admin LAN subnet name are different.

- An element or attribute name of the XML file to create tenant folders

- PXENetworkLink or net

- ServerImageLink.id

- ServerImageLink.name

- NICs.NIC.NICIndex

- The L-Server name when retrieved

- processors shares

- memory shares

- processors weight

- memory startup size

- memory buffer rate

- memory weight

- Network auto

  There is an error in the value specified for automatic configuration.

- VmHost(api_type)

- Parameter key name (customize file name)

- ExternalPorts vlanautosetting

  There is an error in the value specified for VLAN automatic configuration of an external connection port.

- NetworkSwitchPort number

  There is an error in the value specified for external connection port of LAN switch blades.

- PhysicalLANSegment

  There is an error in the value specified for physical LAN segment name.

- An element or attribute name of the XML file of network configuration information

- Password

- VirtualStorage (virtual storage name)

- max definable memory size

[Corrective Action]

Perform the operation again after checking the content displayed in *item*, and resolving the cause of the error.

- Disk (Disk name)

    The value of "*value*" in the disk information is incorrect.
    When performing the switchover operation of operating or standby storage, check the content of the replication definition file.

- Type

    - When importing a configuration definition file in the RCXCSV V2.0 format:

        An invalid value is specified in the section name.
        Correct the definitions in the configuration definition file.

    - When importing a configuration definition file in the RCXCSV V1.0 format:

        Something other than Chassis, EtherSwitch, or ServerBlade is specified for the resource type.
        Correct the definitions in the configuration definition file.

- operation

    A value other than "new", "change", or a hyphen ("-") is specified in the operation field, or there is a mistake in the operation area of the section header.
    Only "new" or a hyphen ("-") can be specified in the sections after the line of "#Backup configuration".
    Correct the definitions in the configuration definition file.

- Key value of the resource definition information

    An invalid value is specified for the displayed key, or there is a mistake in the displayed key value in the section header.
    Correct the definitions in the configuration definition file.
    For details on the values that can be specified for *item*, refer to "Appendix A Format of CSV System Configuration Files" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- An element or attribute name of the L-Server XML file

    Perform the operation again after correcting the value corresponding to the displayed key value in the L-Server XML file and correcting the definition.

- An element or attribute name of the L-Server template XML file

    Perform the operation again after correcting the value corresponding to the displayed key value in the XML file of the L-Server template and correcting the definition.

- An element or attribute name of the image XML file

    Perform the operation again after correcting the value corresponding to the displayed key value in the image XML file and correcting the definition.

- A key value in the [Create an L-Server]

    Perform the operation again after correcting the value corresponding to the displayed key value.

    - When IP address is displayed in *value*

        An IP address outside the range that can be allocated to the network resource has been specified.
        Specify an unused IP address for the network resource, and perform the operation again.

- Pool.name

    Review the value of the name attribute in the Pool element, correct the definition, and then perform the operation again.

- VmHost.ip

    Review the value of the ip attribute in the VmHost element, correct the definition, and then perform the operation again.

- VmHost (ip=*IP address of the VM host defined in XML*).Disks.Disk.name

    Review the value of the name attribute in the Disk element in the VmHost element for which *an IP address of the VM host defined in XML* is specified for ip.

- VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk(name=*Disk resource name defined in XML*).size

  Review the value of the size attribute in the Disk element to which *disk resource name defined in XML* is specified for name, in the VmHost element for which *an IP address of the VM host defined in XML* is specified for ip, correct the definition, and then perform the operation again.

- VmHost(ip=*IP address of the VM host defined in XML*).Disks.Disk(name=*Disk resource name defined in XML*).path

  Review the value of the path attribute in the Disk element to which *disk resource name defined in XML* is specified for name, in the VmHost element for which *an IP address of the VM host defined in XML* is specified for ip, correct the definition, and perform the operation again.

- An element or attribute name of the iSCSI boot information XML file

  Perform the operation again after reviewing the value in the iSCSI boot information XML file and correcting the definition.

- An element or attribute name of the resource pool XML file

  Perform the operation again after correcting the value corresponding to the displayed key value in the resource pool XML file and correcting the definition.

- Network name, AddressSet name

  Specify the same value for both the network resource name and the public LAN subnet name.

- Network name, ManagementLanSubnet name

  Specify the same value for both the network resource name and the admin LAN subnet name.

- An element or attribute name of the XML file for tenant folders

  Perform the operation again after correcting the value corresponding to the displayed key value in the XML file of the tenant folder and correcting the definition.

- PXENetworkLink or net

  For the network resource for which PXE boot is specified, select a network resource that does not have a tagged VLAN configured.

- ServerImageLink.id

  When specifying PXE boot, images cannot be specified.
  After specifying only PXE boot, perform the operation again.

- ServerImageLink.name

  The specified image is incorrect.
  Review the specified image, and perform the operation again.

- NICs.NIC.NICIndex

  Check that sequential numbers starting from 0 are used for the NICIndex element value of each NIC element.

- The L-Server name when retrieved

  If an L-Server name was not specified when retrieved, specify the name and perform the operation again.
  If an L-Server name was specified, check and correct the name.

- processors shares

  Review the CPUShare value defined in the L-Server template, import the L-Server template, and then perform the operation again. When using a VM specific information definition file, review the value of processor_share, modify the definition, and perform the operation again.

    - When an error occurs while creating an L-Server using commands:

      If the CPUShare element has been entered in the XML file, review the value specified for the CPUShare element, and then perform the operation again.

    - When an error occurs when starting an L-Server:

      Review the CPUShare value defined for the L-Server, modify the L-Server using commands, and then perform the operation again.

- memory shares

Review the MemoryShare value defined for the L-Server template, import the L-Server template again, and then perform the operation again.
When using a VM specific information definition file, review the value of memory_share, modify the definition, and perform the operation again.

- When an error occurs while creating an L-Server using commands:

If the MemoryShare element has been entered in the XML file, review the value specified for the MemoryShare element, and then perform the operation again.

- When an error occurs when starting an L-Server:

Review the MemoryShare value defined for the L-Server, modify the L-Server using commands, and then perform the operation again.

- processors weight

Review the CPUWeight value defined for the L-Server template, import the L-Server template again, and then perform the operation again.
When using a VM specific information definition file, review the value of processor_weight, modify the definition, and perform the operation again.

- When an error occurs while creating an L-Server using commands:

If the CPUWeight element has been entered in the XML file, review the value specified for the CPUWeight element, and then perform the operation again.

- When an error occurs when starting an L-Server:

Review the CPUWeight value defined for the L-Server, modify the L-Server using commands, and then perform the operation again.

- memory weight

Review the MemoryWeight value defined for the L-Server template, import the L-Server template again, and then perform the operation again.
When using a VM specific information definition file, review the value of memory_weight, modify the definition, and perform the operation again.

- When an error occurs while creating an L-Server using commands:

If the MemoryWeight element has been entered in the XML file, review the value specified for the MemoryWeight element, and then perform the operation again.

- When an error occurs when starting an L-Server:

Review the MemoryWeight value defined for the L-Server, modify the L-Server using commands, and then perform the operation again.

- memory buffer rate

Review the MemoryBuffer value defined for the L-Server template, import the L-Server template again, and then perform the operation again.
When using a VM specific information definition file, review the value of memory_buffer_rate, modify the definition, and perform the operation again.

- When an error occurs while creating an L-Server using commands:

If the MemoryBuffer element has been entered in the XML file, review the value specified for the MemoryBuffer element, and then perform the operation again.

- When an error occurs when starting an L-Server:

Review the MemoryBuffer value defined for the L-Server, modify the L-Server using commands, and then perform the operation again.

- memory startup size

Review the StartupRAM value defined for the L-Server template, import the L-Server template again, and then perform the operation again.
When using a VM specific information definition file, review the value of memory_startup_size, modify the definition, and perform the operation again.

  - When an error occurs while creating an L-Server using commands:

  If the StartupRAM element has been entered in the XML file, review the value specified for the StartupRAM element, and then perform the operation again.

  - When an error occurs when starting an L-Server:

  Review the StartupRAM value defined for the L-Server, modify the L-Server using commands, and then perform the operation again.

- Network auto

Perform the operation again after reviewing the value specified for automatic configuration and correcting the definition.

- Parameter key name (customize file name)

Perform the operation again after correcting the value corresponding to the displayed parameter key value in the displayed customization file and correcting the definition.

- VmHost(api_type)

Perform the corrective action according to the executed operations.

  - When linking a configured virtual machine to an L-Server:

  Check the OS types of the virtual machine and VM host that are linked to each other, and perform the operation again.

  - When creating an L-Server:

  Check if the OS type of the VM host for L-Server creation and the VM management software for managing the VM host are appropriate, and perform the operation again.

  - When changing L-Server configurations:

  Check if the OS type of the VM host for L-Server creation and the VM management software for managing the VM host are appropriate, and the communication status with VM management software, and perform the operation again.

- ExternalPorts vlanautosetting

Perform the operation again after checking the value specified for VLAN automatic configuration for the external connection port and correcting the definition.

- NetworkSwitchPort number

Perform the operation again after checking the value specified for number for the LAN switch blade external connection port and correcting the definition.

- PhysicalLANSegment

Perform the operation again after checking the value specified for the physical LAN segment and correcting the definition.

- An element or attribute name of the XML file of network configuration information

Perform the operation again after checking the value corresponding to the displayed key name in the network configuration information XML file and correcting the definition.

- Password

There may be an error in the value specified for the Password element in the user XML file or the value may have been specified for the Password element when not possible. Review the value of the Password element in the user XML file, correct the definition, and perform the operation again.

- VirtualStorage (virtual storage name)

The value of "value" in the virtual storage information is incorrect. When performing the switchover operation of operating or standby storage, check the content of the replication definition file. When performing switchover operations using Disaster Recovery after damage, ensure that virtual storage exists on the backup site and is not registered in the pool.

- max definable memory size

When using a VM specific information definition file, review the value of max_definable_memory_size, modify the definition, and perform the operation again.

For details, refer to "VM Specific Information Definition File" in "E.1.1 Definition Files" in the "Setup Guide CE".

65911

FJSVrcx:ERROR:65911:Specified resource *value* not found.

[Description]

The process was canceled because the specified resource *value* is not registered.
The resource *value* may not be included in the access scope of the user or user group that performed the operation.

- When *value* is "image key = xxx"

The process was canceled because the registered cloning image was deleted due to deletion of a host from VMware vCenter Server.

- When "(create)" follows after *value*:

The process was canceled because one of the following applies to the specified physical server:

   - The specified physical server does not exist

   - The specified physical server is not registered in the resource pool

   - The specified physical server is already assigned as an L-Server

   - The specified physical server is already assigned as a spare server

   - The physical server resource does not exist in the resource pool

- When "(Spare)" follows after *value*:

The process was canceled as the resource specified as a spare server does not exist.

- When "(Primary)" follows after *value*:

The process was canceled as the resource specified in the physical server usage change does not exist.

   - The specified physical server does not exist

   - The specified physical resource pool does not exist

   - The physical server resource does not exist in the specified resource pool

- When *value* is "PhysicalServer"

When the resource type is "PhysicalServer", the physical server which satisfies the conditions may not exist or may be in an incorrect status.

- When "(Storage pool)" follows after *value*:

The process was canceled because one of the following applies to the specified disk resource:

   - The specified disk resource is not registered in the resource pool

   - The virtual storage resource in which the specified disk resource was created is not registered in the resource pool

- When "*value*" is "IOVirtualOptionPool"

The process was canceled because one of the following applies to the specified address set resource:

   - There is no address pool to store the address set resources to allocate to L-Servers

- There are no unused address set resources in the address pool

- When *value* is "NetworkDevice", and "(ip=*IP_address*)" follows after the value:

  The network device with the admin IP address *IP_address* is not registered.

- When *value* is "Server", and "(ip=*IP_address*)" follows after the value:

  The server with the admin IP address *IP_address* is not registered.

- When *value* is "NetworkDevice", followed by "(ip=*IP_address*, port=*port_name*)":

  There are no ports with the *port_name* for the network device registered using the admin IP address, *IP_address*. Check the "port name" displayed in the resource details of the network device tree.

- When *value* is "VmHost(ip=*IP address of VM host defined in XML*)"

  The process was canceled as the VM host which has the IP address defined in the XML does not exist.

- When *value* is Pool(name=*storage pool name defined in XML*)

  The process was canceled as the storage pool defined in XML does not exist.

[Corrective Action]

You cannot modify by specifying an unregistered resource name.

Perform the operation again after specifying a resource name that is already registered.

- When a resource name already registered is specified:

  There is an error in the key value for the resource name in the section header. Perform the operation again after correcting the configuration definition file.

- When registering new resource information with the specified resource name:

  Change the operation to "new".
  There may be differences between the values in the definition files and the actual configuration information of that server. Check that the correct values have been entered.
  For details on definition files, refer to "Configuration when Creating a Physical L-Server without Specifying a Model Name in the L-Server Template" in "D.5.1 Definition Files" of the "Setup Guide CE".

- When *value* is "image key = *xxxx*"

  Perform the operation again after restoring the deleted cloning image and using a command to modify the L-Server configuration. When modifying the L-Server configuration, set an appropriate value in the ServerImageLink element.
  Perform the operation again after setting the access scope of resources.

- When *value* is "PhysicalServer"

  A physical server that matches the specified conditions may not exist, or the status may be invalid. Check that the L-Server definition and the physical server in the specified server pool meet or exceed all of the following conditions.

  - Number of CPUs

  - CPU Clock Speed

  - Memory Size

  - Number of NICs

  - Number of FCs in the FC connection pattern

  For the recovery procedure, refer to "Message number 62508".

  Check that the network configuration of the admin LAN matches completely, including NIC redundancy.

  A physical server cannot be found that has the number of FCs specified in the FC connection pattern. Refer to "4.3.1.2 Storage Configuration" in the "Setup Guide CE" for information on how to obtain the FC information for the physical server.

- When "*value*" is "IOVirtualOptionPool"

  Check the following:

- There is an address pool to store the address set resources

- There is an unused address set resource in the address pool

There may be differences between the values in the definition files and the actual configuration information of that server.

Check that the correct values have been entered.

For details on the definition file, refer to "Appendix I Definition Files" of the "Setup Guide CE".

- When *value* is "NetworkDevice", and "(ip=*IP_address*)" follows after the value:

Register the network device (for which *IP address* is used as the management IP address) as a resource, and retry.

- When *value* is "Server", and "(ip=*IP_address*)" follows after the value:

Register the rack mounted server (for which *IP address* is used as the management IP address) as a resource, and retry.

- When *value* is "NetworkDevice", and "(ip=*IP_address* and port=*port_name*)" follows after the value:

Check the port name (the one displayed in the resource details of the network device that is registered in an *IP address* that is a management IP address), change it to a correct port name and retry.

- When *value* is "VmHost(ip=*IP address of VM host defined in XML*)"

Define the IP address of an existing VM host in the XML and perform the operation again.

- When *value* is Pool(name=*storage pool name defined in XML*)

Define an existing storage pool in the XML and perform the operation again.

65926

FJSVrcx:ERROR:65926:The file extension of *file_name* is not supported.

[Description]

The process was aborted as a file with an extension that is not the target of operation was specified.

[Corrective Action]

Specify a file with an extension that is the target of operation, and perform the operation again.

65927

FJSVrcx:ERROR:65927:*file_name* already exists.

[Description]

The specified file already exists.

[Corrective Action]

Change the file name and perform the operation again.

3.1.11 671XX Series

This section explains the 671XX message series.

67112

FJSVrcx:ERROR:67112:no resources found matching *obj*.

[Description]

The resource that matches *obj* could not be found.

- When creating a physical L-Server:

Failed to configure the IP address of the public LAN.

There are the following cases:

- - When more NICs than the physical server contains have been specified

    The network (NIC) specified when creating the L-Server exceeds the number of NICs of the physical server.

- - When the drivers of cloning images are not the latest

    When a number exceeding the number of NICs has not been specified, and the cloning image specified when creating the L-Server was Windows, the drivers of the cloning image may not be the latest.

  The number displayed as the index is the same number as the detailed display of the L-Server.

- When executing the rcxstorage command:

  - - When "mirror definition" is displayed for *obj*

    The disk matching the description of the replication definition file has not been defined in Resource Orchestrator.

    (There are no disks to be recovered in failover or Disaster Recovery.)

  - - When "disk" is displayed for *obj*

    There are no disk resources to be processed.

    When performing switchover of operating or standby storage, the disk to be processed was created in advance, and the storage unit supports switchover of operating and standby storage.

- When linking a configured physical server to a physical L-Server:

  - - When "disk" is displayed for *obj*

    There are no disk resources to be processed.

- When creating a virtual L-Server:

  - - When *obj* starts with "VLANID"

    The virtual network resource specified in the virtual network definition file was not found on the VM host.

[Corrective Action]

Review the specified conditions.

- When creating a physical L-Server:

  - - When more NICs than the physical server contains have been specified

    Check that the network (NIC) specified when creating the L-Server is smaller than the number of NICs of the physical server. Change the network settings and perform the operation again.

  - - When the drivers of cloning images are not the latest

    Delete the created L-Server.
    Update the drivers of the cloning image specified when creating the L-Server, and create the cloning image again. Create the L-Server again after specifying the re-created cloning image.

- When executing the rcxstorage command:

  - - When "mirror definition" is displayed for *obj*

    Check that the content of the replication definition file is correct, and then execute the command again.

  - - When "disk" is displayed for *obj*

    Check the disk resource to be processed, and perform the command again.

- When linking a configured physical server to a physical L-Server:

  - - When "disk" is displayed for *obj*

    Check the disk resource to be processed, and perform the command again.

- When creating a virtual L-Server:

    - When *obj* starts with "VLANID"

        Perform the operation again after checking the target virtual network definition file and resolving the cause of the error.

67117

FJSVrcx:ERROR:67117:obj:failed to create file or directory

[Description]

obj files or directories cannot be created.

[Corrective Action]

Check the following, resolve the cause of the error, and then perform the operation again.

- Confirm the access privileges of the directory.

- Confirm that there is sufficient disk space.

67120

FJSVrcx:ERROR:67120:*keys*:attributes cannot be specified in combination (*details*)

[Description]

The *keys* attribute has been specified simultaneously in the XML definition of the network resource.

details displays detailed information.

keys include the following:

- When "number and lag"

    The number attribute and lag attribute have both been specified in the NetworkSwitchPort tag.

    The following is displayed in *detail*.

    - number=*the specified port number*,lag= *link aggregation group name*

[Corrective Action]

Review the attributes for *keys*, specify the correct one, then retry.

67129

FJSVrcx:ERROR:67129:syntax error.

[Description]

There is an error in the format of the command. "*Usage*" is displayed.

[Corrective Action]

Change the command format and perform the operation again.

67130

FJSVrcx:ERROR:67130:option:option requires an argument

[Description]

"*usage*" is displayed.

An argument has not been specified for an option.

A parameter has not been specified.

[Corrective Action]

Change the command format and perform the operation again.

After specifying the parameter, perform the operation again.

67131

FJSVrcx:ERROR:67131:option:argument too long

[Description]

The specified option argument is too long.

option may not be displayed.

[Corrective Action]

Review the specified option argument, and perform the operation again.

67132

FJSVrcx:ERROR:67132:option:contains invalid character

[Description]

Invalid characters are included in the specified option argument.

When this message is displayed at rcxadm config import command execution time, an illegal character is included in the definition of XML of the snap shot displayed with option.

[Corrective Action]

Review the specified option argument.

When performing an operation where line breaks are prohibited, confirm that line break codes are not inserted at the end of line when copying and pasting are done.

After confirmation, perform the operation again.

When this message is displayed at rcxadm config import command execution time, after removing the following characters of the comment tag from the definition of XML of the snapshot displayed with option, perform the operation again.

- Percent("%")

- Backslash("\")

- Double quotation(")

- Changing line

67133

FJSVrcx:ERROR:67133:*value*:out of range

[Description]

The specified value is out of range.

One of the following is displayed in *value*:

- *Specified value*

- "*XML tag*(*specified value*, *range*)"

- "*XML key*(*specified value*, *range*) server/free/remain amount of ip address/remain amount of MAC address/remain amount of WWN address"

- *Parameter key name*(*VM specific information definition file name*) (*specified value*),*range*

- *Parameter key name*(*VM specific information definition file name*) (*specified value*,*range*)

- vlanid=*specified value*

[Corrective Action]

Perform the operation again after correcting the specified value.

When *value* is one of the following, perform corrective action according to the content:

- "*XML key* (*specified value*, *range*) server"

  Perform the operation again after checking the hardware configuration (CPU, memory) of the VM host on which the L-Server is located using the GUI.

- "*XML key* (*specified value*, *range*) free"

  Perform the operation again after checking the available resources (CPU, memory) of the VM host on which the L-Server is located, and securing sufficient resources.

- "*XML key*(*specified value*, *range*) remain amount of ip address/remain amount of MAC address/remain amount of WWN address"

  The error may be the result of one of the following:

  - When using a physical L-Server, the specified NIC number exceeds the upper limit of the supported number

  - The specified IP addresses, MAC addresses, and WWNs do not exist in the resource pool

  - There are no vacant addresses in the resource pools of IP addresses, MAC addresses, and WWNs

  Perform the operation again after reviewing the values corresponding to the displayed IP addresses, MAC addresses, and WWNs in the L-Server XML file and correcting their definitions. Add the IP addresses, MAC addresses, and WWNs that are necessary for the resource pool.

- "*Parameter key name*(*VM specific information definition file name*) (*specified value*),*range*" or "*Parameter key name*(*VM specific information definition file name*) (*specified value*,*range*)"

  Review the following values, correct the definition, and then perform the operation again.

  - *VM specific information definition file name*

  - *Specified value*

  - *Range*

- "vlanid=*specified value*"

  Check the specified vlanid value, resolve the cause of the error, and then perform the operation again.

67134

FJSVrcx:ERROR:67134:*value*:invalid format

[Description]

The format of the specified value, or the content of the XML specified when performing the following is not correct:

- Creating an L-Platform

- Creating an L-Server

- Modifying an L-Server

- Importing an L-Server template

- Registration of iSCSI boot information

- Registering disk resources for a VM guest

- Changing disk resources for a VM guest

- Create tenant folders

- Importing configuration information

- Creating network devices

- Changing network devices

- "*Parameter key name*(*VM specific information definition file name*, *specified value*, *range*)"

One of the following is displayed in *value*:

- *XML_tag_name*

- Folder XML

- L-Server XML

- L-Server Template XML

- Network XML

- User XML

- UserGroup XML

- Pool XML

- iSCSI XML

- vm-disk XML

- Tenant XML

- NetworkDevice XML

- Link XML

- *Specified_value* (IP address, etc.)

- -duration

[Corrective Action]

- When "-duration" is displayed:

  Specify a correct value or format for the option, then perform the operation again.

  For details, refer to "1.7.15 rcxadm logctl".

- When "*Parameter key name*(*VM specific information definition file name*, *specified value*, *range*)" is displayed:

  Perform the operation again after reviewing the value of the file name, specified value and range VM specific information definition file and correcting the definition.

In cases other than the above, correct the specified value or the content of the XML file, and then perform the operation again.

For details on XML files, refer to "Chapter 2 Resource Configuration Information and User Definition Information (XML Files)".

67135

FJSVrcx:ERROR:67135:*option*:invalid argument

[Description]

A value that cannot be specified for an option argument has been specified. "usage" is displayed.
"Network ManagementLanSubnet" or "Network AddressSet" may be displayed for *option*

In these cases, both the admin LAN subnet and the public LAN subnet are specified.

[Corrective Action]

Take corrective action based on the content of *option*.

- When *option* is "Network ManagementLanSubnet" or "Network AddressSet"

  Both the admin LAN subnet and the public LAN subnet are specified.

  Based on the type of network resource to be created, specify either the admin LAN subnet or the public LAN subnet.

- In other cases

  After specifying the correct argument, perform the operation again.

67136

FJSVrcx:ERROR:67136:*filename*:invalid file format

[Description]

There is an error in the file format specified for *filename*.

If "server_control.rcxprop" is displayed for *filename*, there is no description starting with "ServerControl," on the first line of the file.

[Corrective Action]

Check the specified file format.

Take corrective action based on the content of *filename*.

- When "activation.dat" is displayed:

  Check the format of the license information definition file referring to "8.6.1 When Collecting Cloning Images from Physical L-Servers" of the "Setup Guide CE".

- When "image_admin_hyperv.rcxprop" or "image_admin_hyperv_*user_group_name*.rcxprop" is displayed:

  Check the specified file format referring to "10.3.5 [OS] Tab" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- When "server_spec.rcxprop" is displayed:

  Check the format of the corresponding file, referring to "E.1.1 Definition Files" in the "Setup Guide CE".

- When "server_control.rcxprop" is displayed:

  Check the file format, referring to "Configuration when Creating a Virtual L-Server Using VMware ESXi on Other Vendor's Servers" in "E.1.1 Definition Files" in the "Setup Guide CE".

- When the following files are displayed:

  Check the format of the specified server NIC definition file referring to "2.11 Server NIC Definitions".

  [Windows]
  Installation_folder\Manager\etc\customize_data\nicdefctl\model*Chassis_model_name_product_name*.xml
  Installation_folder\Manager\etc\customize_data\nicdefctl\host*VM_host_name*.xml

  [Linux]
  /etc/opt/FJSVrcvmr/customize_data/nicdefctl/model/*Chassis_model_name_product_name*.xml
  /etc/opt/FJSVrcvmr/customize_data/nicdefctl/host/*VM_host_name*.xml

  Check the following cases:

    - That the XML format is correct

    - That XML tags do not overlap, and the specified values are not exceeded

    - That the necessary XML tags are specified

    - That the NIC configuration is correct among the different physical LAN segments

    - That the physical LAN segment name does not overlap

- When "network_device_model.xml" is displayed:

  Check the file format, referring to "2.13 Network Device Model Definition".

67137

FJSVrcx:ERROR:67137:command is already running.

[Description]

The command for backup and restore for manager properties of admin server is already being executed. The command is not executed.

[Corrective Action]

After the current command is completed, execute the command again when necessary.

67140

FJSVrcx:ERROR:67140:*filename*:permission denied

[Description]

You have no access privileges for the file specified in *filename*.

[Corrective Action]

Check the owner, the owner group, and access privileges of the specified file.

67142

FJSVrcx:ERROR:67142:*filename*:read failed

[Description]

Refer to the explanation in "Message number 67142" in the "Messages VE".

[Corrective Action]

Refer to the explanation in "Message number 67142" in the "Messages VE".

There is also the following case for Resource Orchestrator.

- When "server_spec.rcxprop", "storage_portset.rcxprop" or "storage_mirroring.rcxprop" is displayed for *filename*:

  Check that reading of the file is allowed.

- When "storage_portset.rcxprop" is displayed for filename

  Check that reading of the file is allowed.

- When "fc_connection_pattern_filename.rcxprop" is displayed for filename

  Check that reading of the file is allowed.

67146

FJSVrcx:ERROR:67146:*file_name*:file not found

[Description]

The process was canceled as the target file was not found.

[Corrective Action]

- When executing the rcxchkmismatch command and *file_name* is "fullbackup_info.xml"

  Perform the following corrective actions and then continue restoring the admin server:

  - There is an error in the directory name of the L-Server restoration log storage directory specified for the argument of the -logdir option.

    Specify a correct directory name for the argument of the -logdir option, and then execute the rcxchkmismatch command again.

- The rcxreserveid command has not been executed.

Perform the operation for restoring the admin server again, from execution of the rcxreserveid command.

- When executing reflection of server NIC definition (rcxadm nicdefctl commit)

There are no folders or files of Resource Orchestrator.
Collect the relevant message and troubleshooting data, and contact Fujitsu technical staff.

- When *file_name* is "storage_portset.rcxprop"

Notify the infrastructure administrator of the information in this message.
The infrastructure administrator should create the definition file, referring to "6.1.1 Creating Definition Files for Combining Ports for SAN Storage" in the "Setup Guide CE".

- When file_name is "fc_connection_pattern_filename.rcxprop"

Notify the infrastructure administrator of the information in this message.
The infrastructure administrator should create the definition file, refer to "Setting the Number of FCs Fitted and their Position for Each Physical Server" in the "Setup Guide CE".

- In other cases

Specify a file as the target of operation, and perform the operation again.

67147

FJSVrcx:ERROR:67147:*file_name*:permission denied

[Description]

One of the following is displayed in *file_name*:

- Resource Name

No permission has been granted for the specified resource.

- File Name

No access is available for the Resource Orchestrator file *name*.

[Corrective Action]

Take corrective action based on the content of *file_name*.

- Resource Name

Perform the operation as a user with permission for the specified resource.

- File Name

Collect this message and troubleshooting data, and contact Fujitsu technical staff.

67149

FJSVrcx:ERROR:67149:*filename*:read failed

[Description]

Loading of the Resource Orchestrator file *filename* has failed.

[Corrective Action]

Check the following, resolve the cause of the error, and then perform the operation again.

- Check the system log to see if there are error message(s) regarding the disk or file system.

67153

FJSVrcx:ERROR:67153:*obj*:already exists

[Description]

obj already exists.

One of the following is displayed in *obj*:

- When *obj* is "AuthManager"

  Directory services may already exist.

  When this message is displayed when configuring a spare server, a server with an agent registered may have been specified as a spare server of a primary server for which the server switchover method is backup and restore.

- When *obj* is "vnet"

  A network resource with the same VLANID has already been created.

- When *obj* is "network_resource_name"

  A network resource with the same name already exists.

- When *obj* is "vm-disk-storagemgr"

  A storage management software with the same name already exists.

- When *obj* is "vm-disk-vstorage"

  A virtual storage resource with the same name already exists.

- When *obj* is "*disk resource name defined in XML*"

  A disk resource with the same name already exists.

- When *obj* is "VmHost (ip=*IP address of the VM host defined in XML*).Disks.Disk(path=*Device path to the disk resource defined in XML*)"

  A disk resource for VM guests which has the same device path already exists on the specified VM host.

If this message is displayed when executing the rcxadm config import command, change the name of the object to import, or either delete or rename *obj*, and then perform the operation again.

[Corrective Action]

Either change the name of the object to import, or delete the existing obj, and then perform the operation again.

In any other cases, take corrective action based on the content of *obj*.

- When *obj* is "AuthManager"

  Delete registered directory services.

  For details, refer to "1.7.10 rcxadm authctl".

  If this message is displayed when a spare server is configured, exclude the server with an agent registered from the configuration target of the spare server.

- When *obj* is "vnet"

  Either specify a different VLAN ID, or delete the existing network resource, and then perform the operation again.

- When *obj* is "network_resource_name"

  Change the network resource name, and perform the operation again.

- When *obj* is "vm-disk-storagemgr"

  The name of storage management software, "vm-disk-storagemgr" is reserved as the name to register disk resources for VM guests. Delete or rename already registered storage management software, and then perform the operation again.

- When *obj* is "vm-disk-vstorage"

   The name of virtual storage resource, "vm-disk-vstorage" is reserved as the name to register disk resources for VM guests. Delete a virtual storage resource, or change the name of the resource that is already registered, and perform the operation again.

- When *obj* is "*disk resource name defined in XML*"

   Either change the name of the disk resource for the VM guest to register, or delete or rename *obj*, and then perform the operation again.

- When *obj* is "VmHost (ip=*IP address of the VM host defined in XML*).Disks.Disk(path=*Device path to the disk resource defined in XML*)*"

   Either change the device path to register, or delete or rename *obj*, and then perform the operation again.

67154

FJSVrcx:ERROR:67154:*obj*:not found

[Description]

The error may be the result of one of the following:

- The specified object name *obj* does not exist

- There is no object that meets the conditions

- The object that met the conditions was deleted deletion processing

- The specified object exists, but is not included in the access scope of the user group or user that performed the operation

- The target resource folder was not specified when a user with multiple access scopes performed an operation

   When a user with multiple access scopes performs the following operations, "Folder:not found" or "*Specified_resource_name*:not found" is displayed.

   - Creation of an L-Server, with no target resource folder name set

   - Creation of a tenant folder, resource folder, or resource pool, without specifying the name using the hierarchy

   - Moving of a tenant folder, resource folder, or resource pool, without specifying the -to option for the destination

- Creation of an L-Server from the ROR console, specifying values in the definition file. The values are larger than the actual number of CPUs and CPU clock speed of a server for which server management software is not used

- Registration of a network device for which the registration status is "already registered" in the network pool was attempted

- When *obj* starts with the following value, the operation has failed because a system disk has not been specified during physical L-Server creation.

   - System Disk

If this message is displayed when the command is executed, the resource type of the specified object name may differ from the type of resource that can be specified in the arguments for the command.

The specified object name or the resource type of the specified object name is displayed in *obj*.

If the object has been deleted during the process, the resource type is displayed.

When executing a command, one of the following is displayed for the resource type of the object name:

- For a physical OS or VM host

   - server OS

   - vm_host

   - *VM host name*

- For VM guests

   - VM Guest

- *VM guest name*

- For VM management software

  - *VM management software name*

- For system images and cloning images

  - image

  - *obj*(image)

- For shared libraries

  - library share

- For directory service

  - AuthManager

When the resource type is "virtual_storage", there is a chance that there is not enough available space on the virtual storage resource.

- When *obj* is "Selectable virtual_storage(*condition*)"

  There is a possibility where the amount of disk of the selected virtual storage resource is insufficient.

- When *obj* is "Selectable mac_address_set(*condition*)"

  There is no empty address in the address set resource (Media Access Control address) or the address set resource (Media Access Control address) does not exist.

- When *obj* is "resource" or "Pool"

  The resource to be registered with or canceled from the resource pool, or the resource pool, was not found.

- When *obj* is "DNSServer.nic=X"

  The definition of NIC that sets the DNS server L-Server is not found.

- When *obj* is "nic(position=[*nic*] server=*server*)"

  Operations fail, since the specified NIC is not on a server in the physical LAN segment.

- When *obj* starts with the following:

  The operation has failed because there is no internal resource table.

  - VnetRoute

  - CnmVirtualLanSwitch

  - CnmVirtualNetwork

- When *obj* starts with the following:

  The operation has failed because there is no virtual network or virtual switch on the target server of L-Server creation.

  - VirtualNetwork

    When the target server is VMware, the virtual network indicates a port group on the virtual switch.

  - VirtualLanSwitch

    When the target server is Hyper-V, virtual switch indicates the virtual network of Hyper-V.

For details on conditions for automatic creation of virtual networks or virtual switches, refer to "1.2.7 Simplifying Networks" in the "Setup Guide CE".

- When *obj* starts with "rcx-portset"

  The procedure described in "NetApp FAS Storage Configuration" in "D.3.2 When Using NetApp FAS Storage" of the "Setup Guide CE" may not have been performed.

- When *obj* is "AuthManager"

  The operation has failed because a directory service is not registered.

- When *obj* starts with "LServer"

  There is no target L-Server for the power operation.

  Check the status of the L-Server and whether the L-Server exists in the resource folder.

- When *obj* starts with "L-Server Template"

  There is no target L-Server template for the operation.

  Check that the specified L-Server template exists.

- When *obj* starts with "L-Platform"

  There is no target L-Platform for the operation.

  Check that the specified L-Platform exists.

- When *obj* starts with "MacAddressSet"

  There is no resource including a MAC address described in the XML file used to import Disaster Recovery.

  There are no address set resources that include a MAC address.

- When *obj* starts with the following:

  A virtual disk that has a *device_name* path, a network with one more index than the *NIC*, or a network with a *MAC address* cannot be found in the VM guest allocated to the L-Server.

    - VmGuestStorage(*device_name*)

    - VirtualNic(LNic index=*NIC_index*)

    - VirtualNic(LNic mac_address=*MAC_address*)

- When *obj* starts with the following:

  The folder where the L-Server was created is different to the location of the VM host where the virtual machine has been built or to the resource pool to which the physical server belongs.

    - TargetServer id=*Virtual_machine_ID*

    - PhysicalServer id=*Physical_server_ID*

- When *obj* starts with "PhysicalLANSegment"

  Operations fail, since a physical LAN segment specified using network resource physical LAN segment is not registered in the server NIC definition.

- When *obj* starts with "link aggregation(switch=*switch*,lag=*labname*)"

  The operation failed because the ports that make up the *lagname* link aggregation of the *switch* LAN switch blade are in the following state.

    - A link aggregation configuration port does not exist.

    - The port of the link aggregation configuration has not been recognized by this product.

    - A member port does not exist in the link aggregation configuration.

    - The LLDP of the link aggregation configuration port is not valid.

    - An internal port has not been specified for the member port of the link aggregation configuration.

- When *obj* is "CTMG backup directory(base)"

  A request to collect a difference backup was made in the state where a base backup has not been collected.

- When *obj* is ProvisioningNode(name=*fw_device_name*)

  The network device for fw_device_name is not registered in the network pool of the tenant for *name*.

[Corrective Action]

After checking the following for the displayed object, perform the operation again.

- That the object exists

- That the object meets the conditions

- The access scope of the object has been set

- Specification of a target resource folder, when the user has multiple access scopes

    - When creating an L-Server, specify the name of the resource folder where the L-Server will be created in the XML file for the L-Server.

      For details on resource folder names, refer to the following information:

        - "Example Creating an L-Server in a resource folder or a tenant folder" in "2.3.1 Definition Information for Physical L-Servers (XML)"

        - "Example Creating an L-Server in a resource folder or a tenant folder" in "2.3.2 Definition Information for Virtual L-Servers (XML)"

    - When creating tenant folders, resource folders, or resource pools, specify the name using the folder hierarchy, including the destination resource folder name.

      For details on resource folder names, refer to the following information:

        - "1.3.8 rcxadm pool"

        - "1.3.9 rcxadm folder"

        - "2.7 Resource Folders"

        - "2.10 Tenants"

    - When moving a tenant folder, a resource folder, or a resource pool, specify the destination resource folder.

      For details on destination resource folders, refer to the following information:

        - "1.3.8 rcxadm pool"

        - "1.3.9 rcxadm folder"

        - "1.3.13 rcxadm tenant"

- Check that the values specified in the definition file are less than the actual number of CPUs and CPU clock speed of a server for which server management software is not used.

- Change the registration status of network devices to "already registered", and register the network devices in the resource pool again.

- When *obj* starts with the following value, the operation has failed because a system disk has not been specified during physical L-Server creation.

    - System Disk

      Confirm that a system disk (DiskIndex 0) is defined and perform the operation again.

If this message is displayed when the command is executed, perform the operation again after checking the resource type of the specified object.

When the following values are displayed for *obj*, take the following corrective action based on the content.

- "library share" [Hyper-V]

  There is an error in the storage destination specified for the cloning image.

  Check if the specified shared library is available.

- "Selectable virtual_storage(*condition*)"

    - There is a chance that there is not enough available disk space on the selected virtual storage.

      Check the value of available space indicated by size=*%1* (GB), and perform the operation again.

      In *condition*, one of the following is displayed:

- size=*%1*, vm_host=*%2*

- size=*%1*, vm_host=*%2*, pool=*%3*

- size=*%1*, vm_host=*%2*, virtual_storage=*%3*

- When using RHEL5-Xen as server virtualization software, the contents of the storage connection definition file may be incorrect.

  Review the settings in the storage connection definition file.

  For details, refer to "E.4.4 Setup" of the "Setup Guide CE".

- "Selectable disk(condition)"

  There is no disk resource matching the specified size registered in the storage pool.

  Check whether or not an unused disk resource larger than size=*%1*(GB) has been registered in the storage pool, then perform the operation again.

  In *condition*, *%1* is displayed.

    - size=*%1*

- "Selectable mac_address_set(*condition*)"

  Perform the appropriate corrective action for each *condition*. In *condition*, one of the following is displayed:

    1. free address

       Perform the operation again, after checking if there are vacant addresses in the address set resources (MAC addresses).

    2. resource

       There are no address set resources (MAC addresses). Perform the operation again, after registering the address set resources (MAC addresses) in accessible address pools.

- "resource" or "Pool"

  The resource to be registered with or canceled from the resource pool, or the resource pool, was not found. Check that the resource or the resource pool exists, and then perform the operation again.

- "DNSServer.nic=*X*"

  The NIC definition to set for the DNS server was not found. Check whether the NIC for *X* exists, review the NIC definition on DNS server, and then perform the operation again.

- "AuthManager"

  Perform the operation again after registering a directory service.

- "nic(position=[*nic*] server=*server*)"

  There is no specified NIC on servers. Check the server NIC definition.

- When *obj* starts with one of the following values:

  Wait for a short while and then repeat the operation.

    - VnetRoute

    - CnmVirtualLanSwitch

    - CnmVirtualNetwork

- When *obj* starts with one of the following values:

  Perform the operation again after creating a virtual network or a virtual switch on the target server of L-Server creation.

    - VirtualNetwork

      When the target server is VMware, the virtual network indicates a port group on the virtual switch.

    - VirtualLanSwitch

      When the target server is Hyper-V, virtual switch indicates the virtual network of Hyper-V.

- When *obj* starts with "rcx-portset"

  Check the storage unit configuration referring to "NetApp FAS Storage Configuration" in "D.3.2 When Using NetApp FAS Storage" of the "Setup Guide CE".

- When *obj* starts with "LServer"

  There is no target L-Server for the power operation. Check the status of the L-Server, and perform the appropriate operation or specify another resource folder, and then perform the operation again.

- When *obj* starts with "L-Server Template"

  There is no target L-Server template for the operation. Specify another L-Server template, and then perform the operation again.

- When *obj* starts with "L-Platform"

  There is no target L-Platform for the operation. After checking the existence of L-Platforms, perform the operation again.

- When *obj* starts with "MacAddressSet"

  Check whether there is an address set that includes a MAC address, and then retry.

- When *obj* starts with one of the following values:

  Check whether one of the items listed exist on the VM guest allocated to the L-Server: virtual disks that contain the path for *device_name*, networks that have one more network resource than *NIC_index*, or networks that have *MAC_address*.

    - VmGuestStorage(*device_name*)

    - VirtualNic(LNic index=*NIC_index*)

    - VirtualNic(LNic mac_address=*MAC_address*)

- When *obj* starts with one of the following values:

  Check that the VM host, or the resource pool and the destination folder for L-Server creation belong to the same tenant. This assumes that there is a configured virtual machine on the VM host, and a physical server belongs to the resource pool.

    - TargetServer id=*Virtual_machine_ID*

    - PhysicalServer id=*Physical_server_ID*

  When the destination folder for L-Server creation does not belong to the same tenant as that of the resource pool, change the value of "Destination folder" (use the -to option for the command operation) to make them belong to the same tenant, and then perform the operation again.

  When a resource pool does not belong to a tenant, specify a folder not contained in a tenant as the destination for L-Server creation.

- When *obj* starts with "PhysicalLANSegment"

  The physical LAN segment specified using network resource physical LAN segment is not registered in the server NIC definition. Confirm the server NIC definition and the physical LAN segment of the network resources, and perform the operation again.

- When *obj* starts with "link aggregation(switch=*switch*,lag=*labname*)"

  Review the *lagname* link aggregation configuration of *switch* LAN switch blade, then make the correct settings. After this, click the *switch* LAN switch blade <Update> button in the ROR console to have it recognized by this product.
  Refer to "4.2.4.4 When Using Link Aggregation" in the "Setup Guide CE" for information on the settings.

- When *obj* is "CTMG backup directory(base)"

  Collect a base backup, and then repeat the operation.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *obj*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

- When *obj* is ProvisioningNode(*name=fw_device_name*)

  Check if the network device for *fw_device_name* is registered in the network pool of the tenant for *name*.

  When the network device is not registered, check if *fw_device_name* is registered in the server tree using a different name, and perform the import operation again.

When the network device to use cannot be registered, delete the name L-Platform following the procedure in "15.3 Switchover Operations when Damaged" in "Operation Guide CE".

67155

FJSVrcx:ERROR:67155:*type obj*:already exists

[Description]

Refer to the explanation in "Message number 67155" in the "Messages VE".

However, in Resource Orchestrator, one of the following values may be displayed for *type*:

- "VMHost" or "PhysicalServer"

  obj has already been registered in a resource pool.

- "VM", "Server", "Storage", "Network", "Address", or "Image", and if this message is output during creation of resource pools

  obj has already been registered in a resource pool.

  When physical L-Servers were created, or network resource settings were changed, the IP addresses of the admin LANs, which are used by the physical L-Servers and the managed servers that are registered in the server tree, will overlap.

- "server", and if this message is output during creation of physical L-Servers

  The IP address of *obj* is overlapping with the IP address of the admin LAN used by the L-Servers and the managed servers.

- "IP address"

  The IP address *obj* of the public LAN specified during creation of the physical L-Server is already in use.

- "iSCSI.iqn"

  The IQN name in *obj* is already in use.

- "iSCSI.ip"

  The IP address in *obj* is already in use.

[Corrective Action]

Refer to the explanation in "Message number 67155" in the "Messages VE".

Take corrective action based on the content of *type*.

- "VMHost" or "PhysicalServer"

  Perform the operation again after releasing registration of *obj* from the resource pool.

- "VM", "Server", "Storage", "Network", "Address", or "Image", and if this message is output during creation of resource pools

  Check the resource pool of *obj*, and create it again if necessary.

  When physical L-Servers were created, or network resource settings were changed, change the IP address of the admin LAN used by the managed servers that are registered on physical L-Servers or the server tree, then perform the operation again.

- "server", and if this message is output during creation of physical L-Servers

  For the admin LAN IP address, specify an IP address not used by another resource, or change the IP address of the resource that is currently overlapping, and then perform the operation again.

- "IP address"

  For the created physical L-Server, manually set the public LAN IP address, or review the network configuration after deleting the physical L-Server, and then perform the operation again.

- "iSCSI.iqn"

  Perform the operation again after correcting the specified IQN name.

- "iSCSI.ip"

  Perform the operation again after correcting the specified IP address.

67157

FJSVrcx:ERROR:67157:*obj*: user not privileged.

[Description]

A user who does not have sufficient privileges executed the command. The command is not executed.

[Corrective Action]

Execute the command again, with sufficient privileges.

67161

FJSVrcx:ERROR:67161:*option*:can not specify

[Description]

Refer to the explanation in "Message number 67161" in the "Messages VE".

There is also the following case for Resource Orchestrator.

- When *option* is "Pool"

  The Pool element cannot be specified in the XML file.

[Corrective Action]

Refer to the explanation in "Message number 67161" in the "Messages VE".

There is also the following case for Resource Orchestrator.

- When *option* is "Pool"

  Confirm that there is no Pool element in the XML file and perform the operation again.

- When *option* is "SNMP Community" or "MAC address" and the operation being performed is registration of a server

  Perform one of the following corrective actions:

  - Do not specify the SNMP community or MAC address information for the admin LAN.

  - Change the settings in the definition file described in the "Configuration when Creating a Virtual L-Server Using VMware ESXi on Other Vendor's Servers" in "E.1.1 Definition Files" in the "Setup Guide CE", and then specify the server as the server which can use agents.

67162

FJSVrcx:ERROR:67162:*option*:is required

[Description]

option must be specified. "usage" is displayed.

[Corrective Action]

After checking the parameter, perform the operation again.

Take corrective action based on the content of *option*.

- "name"

  Specify the L-Server name for the -name option, and perform the operation again.

- "NICGroups.NICGroup.NICLinks"

  Check that the NICLink tag appears twice in the XML file specified in creation or modification of the L-Server.

- "-allow deldisk or -deny deldisk"

  When the disk cut out from virtual storage is reduced from L-Server, the specification of either option of allow deldisk or -deny deldisk is indispensable.
  Specify -allow deldisk or either of -deny deldisk option, and perform the operation again.

67167

FJSVrcx:ERROR:67167:*obj*:contains *type*

[Description]

The request could not be executed because *obj* contains a *type* object.

The object name is displayed in *obj*.

One of the following is displayed in *type*:

- For Physical Servers

  "physical server" is displayed.

- For LAN Switches

  "LAN switch" is displayed.

- For VM Hosts

  "VMHost" is displayed.

- For Virtual Disks

  "disk" is displayed.

- For Virtual Storage

  "vstorage" is displayed.

[Corrective Action]

Perform the operation again after deleting the *type* object from *obj*.

Take corrective action based on the content of *type*.

- When *type* is "disk"

  Delete the L-Server using the disk resource created from the virtual storage resource displayed in *obj*.

- When *type* is "vstorage"

  Delete the L-Server using the virtual storage resource created under the physical storage unit resource displayed in *obj*.

67168

FJSVrcx:ERROR:67168:*obj*:no disk found

[Description]

There is no disk in the VM guest specified for cloning image collection.

If you omit specifying the storage location when collecting a cloning image for a VM guest, it will be stored in the same location as the disk of the VM guest, but in this case, the storage location could not be determined because the VM guest does not have a disk.

[Corrective Action]

Perform the operation again after specifying the location to store the cloning image.

67170

FJSVrcx:ERROR:67170:*filename*:specified element not found in *targetfile*. (element =*xpath*)

[Description]

The xml element specified in the *filename* file or the xml element of the *filename* resource specified using the command was not found in *targetfile*.

- *filename*

   Specified mapping file or resource name.

- *targetfile*

   File to be converted.

- *xpath*

   xpath path of the element in the *filename* file.

[Corrective Action]

Correct the element definitions in the *filename* file, and execute the command again.
Or, check the resource name specified in the command and re-execute the command.

67171

FJSVrcx:ERROR: 67171:*filename*:specified element's attribute not found in *targetfile*. (element =*xpath*, attribute =*name*:*value*)

[Description]

The attribute *name* of the element specified in the *filename* file or the attribute *name* of the *filename* resource specified in the command cannot be found in the *targetfile* file. The *value* could not be changed to the one specified in value because of this.

- *filename*

   Specified mapping file or resource name.

- *targetfile*

   File to be converted.

- *xpath*

   xpath path of the element in the *filename* file.

- *name*

   Attribute name of the element in the *filename* file.

- *value*

   Attribute value of the element in the *filename* file.

[Corrective Action]

Re-execute the command in the *filename* file after correcting the element definition.

Or, check the resource name specified in the command and re-execute the command.

67178

FJSVrcx:ERROR:67178:*obj*:is *status* status

[Description]

The request could not be executed because *obj* is in the status *status*.

One of the following is displayed in *obj*:

- Virtual storage resource name

- Disk Resource Name

- VM name

- VM guest name

- Library server name

- L-Server Name

- Physical server name

- Network device name

One of the following is displayed in *status*:

- normal

- warning

- unknown

- stop

- error

- fatal

- power-on

    Indicates that the power of the server is on.

- power-off

    Indicates the state in which a server is powered off, a VM guest that was operated on an L-Server has been deleted from server virtualization software, or an unregistered VM host has been moved to a VM pool.

- not belonging to any storage pool

    Indicates that the specified virtual storage resource is not registered in a storage pool.

- not accessible

    Indicates that no access is available from the specified VM host or server.

- not enough space for disk(name=*disk*)

    Indicates that there is insufficient free space on the virtual storage resource. The resource name of the disk is displayed in *disk*.

- not enough free space

    Indicates that there is insufficient free space on the virtual storage resource.

- defined

    Indicates that resources (VM guests, servers, and disks) have not been allocated.

- preserved

    Indicates that servers have not been allocated.

- allocated

- shared

- reserved

- free

- excluded

- When *obj* is an IP address and *status* is "reserved"

  Indicates that the IP address is already reserved.

- When *obj* is an IP address and *status* is "free"

  Indicates that the IP address has already been released.

- When *obj* is an IP address and *status* is "excluded"

  Indicates that the IP address has already been excluded.

[Corrective Action]

Check the necessary requirements for the *obj* operation, and fulfill them. Perform the operation again after fulfilling the requirements.

- When *obj* is a network device name

  Perform the operation again after waiting a while. When the same errors are displayed, notify the infrastructure administrator of the information in this message.
  An infrastructure administrator should collect this message and troubleshooting data, and contact Fujitsu technical staff.

- When "defined" is displayed for *status* during a batch power ON operation

  Perform the usual startup operations for the relevant L-Servers.

- When *status* is one of the following

  Change the IP address of the L-Server or managed server, then perform the operation again:

  - reserved

  - free

  - excluded

67181

FJSVrcx:ERROR:67181:*obj*:is not *mode* mode

[Description]

Execution of the request failed, as the specified *obj* is not *mode* mode.

- When *obj* is a disk resource

  One of the following is displayed in *mode*:

  - Fibre Channel connection (Fibre Channel connection)

  - iSCSI connection (iSCSI connection)

- When *obj* is something other than the above

  Refer to "Message number 67181" in "Messages VE".

[Corrective Action]

- When *obj* is a disk resource

  Check the connection status of the specified *obj*.

  - When "FC" is specified for Disk connection type (Disk type) in the L-Server XML

    A disk with a Fibre Channel connection is allocated to the L-Server.

  - When "iSCSI" is specified for Disk connection type (Disk type) in the L-Server XML

    A disk with an iSCSI connection is allocated to the L-Server.

67182

FJSVrcx:ERROR:67182:*type*:is not the same between *obj1* and *obj2*

[Description]

Refer to the explanation in "Message number 67182" in the "Messages VE".

However, the following is added to *type* for Resource Orchestrator:

- resource type

- VMType

- OSType

- Disk(name=*disk resource name defined in XML*).size

- folder type

[Corrective Action]

Refer to the explanation in "Message number 67182" in the "Messages VE".

Also, perform the following corrective action depending on the *type* value:

- "resource type"

Check the resource pool type of *obj1* and the resource type of *obj2*, and perform the operation again after specifying a suitable combination of resource pool and resource.

For details on resource pool types and the resources that can be stored, refer to "1.2.2 Resource Pool" in the "Setup Guide CE".

If this message is output when registering the disk resource with a storage pool, check whether the disk is the one created in advance using the disk resource.

From the command-line, execute rcxadm disk show.
For details on the rcxadm disk show command, refer to "1.3.4 rcxadm disk".

- "VMType"

Check the VM type of the resource *obj1* and the VM type of the resource *obj2*, specify resources with the same VM type and then perform the operation again.

The combination of an *obj1* resource and an *obj2* resource is incorrect. Specify an unused address resource for the combination to be supported, and perform the operation again.

- "OSType"

Check the OS type of the L-Server and the images specified in XML, specify resources with the same OS type and then perform the operation again.

- "Disk(name=*disk resource name defined in XML*).size"

Confirm that the value of the size attribute of *the disk resource name defined in the XML file* is the same for both the *obj1* VM host and the *obj2* VM host, and then perform the operation again.
In *obj1* and *obj2*, *"*VmHost(ip=*IP address of the VM host defined in XML*)" is displayed.

- "folder type"

After checking the type of the existing resource folder, L-Platform, and resource folder specified in the XML file, specify the same type in the XML, and then perform the operation again.

67192

FJSVrcx:ERROR:67192:communication error.target=*target*

[Description]

An error occurred while communicating with *target*.

This message is output when a communication error occurs between the L-Server and the manager.

[Corrective Action]

- Check that an agent is installed on the L-Server.

- Check that there is no problem in the network path between the L-Server and the manager.

- Execute the command specifying the file for the argument. When *target* is "Resource Orchestrator Manager", check whether or not the character code for the XML file is UTF-8.

Refer to the explanation in "Message number 67192" in the "Messages VE".

67197

FJSVrcx:ERROR:67197:DB access error

[Description]

A DB access error has occurred.

[Corrective Action]

Collect this message and troubleshooting data, and contact Fujitsu technical staff.

67198

FJSVrcx:ERROR:67198:command execution error.*detail*

[Description]

An error occurred in the manager command.

In *detail*, the following information is displayed:

- When "Failed to access database for backup." is displayed

  Accessing of the database where configuration definition information is stored failed. The command is not executed.

[Corrective Action]

Perform corrective action based on the content output for *detail*.

Where there is nothing relevant to *detail*, refer to "Message number 67198" in the "Messages VE".

- "timeout"

  - When using PRIMECLUSTER GDS as storage management software

    - During the process, the connection between the admin server and the storage management software may have been lost.

      Check the power status and communication status of the storage management software.

    - There may be an error in the PRIMECLUSTER GDS settings.

      Review the PRIMECLUSTER GDS settings.

    - The storage management software may be overloaded.

      Perform the operation again after completing the high-load processing.

- "Failed to access database for backup."

  Check the status of the database, resolve the cause of the access failure, and then execute the command again.

  If a string including double-byte characters is specified for the -dir option of the rcxbackup command, accessing of the database will fail.

3.1.12 672XX Series

This section explains the 672XX message series.

67209

FJSVrcx:ERROR:67209:*obj*:already in use

[Description]

The IP address or MAC address of *obj* cannot be used, since the addresses are already being used.

There may also be the following cases:

- *obj* is already in use.

    - This also applies when an already excluded IP address (an admin server, a managed server, a network address, or a broadcast address) is specified for an exclusion IP address, when configuring a network resource.

    - The specified disk resource is used for an L-Server. The size and path cannot be changed for the disk resources used by an L-Server.

    - The specified disk resource is used by an L-Server. The disk resource has been registered in a resource pool. Therefore, disk registration cannot be released.

- In *obj*, the MAC address written in "mac_address=" has already been used.

[Corrective Action]

Review the specified option argument, and perform the operation again.

When this message is output, the same IP address or MAC address may be being used for the following registered devices.

- Chassis

- LAN switch

- Network device

- Admin server

- Managed server

- Power monitoring device

For other cases, perform the following corrective actions.

- When *obj* is already in use

    Perform one of following corrective actions:

    - Review the specified option argument, and perform the operation again.

    - Exclude *obj* from an L-Server.

    - Release registration of *obj* from the storage pool.

- In *obj*, when the MAC address written in "mac_address=" has already been used

    Perform the operation again after correcting the specified MAC address.

67210

FJSVrcx:ERROR:67210:*obj*:is busy

[Description]

The requested process cannot be performed as another process is already being performed.

[Corrective Action]

Take corrective action based on the content of *obj*.

- When *obj* is a network resource

    Wait for a short while and then repeat the operation. After deleting the L-Server connected to the network resource, perform the operation again.

- When *obj* is "Manager task"

Check the status of the admin server, and perform the operation again after any operations being executed on the admin server are completed.

If this message is displayed when the admin server is stopped, the operation being executed on the admin server may remain in the database. Start the admin server and complete the operation being executed on the admin server, or restore the configuration definition information already collected, then perform the operation again.

- When *obj* is a LAN switch blade name

The network resource using the LAN switch blade which is displayed in *obj* exists. Delete the network resource and perform the operation again.

- When *obj* is something other than the above

Wait for a short while and then repeat the operation.

67214

FJSVrcx:ERROR:67214:*obj*:system image does not exist

[Description]

Either there is no system image of the managed server, or the specified version of the system image was not found. Or there is no snapshot of the managed server, or the specified version of the snapshot was not found.

[Corrective Action]

Check whether there is a system image or snapshot of the relevant managed server.
If an incorrect version was specified, specify the correct version, and perform the operation again.
There is also a chance that image files have not been synchronized. Restart the manager service referring to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

67220

FJSVrcx:ERROR:67220:spare server not found.

[Description]

There are no spare servers that fulfill the conditions. The specified spare server does not fulfill the following conditions.

Refer to the explanation in "Message number 67220" in the "Messages VE".

- When a physical L-Server has been switched over

There are no physical server resources available as spare servers in the specified spare server resource pool.

[Corrective Action]

- Check that the physical server in the server pool which was specified as a spare server meets or exceeds all of the following conditions:

  - Number of CPUs

  - CPU Clock Speed

  - Memory Size

  - Number of NICs

  - Number of FCs in the FC connection pattern

- Refer to the explanation in "Message number 67220" in the "Messages VE".

- When a physical L-Server has been switched over

Register an additional physical server resource in the spare server resource pool specified for the target L-Server.

- There may be differences between the values in the definition files and the actual configuration information of that server.

  Check that the correct values have been entered.
  For details on the definition file, refer to "Appendix I Definition Files" of the "Setup Guide CE".

- A physical server cannot be found that has the number of FCs specified in the FC connection pattern.

  Refer to "4.3.1.2 Storage Configuration" in the "Setup Guide CE" for information on how to obtain the FC information for the physical server.

67225

FJSVrcx:ERROR:67225:IP address is invalid

[Description]

Refer to the explanation in "Message number 67225" in the "Messages VE".
In Resource Orchestrator, this message may be output when the rcxvmdiskagt command is executed.

[Corrective Action]

Refer to the explanation in "Message number 67225" in the "Messages VE".

If this message is output when executing the rcxvmdiskagt command, perform the following corrective action:

- Ensure that the specified IP address is the IP address of admin LAN for the VM host, then perform the operation again.

67252

FJSVrcx:ERROR:67252:password decryption error

[Description]

Failed to decrypt the password.

[Corrective Action]

- When the message above is output during reading of a configuration definition file

  Confirm if the password is configured using an encrypted character string in the resource definition line for specifying "encrypted" (encrypted password).

  For details on configuration definition files, refer to "Appendix A Format of CSV System Configuration Files" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- When the message above is output during reading of a network configuration information file and "true" is specified for the PasswordEncryption element

  Check if an encrypted character string is configured for the Password element or the PrivilegedPassword element.

  For details on the network configuration information files, refer to "2.6.1 Creation".

  If the problem is still not resolved after performing the above actions, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67255

FJSVrcx:ERROR:67255:*option*:not supported

[Description]

The specified option *option* is not supported.

Refer to the explanation in "Message number 67255" in the "Messages VE".

There are also the following cases for Resource Orchestrator:

- When a physical L-Server was created, "NICs.NIC.NetworkLinkfor NICIndex(*num*)" is displayed in *option*

    Network resources cannot be specified for the displayed NIC.
    The number displayed for NICIndex(*num*) is a value one lower than the number specified when creating the L-Server.

- When "-system" or "-force" is displayed in *option*

    The storage unit to which the disk resource, for which an operation was attempted using the rcxadm lserver attach command or the rcxadm lserver detach command, belongs does not support the -system option or the -force option of the rcxadm lserver command used for the switchover of operating and standby storage. Therefore, the -system option and the -force option cannot be specified.

- When "resource" is displayed in "*option*"

    The error may be the result of one of the following:

    - The specified resource is not the target of the movement

    - The resource has not been registered in the orchestration tree

- When "-deny deldisk" is displayed in *option*

    -deny deldisk (do not delete) cannot be specified when reducing disks that have been separated from the virtual storage from the specified L-Server.

[Corrective Action]

Perform the operation again after correcting the specified option.

Refer to the explanation in "Message number 67255" in the "Messages VE".

There is also the following case for Resource Orchestrator:

- When a physical L-Server was created, "NICs.NIC.NetworkLinkfor NICIndex(*num*)" is displayed in *option*

    Change the network resource settings and perform the operation again.

- When "-system" or "-force" is displayed in *option*

    Check that switchover of operating or standby storage is being performed for the correct storage unit, or check the content of the replication definition file.

- When "resource" is displayed in "*option*"

    Specify a movable resource. Also, register resources that have not been registered in the resource orchestration tree into resource pools.

- When "-deny deldisk" is displayed in *option*

    This disk is deleted when reducing disks that have been separated from the virtual storage from the specified L-Server. To reduce, specify the -allow deldisk option and retry.

    The -deny deldisk option can only be specified when detaching disks from physical L-Servers or virtual L-Servers with the VM type Hyper-V.

67268

FJSVrcx:ERROR:67268:*filename*:no such file or directory

[Description]

The file or directory specified in *obj* does not exist.

[Corrective Action]

Specify an existing file or directory.

67280

FJSVrcx:ERROR:67280:*obj*:*function* not supported. *detail*

[Description]

Refer to the explanation in "Message number 67280" in the "Messages VE".

In *detail*, the following detailed information is displayed:

- "power-off"

  The function displayed in *function* cannot be used with the current power state (power-off).

- "The last *pool_type* pool cannot be deleted."

  The target resource displayed in *obj* cannot be deleted because it is the last resource pool of resource pool type *pool_type*.

- "pool type mismatched"

  The target resource displayed in *obj* cannot be registered in the resource pool because it is a resource pool type that cannot be registered.

- "already exists in *pool name*"

  The target resource displayed in *obj* cannot be registered in the resource pool because it is already registered in *pool name*.

- "boot disk"

  The boot disk cannot be deleted.

- "invalid Redundancy"

  The function displayed in *function* cannot be used as L-Server has been located on a VM host with a disabled HA function.
  function cannot be executed, as VMware FT has been set for the target resource.
  Or *function* cannot be executed as VMware FT cannot be configured for the target resource.

- "Network pool,Address pool,and Image pool"

  The target resource cannot be included when calculating the number of L-Servers creatable for each L-Server template.

- "VirtualStorage[*virtual storage*...]", "Pool[*storage pool*...]", "VirtualStorage[*virtual storage*],Pool[*storage pool*]"

  The name of the virtual storage resource is displayed in *virtual storage*.
  The name of the storage pool name is displayed in *storage pool*.
  For the function displayed for *function*, it is not possible to specify system disks and data disks with differing virtual storage or storage pools.

- "*vmhost*[*vmtype*]"

  In *vmhost*, the VM host name is displayed.
  The VM type for the *vmhost* is displayed in *vmtype*.
  Migration cannot be performed when the VM types of the L-Server and the VM host specified as the migrate destination are different.

- "spare server"

  Since the operation target resource is a spare server, registration in the server pool cannot be performed.

- "some settings exist"

  Registration in the server pool cannot be performed because the target operation resource already has an OS installed, or some settings such as I/O virtualization have been configured.

- "VMType", "Model", "CPU", "Memory", "Policy.Positioning", "NICs", "Disks.Disk.type", "Policy.SpareSelection", "CPU.NumOfCPU", "CPU.CPUPerf", "Memory.MemorySize", or "FCConnectionPattern"

  The above tabs specified in the L-Server template cannot be imported, as they are not supported.
  When importing an L-Server template for a physical L-Server, if the following elements are displayed, there is an inconsistency in combinations with other elements described in the XML file.

  - CPU

- Memory

- CPU.NumOfCPU

- CPU.CPUPerf

- Memory.MemorySize

- Disks.Disk.type

- "Not connected PhysicalServer"

  Operation cannot be performed, as the physical server is not connected due to changes to physical server usage.

- "VIOM"

  HBA address rename settings cannot be configured for the server displayed in *obj* as a virtualization method has been already configured using VIOM.

- "Not Physical Server"

  This command can only be performed for the physical L-Server.
  Execute this command for the physical L-Server.

- "setting VIOM server profile"

  In the chassis mounting the server displayed in *obj*, setting of VIOM is not possible because a server with a virtualization method configured using HBA address rename already exists.

- "Network Parameter Auto-Configuration is enabled"

  Failed to configure the IP address of the public LAN. The specified cloning images cannot be used, as ROR VE network parameter settings are valid.

- "Invalid target network admin LAN"

  Failed to configure the IP address of the public LAN. IP addresses cannot be configured for the admin LAN.

- "Target network overlaps with admin LAN"

  Failed to configure the IP address of the public LAN. The same network as the admin LAN cannot be configured for the public LAN.

- When *obj* is something other than "Target network overlaps with admin LAN"

  You are trying to use a function that is not supported by *obj*, or a function that cannot be used because the status is invalid.

- "Invalid agent version"

  Failed to configure the IP address of the public LAN. As an agent of a version earlier than ServerView Resource Orchestrator V2.2.1 has been installed, it is not possible to configure a public LAN IP address on the specified cloning image.
  When creating a physical L-Server, the IP address cannot be automatically configured if a Red Hat Enterprise Linux image is specified.
  When using the created L-Server, manually configure the public LAN IP address.

- "disk link"

  The DiskLink element cannot be specified in XML for disks with the disk number 0.

- "disk copy"

  The DiskCopy element cannot be specified in XML for disks with the disk number 0.

- "disk link, copy"

  The DiskLink element and the DiskCopy element cannot be specified in XML for a single disk at the same time.

- "disk *type*"

  The value specified for "*type*" cannot be set for disks other than disk number 0.

- "DiskLink" or "DiskCopy"

  An L-Server cannot be created, as the above elements are not supported when creating an L-Server.

- "MacAddress"

  The operation cannot be performed because the L-Server function displayed in *function* does not support the above elements.

- "release MacAddress" or "reserve MacAddress"

  [KVM]
  Addition and deletion of NICs and changing of VM type are not possible because the following operations are not supported.

    - Allocating of a MAC address from the address pool of Resource Orchestrator when modifying virtual L-Server configuration definition information

    - Releasing of the MAC address allocated from the address pool of Resource Orchestrator

- "illegal disk type"

  Configurations cannot be changed, since the specified disk resource is not the disk resource of a VM guest.

- "disk unregistration"

  Try to release disk resource registration using a configuration modification operation.

- "Not Virtual Machine" or "Physical Server"

  Usage is not possible for physical L-Servers.

- "already in use"

  A disk that is already being used exclusively by an L-Server cannot be attached to another L-Server.

- "last" or "logical server not found"

  The *function* cannot be executed, since operations not supported by the target resources were specified.

- "hierarchizing of Tenant folder"

  As the hierarchizing of tenant folders is not supported, tenant folders cannot be created in, or moved into, a tenant folder.

- "invalid Repurpose"

  function cannot be executed, as the resource to be operated does not support the XML tag in *detail*.

- "already in use"

  A virtual machine, a physical server, or a disk that is already being used exclusively by an L-Server cannot be connected to another L-Server.

- "VM Type", "VMType", or "VM type"

  The target resource displayed in *obj* is server virtualization software that does not support *function*.

  [VMware]
  For VMware ESXi, the following operation is not supported.

    - Backup

  [Xen]
  The following operation is not supported.

    - Overcommit

  [Oracle VM]
  The following operation is not supported.

    - Creation of an L-Server without specifying a cloning image

    - Overcommit

- "illegal disk type"

  The disk type is not supported.

- "not creatable storage"

  Disk resources cannot be automatically generated on the target storage device.

- "can not delete the static disk"

  The LUN created in advance cannot be deleted.

- "VIOM is required"

  When allocating disk resources to physical L-Servers from multiple storage chassis, VIOM is necessary.

- "subnet"

  The subnet address of the admin LAN resource that is directly connected from the manager cannot be changed.

- "mask"

  The subnet mask of the admin LAN resource that is directly connected from the manager cannot be changed.

- "DefaultGateway"

  The default gateway of the admin LAN resource that is directly connected from the manager cannot be changed.

- When *obj* is "network_resource_name" and *detail* is "AddressSet"

  The subnet address of a resource of the admin LAN directly connected to a manager cannot be specified.

- When *obj* is "network_resource_name" and *detail* is "ManagementLanSubnet"

  Subnet addresses of the admin LAN cannot be used for public LAN resources.
  The <ManagementLanSubnet> tag cannot be specified when the <Type> tag to specify the network resource type is not set.

- When *obj* is "network_resource_name" and *detail* is "Pool"

  The specified Pool element cannot be specified when changing network resource settings.

- *obj* is "network_resource_name" and *detail* is "Vlanautosetting"

  Automatic VLAN configuration flags for external connection ports cannot be changed.

- When *obj* is "UserGroup", and *detail* is "supervisor group"

  The "supervisor" group cannot be edited and deleted.

- "Pool"

  The resource pool cannot be specified.

- "Type"

  The network resource type cannot be specified.

- "Vlanid"

  The VLAN ID cannot be specified.

- "other tenant folder"

  A resource that is being used by a powered on L-Server cannot be moved to another tenant.
  Stop the L-Server before moving the resource.

  The following resources cannot be moved:

    - Powered on L-Servers

    - Folders that contain powered on L-Servers

    - Resource pools used by powered on L-Servers

    - Folders or resource pools that contain resource pools used by powered on L-Servers

- "The resources used are permission denied."

  Access authority is necessary for some resources displayed in *obj*, which are used by the L-Server.
  Check the status of the resources used by the L-Server.

- "storage is not configured properly"

  The function displayed in *function* cannot be used as the storage has not been configured properly.

- "unknown disk"

  function cannot be executed, as there is an unknown disk on the resource to be operated.

- "converted vm" or "converted server"

  function cannot be executed, as the resource to be operated is an L-Server linked to either a configured physical server or a virtual machine.

- "secondary vm of VMware FT"

  function cannot be executed, as the resource to be operated is a VMware FT secondary virtual machine.

- "exist spare server settings"

  function cannot be executed, as the resource to be operated is a physical server for which a spare server has been configured.

- "agent is not registered"

  function cannot be executed, as there is no registered agent.

- "Server pool,Storage pool,Network pool,Address pool,and Image pool"

  The operation is valid for VM pools.
  The elements in the resources registered in the resource pool cannot be displayed for the resource to be operated.
  Reserve information for configuring HA cannot be displayed, as the resource to be operated is not a VM pool.

- "Server pool,Storage pool,Network pool,Address pool,and Image pool"

  The operation is valid for VM pools and server pools.
  The resource to be operated cannot be displayed linked to L-Servers.

- "VM pool,Server pool,Storage pool,Network pool,and Address pool"

  The operation is valid for image pools.
  The target resource cannot display image information.

- When registering resources to a resource pool, and "force" is displayed

  function cannot be executed, as the force option is not supported for resources other than server pools.

- "Dynamic Memory is enabled"

  Dynamic memory settings are enabled for the target resource.
  Memory capacity cannot be changed for L-Servers for which dynamic memory settings are enabled.

- "Exist"

  When the VM type is something other than KVM, the Exist element cannot be specified.

- "DiskLink and ServerImageLink.disk cannot be specified at the same time"

  When the L-Server template with the "setting for disk deployment when specifying an image" is specified, a disk which was created (and saved) from virtual storage cannot be specified.

- "remaining disk"

  For the specified L-Server, a disk which was created (and saved) from virtual storage cannot be specified. The disk can be only specified for virtual L-Servers with the Hyper-V VM type.

- "L-Server with snapshot"

  Saved virtual disks (created from virtual storage) cannot be added to an L-Server from which a snapshot has been collected.

- "not connectable disk resource from VM host"

  Virtual disks that cannot be connected to from a VM host with an L-Server deployed cannot be specified.

- "disk with snapshot"

  deny_deldisk=true(do not delete) cannot be specified for the disk from which a snapshot has been collected.

- "product version of VM management software"

  In environments where an SCVMM that has not been upgraded to Microsoft(R) System Center 2012 Virtual Machine Manager or later is being used, one of the following operations was performed:

  - Connection of the L-Server to a disk that was allocated from a virtual storage and saved

  - Detachment (without deletion) of a disk that was allocated from a virtual storage and saved, from an L-Server.

- "disk size, exist"

  When the VM type is KVM and the DiskSize element is specified, specify "true" for the Exist element.

- "disk link, exist"

  When a disk resource created in advance is specified, "false" cannot be specified for the Exist element.

- "L-Platform", "Folder", or "Tenant Folder"

  The function displayed in *function* cannot be used with the L-Platform.

- "Folder.[tag name]"

  The specified resources cannot be created on resource folders or an L-Platform.

- "belongs to L-Platform"

  The function displayed in *function* cannot be used with the resources of an L-Platform.

- "can not belongs to L-Platform"

  Target resources cannot be created on or moved to the L-Platform.

- "deny_deldisk=true is specified"

  In a specified L-Server, when detaching a disk allocated from virtual storage, the disk is deleted.

- "HBA address rename cannot use FCConnectionPattern."

  FCConnectionPattern cannot be used in an environment where the HBA address rename service is configured.

- "The resource is registered in pool"

  The server displayed in *obj* is registered in the resource pool, so the boot agent cannot be changed.

- "agent not available"

  The function displayed in *function* cannot be used because the target managed server displayed in *obj* is a server that cannot use agents.

- "agent available"

  The target managed server displayed in *obj* cannot be registered as the VM host that cannot use agents because it has been registered as a server that can use agents.

- "HA is required for AliveMonitoring"

  When alive monitoring is enabled, None cannot be specified for the Redundancy element.

[Corrective Action]

- When *obj* is "Target network overlaps with admin LAN"

  After creating a physical L-Server, configure the IP address manually. Configure the admin and public LANs in different networks.

- When *obj* is something other than "Target network overlaps with admin LAN"

  No action is necessary.

- When *detail* is "VMType", "Model", "CPU", "Memory", "Policy.Positioning", "NICs", "Disks.Disk.type", "Policy.SpareSelection", "CPU.NumOfCPU", "CPU.CPUPerf", "Memory.MemorySize", or "FCConnectionPattern"

  Review the L-Server template to see if the above elements are used, and then perform the operation again.

  If the following elements are displayed, review the XML file and perform the operation again.

- CPU

- Memory

- CPU.NumOfCPU

- CPU.CPUPerf

- Memory.MemorySize

- Disks.Disk.type

- When *obj* is "network_resource_name" and *detail* is "AddressSet"

  Specify the subnet name of the admin LAN, and perform the operation again.

- When *obj* is "network_resource_name" and *detail* is "ManagementLanSubnet"

  Specify a different value for the subnets of the admin and public LANs, and perform the operation again.
  When creating a network resource for the admin LAN using the public LAN subnet, add the <Type>admin</Type> tag, and specify the <ManagementLanSubnet> tag.

- When *obj* is "network_resource_name" and *detail* is "Pool"

  After deleting the Pool element, perform the operation again.

- *obj* is "network_resource_name" and *detail* is "Vlanautosetting"

  Delete vlanautosetting from the ExternalPorts element in the XML definition and then perform the operation again.

- When *obj* is "DefaultGateway" and *detail* is "ManagementLanSubnet name = "" , Type = admin"

  For the admin LAN connected directly to a manager, do not specify the default gateway.

- When *function* is "convert L-Server" and *detail* is "storage is not configured properly"

  Check that the storage has been configured for linking the configured physical server to the L-Server.

- When *detail* is "some settings exist"

  When registering a configured physical server to a resource pool, specify the -force option and perform the operation again.

- When *detail* is "Dynamic Memory is enabled"

    - When changing the memory capacity with dynamic memory enabled

    Perform the operation using VM management software.
    The changed values are reflected on the configuration of the L-Server by periodic queries made to the VM management software.
    For details on the reflection of L-Server configuration by periodic queries, refer to "11.2 Modifying an L-Server" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

    - When changing the memory capacity using Resource Orchestrator

    Change the settings of the target virtual machine to static memory using VM management software.
    After the change has been reflected on the L-Server, perform the operation again.

- When *detail* is "release MacAddress" or "reserve MacAddress"

  After deleting the L-Server, create an L-Server again.

- When *detail* is "illegal disk type"

  Specify a disk resource for VM guest, and perform the operation again.

- When *detail* is "disk unregistration"

  Use the unregister command to release the registration of *obj* disk resources, and perform the operation again.

- When *detail* is "L-Platform"

  Perform the operation, using the command for L-Platforms.

- When *detail* is "Folder"

  Create a resource, using the command for the resource folder.

- When *detail* is "Tenant Folder"

  Perform the operation, using the command for tenants.

- When *detail* is "can not belongs to L-Platform"

  Specify the resource folder or tenant folder for the creation or destination resource folder, and perform the operation again.

- When *detail* is "deny_deldisk=true is specified"

  In the specified L-Server, when detaching a disk allocated from virtual storage, the disk is deleted.
  To reduce, specify deny_deldisk=false. The deny_deldisk argument may also be omitted.
  The -deny_deldisk=true argument can only be specified when detaching disks from physical L-Servers or virtual L-Servers with the VM type Hyper-V.

- When *detail* is "DiskLink and ServerImageLink.disk cannot be specified at the same time"

  Modify the L-Server template or change the setting so that disks which were created (and saved) from virtual storage will not be used, and then perform the operation again.

- When *detail* is "remaining disk"

  Review the VM type and environment, and then perform the operation again.

- When *detail* is "L-Server with snapshot"

  When adding a saved virtual disk (created from virtual storage) to a virtual L-Server, delete all snapshots of that virtual L-Server first, and then perform the operation again.

- When *detail* is "not connectable disk resource from VM host"

  Check the VM management software to see if the VM host with an L-Server deployed can connect to virtual disks, and then perform the operation on the L-Server which can connect to virtual disks.

- When *detail* is "disk with snapshot"

  When saving a virtual disk (created from virtual storage), delete all snapshots of that virtual L-Server first, and then perform the operation again.

- When *detail* is "product version of VM management software"

  Check if the SCVMM being used has been upgraded to Microsoft(R) System Center 2012 Virtual Machine Manager or later. If not, upgrade SCVMM and then perform the operation again.

- When *detail* is " HBA address rename cannot use FCConnectionPattern."

  Re-execute without specifying FCConnectionPattern.

- When *function* is "registering agent" and *detail* is "agent not available"or "agent available"

  Perform one of the following corrective actions:

  - Make the target managed server displayed in *obj* the server for VM hosts which can use agents by modifying the settings in the definition file explained in the following section. Then, register the agent.

    "Configuration when Creating a Virtual L-Server Using VMware ESXi on Other Vendor's Servers" in "E.1.1 Definition Files" in the "Setup Guide CE"

  - Make the target managed server displayed in *obj* the server for VM hosts which cannot use agents by deleting that server. After this, register the server and agent, referring to the following section:

    "Configuration when Creating a Virtual L-Server Using VMware ESXi on Other Vendor's Servers" in "E.1.1 Definition Files" in the "Setup Guide CE"

- When *detail* is "HA is required for AliveMonitoring"

  Specify "HA" for the Redundancy element, and then perform the operation again.

67295

FJSVrcx:ERROR:67295:*obj*:duplicate resource name found

[Description]

Refer to the explanation in "Message number 67295" in the "Messages VE".

There are also the following cases for Resource Orchestrator:

- When registering resources to resource pools

  obj has already been registered in a resource pool.

- When moving resources from the resource pool

  A resource that has the same name as *obj* is registered in the destination resource pool.

- When performing user authentication using directory service

  obj is already registered in one of the following locations. The names are not-case-sensitive.

    - Root folder

    - Same resource folder

    - Same tenant folder

    - Inside the same resource pool

- When importing the configuration information for the operation of Disaster Recovery environments

  There are multiple VM guests or VM hosts specified in *obj*.

  When the name on management software has been changed, reverse the change, and perform the operation again.

- When operating network devices

  There are multiple network devices specified in *obj*.

- When creating a L-Server, resource pool, folder, or tenant

  There are the following possibilities:

    - A resource with the same name already exists.

    - When created directly under the orchestration tree, an L-Server template with the same name may exist.

[Corrective Action]

Refer to the explanation in "Message number 67295" in the "Messages VE".

- When registering resources to resource pools

  With Resource Orchestrator, if *obj* has already been registered in a resource pool, it is displayed because currently registered resources cannot be registered. No action is necessary.

- When moving resources from the resource pool

  Resources with the same name cannot be registered on this product. Change the resource name and then try again.

- When performing user authentication using directory service

  A resource with the same name as an already registered resource is displayed, because it cannot be registered at the same time. Change the resource name, and then perform the operation again.

- When operating network devices

  Execute the command again, referring to "3.5 Changing LAN Switch Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE", after changing the network device name using the GUI.

- When creating a L-Server, resource pool, folder, or tenant

  Change the name and perform creation again.

3.1.13 673XX Series

This section explains the 673XX message series.

67320

FJSVrcx:ERROR:67320:power control error. target=*target* detail=*detail*

[Description]

An error occurred while performing with *target* power control.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is "duplicate resource name"

The power state of the VM guest cannot be controlled because multiple VM names on the VM host conflict. Change the names so that they differ because there is an error in the VM host settings.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format

An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "16"

The VM host could not be found. Check the following:

- Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

[Hyper-V]

- Check that Hyper-V is installed and roles are enabled.

- If *error_number* is "17"

The VM guest could not be found. Check the following:

- Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM guest has been deleted.

- Check whether the VM guest is set to be moved when its power status is changed using the VM management console.

- If *error_number* is "99"

Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100" or "115"

The login account information for the VM host/VM management software entered during registration may not have the required privileges.

Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

For details on the values for login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", or "116"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", or "136"

The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

When CPU or memory to be allocated to a VM guest is insufficient, depending on your environment, either migrate the VM guest to another VM host, or stop the VM guest.

[VMware]
When VMware DPM is enabled and there is a VM host in standby mode in a VMware cluster with a VM guest, start the VM guest from VM management software.

If the target server is not using server management software, there may be differences between the values in the definition files and the actual configuration information of that server. Check that the correct values have been entered.

For details on definition files, refer to "Configuration when Creating a Virtual L-Server Using a Server which cannot Use ServerView Agents" in "E.1.1 Definition Files" in the "Setup Guide CE".

- If *error_number* is "113"

The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.

Change the entered values (user name and password) for the login account information to the correct values.

For details on the values for login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "122"

Perform one of the following corrective actions:

  - The VM maintenance mode is set for the VM host. Perform the operation again after disabling the VM maintenance mode for the VM host.

  - Operation cannot be performed with the current power state. Check the power state of the VM guest.

- If *error_number* is "123"

The error may be the result of one of the following:

  - The necessary power control settings for the VM guest may not have been configured. For details on the necessary power control settings for the VM guest, refer to "E.2 Configuration Requirements" in the "Setup Guide VE".

  - The software required for power control on the VM guest may not have been started. Perform the operation again after referring to the server virtualization software manual and checking whether the required software has been started.

- If *error_number* is "124"

The error may be the result of one of the following:

  - The necessary power control settings for the VM guest may not have been configured.

  Check whether the necessary power control settings for the VM guest have been configured. If the settings have not been configured, perform the operation again after configuring the necessary settings.

  For details on the necessary power control settings for the VM guest, refer to "E.2 Configuration Requirements" in the "Setup Guide VE".

- You may not have the required licenses for operation of the VM host/VM management software.

   Check the license status from the VM management software.

- The login account information for the VM host/VM management software entered during registration may not have the required privileges.

   Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

   For details on the values for login account information, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "125"

The VM host is processing another task. Perform the operation again after checking whether other clients are performing operations simultaneously.

- If *error_number* is "127"

Power control operation of the VM guest failed. Check the following:

- Check the operation status and network settings of the VM host/VM management software.
  If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

[Hyper-V]

- Check whether or not a virtual machine OS has been installed and if the OS has been started.

   If an OS has not been installed on a virtual machine, install and start one.

   If the OS is not running on the virtual machine, perform the operation after starting up the OS.

- If *error_number* is "400"

The remote command processing of the VM host failed.

Check the operation status and network settings of the VM host. If operations performed on the VM host are not executed, there is a problem with the VM host. Perform the operation again after resolving the problem with the VM host.

- If *error_number* is "547"

VM host/VM management software may not meet the requirements necessary for starting the target VM guest. Use SCVMM to check whether the VM host/VM management software meet the requirements.

- If *error_number* is "548"

Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

- If *detail* is "VM guest detected on multiple VM hosts (*server_name1*,*server_name2*,...)"

[KVM]
The relevant VM guest may exist on multiple VM hosts. In this case, data referred to from the VM guest may be damaged when the VM guest is powered on.

Check whether the following message is repeatedly output in the event log.

> FJSVrcx:INFO:21163:*obj*:VM guest is migrated.

- If the message is repeatedly output

Request an infrastructure administrator of Resource Orchestrator to take corrective action.
For corrective actions, refer to "Configuration for L-Server Live Migration" in "E.6.5 Advisory Notes for RHEL-KVM Usage" in the "Setup Guide CE".

- If the message is not repeatedly output

Update the information displayed in the ROR console, and then perform the operation again.
To update the information, right-click the target server in the server resource tree of the ROR console, and select [Update] from the displayed menu. It takes several tens of seconds to be updated.
Update the information for all servers displayed for *server_name*.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67333

FJSVrcx:ERROR:67333:failed to get information from *vmhost*. detail=*detail*

[Description]

Information could not be obtained from a VM host.

In *vmhost*, the VM host name is displayed.
"OS list" is displayed in *detail*.
The list information of operating systems that can be specified could not be retrieved when creating a VM guest.

[Corrective Action]

Refer to the management screen of the server virtualization software, and check whether the VM host displayed in *vmhost* is set to the VM maintenance mode. If the VM host is set to the VM maintenance mode, disable the maintenance mode.

67334

FJSVrcx:ERROR:67334:failed to restore image. detail=*detail*

[Description]

Failed to restore a VM guest.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format or the "(*message*,vmerrno=*error_number*,ip=*IP_address*,host=*VM_host_IP_address*)" format

An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "17"

The VM guest/image could not be found. Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM guest/image has been deleted.

- If *error_number* is "19"

The image could not be found. Wait for around three minutes and then repeat the operation.

- If *error_number* is "99"

    Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100" or "115"

    The login account information for the VM host/VM management software entered during registration may not have the required privileges.
    Check the privilege status from the VM management console. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

    For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", "116", or "148"

    Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", "136", or "508"

    The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

    Depending on the VM management software, a recovery operation may be required before performing the operation again. For details on the recovery method, refer to the manual of the VM management software.

- If *error_number* is "113"

    The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.
    Change the entered values (user name and password) for the login account information to the correct values.

    For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "141", "143", "144", "145", "146", or "147"

    The VM guest could not be restored using an image. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "142"

    Failed to restore an image because another operation was performed on the VM guest to restore. Perform the operation again after waiting a while.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67350

FJSVrcx:ERROR:67350:configuration error. target=*target*

[Description]

There may be an error in the configuration file for communication with the destination *target*.

[Corrective Action]

Take corrective action based on the content of *target*.

- "storage unit"

Refer to "6.1.1 Creating Definition Files Combining Ports of SAN Storage" in the "Setup Guide CE" and correctly describe the port combination definition file of the SAN storage.

- In other cases

Collect the relevant message and troubleshooting data, and contact Fujitsu technical staff.

67359

FJSVrcx:ERROR:67359:*obj*: VM host registration failed detail=*detail*

[Description]

An error occurred in the control of the VM host, so registration of the VM host *obj* failed.

[Corrective Action]

Refer to the explanation in "Message number 67359" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "99"

Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

67360

FJSVrcx:ERROR:67360:stopping spare server failed target=*target* detail=*detail*

[Description]

Stopping of the spare server *target* failed.

[Corrective Action]

Refer to the explanation in "Message number 67360" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "99"

Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

67363

FJSVrcx:ERROR:67363:*obj*:changing VM host login account information failed detail=*detail*

[Description]

An error occurred in communication with the VM host, so changing of the login account information of the VM host *obj* failed.

[Corrective Action]

Refer to the explanation in "Message number 67363" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

67368

FJSVrcx:ERROR:67368:*obj*:entering VM host maintenance mode failed. detail=*detail*

[Description]

Setting of VM maintenance mode for the VM host *obj* failed.

[Corrective Action]

Refer to the explanation in "Message number 67368" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "534"

  Check if the target VM host name is correct.

- If *error_number* is "535"

  Check if the VM management server can communicate correctly with the DNS server. If this does not resolve the problem, contact your network administrator.

- If *error_number* is "548"

  Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

67369

FJSVrcx:ERROR:67369:*obj*:exiting VM host maintenance mode failed. detail=*detail*

[Description]

Releasing of VM maintenance mode for the VM host *obj* failed.

[Corrective Action]

Refer to the explanation in "Message number 67369" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "534"

  Check if the target VM host name is correct.

- If *error_number* is "535"

  Check if the VM management server can communicate correctly with the DNS server. If this does not resolve the problem, contact your network administrator.

- If *error_number* is "548"

  Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

67371

FJSVrcx:ERROR:67371:*obj*:does not have a CD/DVD drive.

[Description]

As the VM guest *obj* does not have a CD/DVD drive, connection of the VM guest tool is not possible.

[Corrective Action]

Add a CD/DVD drive using the VM management software.

67372

FJSVrcx:ERROR:67372:*obj*:failed to connect to VM guest tool. detail=*detail*

[Description]

Connection of the VM guest *obj* to the VM guest tool failed.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format

  An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

As the manager was restarted during processing, the process has failed. Check that the manager has started properly, and then perform the operation again.

For details on how to check the running state of the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "16"

The VM host could not be found. On the management software tree of the ROR console, select the VM management software used to manage the VM host, and perform [Update].

After that, display the server resource tree, and check whether the VM guest has been moved to another VM host.

- If *error_number* is "17"

The VM guest could not be found. Check the following:

  - On the management software tree of the ROR console, select the VM management software used to manage the VM host, and perform [Update].
    After that, display the server resource tree, and check whether the VM guest has been deleted.

  - Check whether the VM guest is set to be moved when its power status is changed using the VM management console.

- If *error_number* is "101", "110", "111", "112", "114", "116", or "473"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "113"

The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.

Change the entered values (user name and password) for the login account information to the correct values.

For details, refer to "3.2.7 Changing VM Host Login Account Information" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "100", "115", or "471"

The login account information for the VM host/VM management software entered during registration may not have the required privileges.

Check the privilege status from the VM management console. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

For details, refer to "3.2.7 Changing VM Host Login Account Information" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "104", "105", "135", or "136"

The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

Depending on the VM management software, a recovery operation may be required before performing the operation again. For details on the recovery method, refer to the manual of the VM management software.

- If *error_number* is "472"

  Due to the occurrence of an error on the VM host or VM management software, connection with the VM guest tool was not possible.

  Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *detail* is "timeout occurred"

  There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67380

FJSVrcx:ERROR:67380:*obj*:VM management software registration failed. detail=*detail*

[Description]

An error occurred in the control of the VM management software, so registration of the VM management software *obj* failed.

[Corrective Action]

Refer to the explanation in "Message number 67380" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/ VM management software resulting from multiple operations, obtaining of information from VM host/ VM management software failed. Check the operating status of the VM host/ VM management software, and perform the operation again.

67381

FJSVrcx:ERROR:67381:*obj*:changing VM management software information failed. detail=*detail*

[Description]

An error occurred in the control of the VM management software, so changing the settings of the VM management software *obj* failed.

[Corrective Action]

Refer to the explanation in "Message number 67381" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

67385

FJSVrcx:ERROR:67385:migrating VM guest failed. *vmguest* migrate from *vmhost1* to *vmhost2*. detail=*detail*

[Description]

Migration of the VM guest *vmguest* failed. Server *vmhost1* is the source and server *vmhost2* is the destination.

[Corrective Action]

Refer to the explanation in "Message number 67385" in the "Messages VE".

When using Resource Orchestrator, if *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)"format, the following may also be relevant:

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "17"

  The VM guest could not be found. Check the following:

  - Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM guest has been deleted.

  - Check whether the VM guest is set to be moved when its power status is changed using the VM management console.

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "104" or "152"

  The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

  Depending on the VM management software, a recovery operation may be required before performing the operation again. For details on the recovery method, refer to the manual of the VM management software.

- If *error_number* is "150" or "164"

  The VM host specified as the destination does not meet the requirements for the migration destination of VM guests. Specify a VM host that meets the requirements for the destination.

  When using an environment with overcommit enabled, also refer to the advisory notes in "11.7 Migration of VM Hosts between Servers" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

  For details on the overcommit function, refer to "E.2.7 Overcommit" or "E.3.6 Overcommit" of the "Setup Guide CE".

- If error_number is "400"

  The remote command processing of the VM host failed. Check the operation status and network settings of the VM host.

  If operations performed on the VM host are not executed, there is a problem with the VM host. Perform the operation again after resolving the problem with the VM host.

[KVM]

When the following description is displayed in detail, check the host configuration for the live migration.

- "Temporary failure in name resolution"

- "Cannot recv data: Permission denied, please try again. Permission denied, please try again. Permission denied (publickey,gssapi-keyex,gssapi-with-mic,password). : Connection reset by peer"

For details, refer to "Configuration for L-Server Live Migration" in "E.6.5 Advisory Notes for RHEL-KVM Usage" in the "Setup Guide CE".

When performing VM live migration using the command provided with Red Hat Enterprise Linux 6 on a VM host, make sure to specify both --undefinesource and --persistent, which are the virsh migrate command options.

When performing live migration using Virtual Machine Manager, confirm that the guest OS on the source host has been moved to the destination host, stop the guest OS on the destination, and then start the guest OS on the destination.

When not performing the procedure above, the virtual L-Server may not be managed properly in Resource Orchestrator.

- If *error_number* is "534"

Check if the target VM host name is correct.

- If *error_number* is "535"

Check whether the server specified as the destination has a configuration that allows migration referring to "Appendix E Server Virtualization Products" of the "Setup Guide VE". Check if the VM management server can communicate correctly with the DNS server. If this does not resolve the problem, contact your network administrator.

- If *error_number* is "548"

Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

67389

FJSVrcx:ERROR:67389:*image* is already in use on *obj*

[Description]

The specified cloning image name *image* is already in use by another VM management software *obj*.

[Corrective Action]

Perform the operation again after specifying another cloning image name.

67390

FJSVrcx:ERROR:67390:creating VM guest failed. detail=*detail*

[Description]

Failed to create a VM guest.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format or the "(*message*,vmerrno=*error_number*,ip=*IP_address*,host=*VM_host_IP_address*)" format

An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "16"

The VM host could not be found. Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

- If *error_number* is "17"

The image could not be found. Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the image has been deleted.

- If *error_number* is "99"

Due to temporary inconsistencies in the information held by VM host/ VM management software resulting from multiple operations, obtaining of information from VM host/ VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100", "115", "178", "337", or "381"

The login account information for the VM host/VM management software entered during registration may not have the required privileges.
Check the privilege status from the VM management console. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", "116", "181", "249", "341", or "382 "

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", "136", "178", "509", "510", "511", "512", "513", "519", "520", "521", "531", "532 ", or "550"

The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

Depending on the VM management software, a recovery operation may be required before performing the operation again. For details on the recovery method, refer to the manual of the VM management software.

If an image has been specified when executing the operation, the OS customization process may have failed. Check that the device path to the system disk of the specified image is the following:

- [Hyper-V]

  IDE:0:0

- [VMware]

  SCSI:0:0

When using a device other than the above, change the disk configuration of the image, and then perform the operation again. For details on how to change disk configurations, refer to the manual of the VM management software.

[Hyper-V]
If *error_number* is "104", and the guest OS type is Windows, the product key may be not correct. Check that the correct product key has been specified. The product key cannot be omitted.

[VMware]
If the error number is "104" and the target server is not using server management software, there may be differences between the values in the definition files and the actual configuration information of that server. Check that the correct values have been entered.

For details on definition files, refer to "Configuration when Creating a Virtual L-Server Using a Server which cannot Use ServerView Agents" in "E.1.1 Definition Files" in the "Setup Guide CE".

- If *error_number* is "113"

The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.
Change the entered values (user name and password) for the login account information to the correct values.

For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "170", "171", "172", "173", "174", "175", "176", "177", "179", or "180 "

The VM guest could not be created using an image. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "240", "335", or "603"

Failed to create a VM guest because the VM guest name is already in use. Change the VM guest name or the destination VM host.

- If *error_number* is "241", "242", "244", or "332"

Could not create a VM guest in the definition file storage location of the VM guest. Check the status of the definition file storage location of the VM guest.

- If *error_number* is "245"

The VM guest name is invalid. Change the VM guest name.

- If *error_number* is "246"

The specified VM host cannot create a VM guest. Change the destination VM host.

- If *error_number* is "330", "331", "333", "334", "336", "340", or "342"

Failed to modify the VM guest. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "338"

Failed to modify the configuration because another operation was performed on the created VM guest. Perform the operation again after waiting a while.

- If *error_number* is "339"

Too many devices were specified for creation in the VM guest. Perform the operation again after decreasing the numbers of disks or NIC.

- If *error_number* is "380"

Failed to set the OS unique information for the VM guest again. Set the OS unique information for the created VM guest again.

- If *error_number* is "400"

The remote command processing of the VM host failed. Check the operation status and network settings of the VM host.
If operations performed on the VM host are not executed, there is a problem with the VM host. Perform the operation again after resolving the problem with the VM host.

[KVM]
If "Error: LVM is not supported for VM guest." is displayed for *detail*, LVM cannot be used for cloning images. Use a non-LVM cloning image.

- If *error_number* is "501" or "608"

Make sure that the specified virtual network name exists on the VM host.

- If *error_number* is "503"

  There is no target operation image on VM management software.

  Perform the operation again after checking that there are no differences between image information on Resource Orchestrator and the VM management software.

- If *error_number* is "514"

  After confirming if there is no trouble with the administrator account information, perform the operation again.

- If *error_number* is "515" or "607"

  Perform the operation again, after specifying a supported OS for VM host.

- If *error_number* is "534"

  Check if the target VM host name is correct.

- If *error_number* is "535"

  Check if the VM management server can communicate correctly with the DNS server. If this does not resolve the problem, contact your network administrator.

- If *error_number* is "536", "538", or "546"

  There is a problem with the library of System Center Virtual Machine Manager. Check that the status of the library server or shared library is normal, then perform the operation again after waiting for a short time.

- If *error_number* is "537" or "539"

  Operation of the System Center Virtual Machine Manager library failed. Check the result of the job using System Center Virtual Machine Manager.

- If *error_number* is "548"

  Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

- If *error_number* is "552", "553", or "554"

  Remote WMI execution of Failover Cluster failed. Check that the remote WMI execution is not blocked by Windows Firewall or anything else. If it is not blocked, check that the status of the Failover Cluster is normal using Failover Cluster Manager, and then perform operation again after a while.

- If *error_number* is "555"

  Remote WMI execution of Failover Cluster failed. Register the login account of VM management software (which is entered when the VM management software is registered in Resource Orchestrator) in the Administrators groups of all VM hosts, and then perform the operation again.

- If *error_number* is "604"

  Specify a value smaller than the physical memory size of the VM host.

  If the target server is not using server management software, there may be differences between the values in the definition files and the actual configuration information of that server. Check that the correct values have been entered.

  For details on definition files, refer to "Configuration when Creating a Virtual L-Server Using a Server which cannot Use ServerView Agents" in "E.1.1 Definition Files" in the "Setup Guide CE".

- If *error_number* is "605"

  Specify a value smaller than the number of CPU cores of the VM host.

  If the target server is not using server management software, there may be differences between the values in the definition files and the actual configuration information of that server. Check that the correct values have been entered.

  For details on definition files, refer to "Configuration when Creating a Virtual L-Server Using a Server which cannot Use ServerView Agents" in "E.1.1 Definition Files" in the "Setup Guide CE".

- If *error_number* is "606"

  The number exceeds the number of available CPUs. Specify a value in the available range.

- If *error_number* is "609"

  The VLAN ID value is not in the available range of values. Specify the available range.

- If *error_number* is "614"

  The level exceeds that of available CPU performance. Specify the available range.

  If the target server is not using server management software, there may be differences between the values in the definition files and the actual configuration information of that server. Check that the correct values have been entered.

  For details on definition files, refer to "Configuration when Creating a Virtual L-Server Using a Server which cannot Use ServerView Agents" in "E.1.1 Definition Files" in the "Setup Guide CE".

- If *error_number* is "616"

  The specification format for the time zone is incorrect. Specify the correct format.

- If *error_number* is "617"

  The product ID specification format is incorrect. Specify the correct format.

- If *error_number* is "618"

  Administrator information is invalid. Specify valid information.

- If *error_number* is "621"

  The format of the specified IP address is incorrect. Specify an IP address in the correct format.

- If *error_number* is "624"

  The template of System Center Virtual Machine Manager corresponding to the specified image is either invalid or damaged. Check the image using System Center Virtual Machine Manager.

- If *error_number* is "654"

  The MAC address pool was not found under the management of System Center Virtual Machine Manager at the IP address.

  Check if a MAC address pool available for use exists in the corresponding System Center Virtual Machine Manager.

- If *error_number* is "656"

  The MAC address available for use could not be obtained from the MAC address pool specified in the definition file "scvmm_mac_pool.rcxprop" or "scvmm_mac_pool_tenant_name.rcxprop".

  Check the corresponding System Center Virtual Machine Manager to see if there are any MAC addresses available for use left in the specified MAC address pool.

- If *error_number* is "657"

  The MAC address pool specified in the definition file "scvmm_mac_pool.rcxprop" or "scvmm_mac_pool_tenant_name.rcxprop" is not under management of System Center Virtual Machine Manager at the IP address.

  Check if the specified MAC address pool exists in the corresponding System Center Virtual Machine Manager.

- If *error_number* is "658"

  The MAC address pool specified in the definition file "scvmm_mac_pool.rcxprop" or "scvmm_mac_pool_tenant_name.rcxprop" cannot be used by the host group to which the VM host at *VM_host_IP_address* belongs.

  Check the corresponding System Center Virtual Machine Manager to see if the specified MAC address pool can be used by the host group to which the target VM host belongs.

- If *error_number* is "659"

  Wait for a short while and then perform the operation again. If the retry failed, the tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

The infrastructure administrator should check if all file paths in the message can be accessed on the VM host where the target VM guest exists. If not, take corrective action to make them accessible, and then request the user who reported the problem to perform the operation again.

- If *error_number* is "663"

Waiting for a while, then perform the operation or check again.

- If *error_number* is "665"

The virtual network connected to the virtual network adapter does not have a high availability attribute. Configure the virtual network definition file of Resource Orchestrator so that a high availability virtual network is defined as the destination. If there is no problem with the configuration defined in the virtual network definition file, the virtual network configuration information on the VM management software may have not been updated. Wait for a while or update the host cluster on the VM management software, and then perform the operation again.

- If *error_number* is "804"

The data center cannot be found on the VM management software. Check if the data center name has been modified on the VM management software. If it has been modified, wait for a while and perform the operation again.

- If *error_number* is "806"

VM host cluster is not configured on the VM management software. Configure the cluster, referring to the server virtualization software manual. If the cluster has been configured, check if the cluster name has been modified on the VM management software. If it has been modified, wait for a while and perform the operation again.

- If *error_number* is "807"

High availability setting is disabled for the VM host cluster on the VM management software. Enable high availability setting, referring to the server virtualization software manual, and then perform the operation again.

- If *detail* is displayed in the "invalid parameter:*parameter*:*value*" format

The *parameter* value is invalid. Perform the operation again after modifying the entered *value*.

- If *detail* is "timeout occurred"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *detail* is "invalid parameter:memory size:*Memory_size_in_the_unit_of_MB*"

The memory size allocated to the VM guest is incorrect. The value specified for MAXDefinableMemorySize must be the same as or larger than the value of MemorySize.

For details on the MAXDefinableMemorySize setting method, refer to "VM Specific Information Definition File" in "E.1.1 Definition Files" in the "Setup Guide CE".

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67391

FJSVrcx:ERROR:67391:deleting VM guest failed. detail=*detail*

[Description]

Failed to delete the VM guest.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format or the "(*message*,vmerrno=*error_number*,ip=*IP_address*,host=*VM_host_IP_address*)" format

An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "16"

The VM host could not be found. Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

- If *error_number* is "17"

The VM guest could not be found. Check the following:

- Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM guest has been deleted.

- Check whether the VM guest is set to be moved when its power status is changed using the VM management console.

- If *error_number* is "99"

Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100", "115", "260", or "337"

The login account information for the VM host/VM management software entered during registration may not have the required privileges.
Check the privilege status from the VM management console. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", "116", "263", or "341"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", "136", or "527"

The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

Depending on the VM management software, a recovery operation may be required before performing the operation again. For details on the recovery method, refer to the manual of the VM management software.

- If *error_number* is "113"

The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.
Change the entered values (user name and password) for the login account information to the correct values.

For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "261"

Failed to delete the VM guest. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "262"

Failed to delete the VM guest. VM guests cannot be deleted while their power is ON. Check the power state of the VM guest.

- If *error_number* is "330", "331", "332", "333", "334", "335", "336", "339", "340", or "342 "

Failed to modify the VM guest. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "338"

Failed to modify the configuration because another operation was performed on the VM guest. Perform the operation again after waiting a while.

- If *error_number* is "400"

The remote command processing of the VM host failed. Check the operation status and network settings of the VM host. If operations performed on the VM host are not executed, there is a problem with the VM host. Perform the operation again after resolving the problem with the VM host.

- If error_number is "548"

Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

- If *detail* is "timeout occurred"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67392

FJSVrcx:ERROR:67392:modifying VM guest failed. detail=*detail*

[Description]

Failed to modify the configuration of the VM guest.

[Corrective Action]

Take corrective action based on the content of *detail*.

If this message is displayed when modifying L-Server configuration, some information may have been modified. If you want to check modified information, wait for a while and then check the L-Server information.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format or the "(*message*,vmerrno=*error_number*,ip=*IP_address*,host=*VM_host_IP_address*)" format

An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "16"

The VM host could not be found. Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM host has been deleted.

- If *error_number* is "17"

  The VM guest could not be found. Check the following:

   - Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM guest has been deleted.

   - Check whether the VM guest is set to be moved when its power status is changed using the VM management console.

- If *error_number* is "20"

  The port group of the specified virtual switch was not found on VM management software.

  Check that the port group exists on VM management software.

   - If no port groups exist:

     Create a port group for the virtual switch on VM management software.

   - If port groups exist:

     When using the virtual network definition file, check that all definitions are described correctly.

     After checking the definition file, perform the operation again.

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/ VM management software resulting from multiple operations, obtaining of information from VM host/ VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100", "115", or "337"

  The login account information for the VM host/VM management software entered during registration may not have the required privileges.
  Check the privilege status from the VM management console. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM host/VM management software.

  For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", "116", or "341"

  Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", "136", "512", "519", "520", "521", "523", "524", "525", "526", "528", or "550"

  The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

  Depending on the VM management software, a recovery operation may be required before performing the operation again. For details on the recovery method, refer to the manual of the VM management software.

- If *error_number* is "113"

  The login account information for the VM host/VM management software that was entered during registration cannot be used to communicate with the VM host/VM management software. The login account information for the VM host/VM management software may have been changed after registration.
  Change the entered values (user name and password) for the login account information to the correct values.

  For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "330", "331", "332", "333", "334", "335", "336", "339", "340", or "342 "

  Failed to modify the VM guest. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "338"

  Failed to modify the configuration because another operation was performed on the VM guest. Perform the operation again after waiting a while.

- If *error_number* is "400"

  The remote command processing of the VM host failed. Check the operation status and network settings of the VM host.
  If operations performed on the VM host are not executed, there is a problem with the VM host. Perform the operation again after resolving the problem with the VM host.

- If *error_number* is "501" or "608"

  Make sure that the specified virtual network name exists on the VM host.

- If *error_number* is "515" or "607"

  Select an OS supported by the VM host and then perform the operation again.

- If *error_number* is "522"

  There is no target VM guest virtual disk on VM management software.

  Perform the operation again after checking that there are no differences between virtual disk information on Resource Orchestrator and the VM management software.

- If *error_number* is "533"

  There is no virtual network adapter of the target VM guest on VM management software.

  Perform the operation again after checking that there are no differences between virtual network adapter information on Resource Orchestrator and the VM management software.

- If *error_number* is "548"

  Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

- If *error_number* is "552", "553", or "554"

  Remote WMI execution of Failover Cluster failed. Check that the remote WMI execution is not blocked by Windows Firewall or anything else. If it is not blocked, check that the status of the Failover Cluster is normal using Failover Cluster Manager, and then perform operation again after a while.

- If *error_number* is "555"

  Remote WMI execution of Failover Cluster failed. Register the login account of VM management software (which is entered when the VM management software is registered in Resource Orchestrator) in the Administrators groups of all VM hosts, and then perform the operation again.

- If *error_number* is "604"

  Specify a value smaller than the physical memory size of the VM host.

  If the target server is not using server management software, there may be differences between the values in the definition files and the actual configuration information of that server. Check that the correct values have been entered.

  For details on definition files, refer to "Configuration when Creating a Virtual L-Server Using a Server which cannot Use ServerView Agents" in "E.1.1 Definition Files" in the "Setup Guide CE".

- If *error_number* is "605"

  Specify a value smaller than the number of CPU cores of the VM host.

- If *error_number* is "606"

  The number exceeds the number of available CPUs. Specify the available range.

- If *error_number* is "609"

  The VLAN ID value is not in the available range of values. Specify the available range.

- If *error_number* is "611"

  This operation cannot be performed on VM guests that have not been stopped. Stop the specified VM guest and then perform the operation again.

- If *error_number* is "612", "613", "663", or "664"

  Wait for a while, then perform the operation or check again.

- If *error_number* is "614"

  The level exceeds that of available CPU performance. Specify the available range.

- If *error_number* is "659"

  Wait for a short while and then perform the operation again. If the retry failed, the tenant administrator or the tenant user should notify the infrastructure administrator of the information in this message.

  The infrastructure administrator should check if all file paths in the message can be accessed on the VM host where the target VM guest exists. If not, take corrective action to make them accessible, and then request the user who reported the problem to perform the operation again.

  If the file path in the message does not exist or has been deleted, unregister the specified disk resource for automatically created LUNs, using the rcxadm disk unregister command. For details on the rcxadm disk command, refer to "1.3.4 rcxadm disk".

- If *error_number* is "660"

  Disks with snapshots cannot be detached. Perform the operation on disks without snapshots.

- If *error_number* is "665"

  The virtual network connected to the virtual network adapter does not have a high availability attribute. Configure the virtual network definition file of Resource Orchestrator so that a high availability virtual network is defined as the destination. If there is no problem with the configuration defined in the virtual network definition file, the virtual network configuration information on the VM management software may have not been updated. Wait for a while or update the host cluster on the VM management software, and then perform the operation again.

- If *error_number* is "804"

  The data center cannot be found on the VM management software. Check if the data center name has been modified on the VM management software. If it has been modified, wait for a while and perform the operation again.

- If *error_number* is "806"

  VM host cluster is not configured on the VM management software. Configure the cluster, referring to the server virtualization software manual. If the cluster has been configured, check if the cluster name has been modified on the VM management software. If it has been modified, wait for a while and perform the operation again.

- If *error_number* is "807"

  High availability setting is disabled for the VM host cluster on the VM management software. Enable high availability setting, referring to the server virtualization software manual, and then perform the operation again.

- If *detail* is displayed in the "invalid parameter:*parameter*:*value*" format

  The *parameter* value is invalid. Perform the operation again after modifying the entered *value*.

- If *detail* is "timeout occurred"

  There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *detail* is "operation failed:customizing vm guest (cpu settings)"

  Failed to modify the CPU count/CPU performance of the VM guest.

  - Check the operation status, network settings, and login account information of the admin server/VM host/VM management software from the ROR console or VM management console.

    The manager may not be able to communicate with the VM host/VM management software. Check the status of the manager, and after restoring communication, perform the operation again.

- Check that the VM guest exists, and its operating status from the ROR console or the VM management console.

  When another operation is being performed on the VM guest, wait for a while and then perform the operation again.
  This operation is not possible on VM guests that are powered on. Either stop the specified VM guest or make changes to the VM guest options so that changes can be made while the power is on, and then retry.

If no problems are found when checking the above, check the cause of the error on the VM host/VM management software from the VM management console. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

- If *detail* is "operation failed:customizing vm guest (memory settings)"

  Failed to modify the memory size of the VM guest.

  Refer to "If *detail* is "operation failed:customizing vm guest (cpu settings)"".

- If *detail* is "operation failed:customizing vm guest (properties settings)":

  Failed to modify the name or OS type of the VM guest.

  Refer to "If *detail* is "operation failed:customizing vm guest (cpu settings)"".

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67395

FJSVrcx:ERROR:67395:image operation failed. *detail*

[Description]

Image processing failed.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is "(Disk copy failed. No space left on disk[*LUN information*], ip = *VM_host_IP_address*)"

  The disk copy operation failed as the size of the disk specified as the copy destination is smaller, relative to the size of the cloning image. Specify a disk with larger disk space than the size of the cloning image.

- If *detail* is "(Disk copy failed. No such disk[*LUN information*], ip = *VM_host_IP_address*)"

  The disk copy operation failed as the disk specified by VM host cannot be found.

  Check the connection between the VM host and storage so that the disk can be accessed by the VM host.

- If *detail* is "(Disk copy failed. from [*LUN information*] to [*LUN information*], ip = *VM_host_ip_address*)"

  The copy operation to the specified disk failed. During the copy operation, access to storage from the VM host may have been rejected. Check the connection between the VM host and storage.

67397

FJSVrcx:ERROR:67397:failed to create image. detail=*detail*

[Description]

Failed to collect the image of the VM guest.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format or the "(*message*,vmerrno=*error_number*,ip=*IP_address*,host=*VM_host_IP_address*)" format

  An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

  There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "17"

  The VM guest could not be found. Check the following:

    - Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM guest has been deleted.

    - Check whether the VM guest is set to be moved when its power status is changed using the VM management console.

- If *error_number* is "19"

  There is no target operation image on server virtualization software.
  Perform the operation again after checking that there are no differences between image information on the manager and snapshot information on the server virtualization software.

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100", "115", or "178"

  The login account information for the VM management software entered during registration may not have the required privileges.
  Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM management software.

  For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", "116", "148", "181", or "263"

  Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", "136", "147", "178", "506", "516", "518", "531", or "532 "

  The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

  [Hyper-V]

  When using MAK license authentication for activation of Windows Server 2008 guest OS's, there is a chance that an error has occurred due to the limit on execution of Sysprep. For these guest OS's, Sysprep can be executed a maximum of three times. As Sysprep is executed when collecting cloning images, it is not possible to collect cloning images or create L-Servers with images specified more than three times. When Sysprep has already been executed three times, it is not possible to collect cloning images from that L-Server.
  When a template created using VM management software has been registered as a cloning image, Sysprep will also be executed when the template is created using the VM management software.

- If *error_number* is "113"

  The specified login account information for the VM management software cannot be used to communicate with the VM management software.
  Change the entered values (user name and password) for the login account information to the correct values.

- If *error_number* is "141", "143", "144", "145", "146", "170", "171", "172", "173", "174", "175", "176", "177", "180", or "261"

  An error occurred while collecting the image. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "142" or "179"

  Failed to collect the image because another operation was performed on the target VM guest. Perform the operation again after waiting a while.

- If *error_number* is "400"

  The remote command processing of the VM host failed. Check the operation status and network settings of the VM host.
  If operations performed on the VM host are not executed, there is a problem with the VM host. Perform the operation again after resolving the problem with the VM host.

- If *error_number* is "500" or "602"

  Check if the specified library server has been started.
  Check if the specified library server can perform name resolution.
  Check the firewall configuration.

- If *error_number* is "529"

  Specify the shared volume of the cluster.

- If *error_number* is "530"

  Check the available space on the disk.

- If *error_number* is "534"

  Check if the target VM host name is correct.

- If *error_number* is "535"

  Check if the VM management server can communicate correctly with the DNS server. If this does not resolve the problem, contact your network administrator.

- If *error_number* is "548"

  Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

- If *error_number* is "600"

  Collection of cloning images cannot be performed from VM guests which are holding snapshots. Delete the snapshots of the specified VM guest and perform the operation again. Cloning images also cannot be collected when there are snapshots or checkpoints created by VM management software.

  [Hyper-V]
  When there are snapshots that have been collected using Resource Orchestrator or checkpoints created using VM management software, it is not possible to collect cloning images as VMs are operated on difference disks. For combining of difference disks, it is necessary to delete not only all snapshots collected using Resource Orchestrator, but also all checkpoints created using VM management software. Combining of the disk is automatically performed by SCVMM, but depending on the status of the VM guest the operation may take a long time, because it is only performed while the target VM guest is stopped.

- If *error_number* is "601"

  This operation cannot be performed on VM guests that have not been stopped. Stop the specified VM guest and then perform the operation again.

- If *error_number* is "619"

  Operations cannot be performed for VM guests using RAW disks.

- If *error_number* is "620"

  Operations cannot be performed for VM guests with no system volumes.

- If *error_number* is "642"

  A cloning image with the specified name already exists. Specify a new name.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67398

FJSVrcx:ERROR:67398:failed to delete image. detail=*detail*

[Description]

Failed to delete the VM guest image.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*,ip=*IP_address*)" format or the "(*message*,vmerrno=*error_number*,ip=*IP_address*,host=*VM_host_IP_address*)" format

An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

  Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

  For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

  There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "17"

  The image could not be found. Click <Update> on the image list screen of the ROR console to refresh the screen, and check whether the image has been deleted.

- If *error_number* is "19", "503", or "504"

  There is no target operation image on VM management software.

  Perform the operation again after checking that there are no differences between image information on Resource Orchestrator and the VM management software.

- If *error_number* is "99"

  Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100", "115", "147", or "260"

  The login account information for the VM management software entered during registration may not have the required privileges.
  Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM management software.

For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", "116", "148", or "263"

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", "136", "505", or "507"

The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

- If *error_number* is "113"

The specified login account information for the VM management software cannot be used to communicate with the VM management software.
Change the entered values (user name and password) for the login account information to the correct values.

- If *error_number* is "261"

An error occurred while deleting the image. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "544"

Obtaining the information of the VHD file, which is a related file of the target image to be deleted, failed. Use System Center Virtual Machine Manager to check that the status of the shared library is normal. After waiting for a short time, perform the operation again.

- If *error_number* is "545"

Deletion of the related files of the target image to be deleted failed. Check the result of the job using System Center Virtual Machine Manager.

- If *error_number* is "548"

Calling of the PowerShell module of VM management software has failed. There may be a problem with installation of SCVMM. Check that SCVMM has been configured properly.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

67399

FJSVrcx:ERROR:67399:failed to deploy image. detail=*detail*

[Description]

Failed to deploy the cloning image of the VM guest.

[Corrective Action]

Take corrective action based on the content of *detail*.

- If *detail* is displayed in the "(*message*,vmerrno=*error_number*;ip=*IP_address*)" format

An error has occurred in the control of the VM host/VM management software for the displayed *IP_address*. Perform the corrective action according to the *error_number*.

- If *error_number* is "6", "7", "8", or "9"

Make sure that the manager is running. If the manager has been stopped, start it and perform the operation again.

For details on how to check the running state of the manager and how to start the manager, refer to "7.2 Starting and Stopping the Manager" in the "Setup Guide CE".

- If *error_number* is "15"

There is no response from the VM host/VM management software to the admin server request. Check the operation status and network settings of the VM host/VM management software.

- If *error_number* is "17"

The VM guest/image could not be found. Check the following:

  - Select [Operation]-[Update] from the ROR console menu to refresh the screen, and check whether the VM guest has been deleted. Click <Update> on the cloning image list screen of the ROR console to refresh the screen, and check whether the image has been deleted.

  - Check whether the VM guest is set to be moved when its power status is changed using the VM management console.

- If *error_number* is "99"

Due to temporary inconsistencies in the information held by VM host/VM management software resulting from multiple operations, operations of VM host/VM management software failed. Check the operating status of the VM host/VM management software, and perform the operation again.

- If *error_number* is "100", "115", "178", "260", "337", or "381"

The login account information for the VM management software entered during registration may not have the required privileges.
Check the privilege status from the VM management software. If the account does not have the required privileges, change the entered values (user name and password) for the login account information to the values for a user with administrative privileges for the VM management software.

For details, refer to "3.2.7 Changing VM Host Login Account Information" or "3.8 Changing VM Management Software Settings" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If *error_number* is "101", "110", "111", "112", "114", "116", "181", "263", "341", or "382 "

Communication between the admin server and the VM host/VM management software failed. Check the operation status and network settings of the admin server/VM host/VM management software.

- If *error_number* is "104", "105", "135", or "136"

The task processing of the VM host/VM management software failed. Check the operation status and network settings of the VM host/VM management software. If operations performed from the VM management software are not executed, there is a problem with the VM host/VM management software. Perform the operation again after resolving the problem with the VM host/VM management software.

- If *error_number* is "113"

The specified login account information for the VM management software cannot be used to communicate with the VM management software.
Change the entered values (user name and password) for the login account information to the correct values.

- If *error_number* is "170", "171", "172", "173", "174", "175", "176", "177", or "180"

An error occurred while deploying the image. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "179"

Failed to deploy the image. The requested process could not be executed because the VM guest/image is being used by another process.
Check whether the VM guest/image is being used by another process from the VM management software.

- If *error_number* is "261"

An error occurred while deleting the image. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "262"

Failed to delete the VM guest. VM guests cannot be deleted while their power is ON. Check the power state of the VM guest.

- If *error_number* is "330", "332", "333", "334", "336", "340", "342", or "380"

  Failed to modify the VM guest. Check the cause of the error in the VM host/VM management software, and resolve the error.

- If *error_number* is "338"

  Failed to modify the configuration because another operation was performed on the created VM guest or the destination VM guest for deployment. Perform the operation again after waiting a while.

- If *error_number* is "339"

  The total number of devices for the destination VM guest for deployment and the image to deploy is too great. Perform the operation again after decreasing the numbers of disks or NIC in the image to deploy or the destination VM guest for deployment.

If the problem is still not resolved after performing the above actions or if a value not indicated above is displayed in *detail*, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

3.1.14 678XX Series

This section explains the 678XX message series.

67801

FJSVrcx:ERROR:67801:The user (*user*) doesn't belong to any group.

[Description]

User authentication failed because the user registered in a directory service does not belong to a user group.

In *user*, the user ID is displayed.

When this message is displayed during operation, the directory service information may have been modified.

[Corrective Action]

Check the user information and user group information registered in the directory service, then set the displayed user as a member of an appropriate user group.

67802

FJSVrcx:ERROR:67802:The user (*user*) belongs to two or more groups. detail=*detail*

[Description]

User authentication failed because the user registered in a directory service belongs to multiple user groups.

In *user*, the user ID is displayed.

In *detail*, up to two user group names are displayed.

When this message is displayed during operation, the directory service information may have been modified.

[Corrective Action]

Check the user information and use group information registered in the directory service. Operation with a single user belonging to multiple user groups is not possible. Set the displayed user as a member of an appropriate user group.

67803

FJSVrcx:ERROR:67803:Resource information of the directory service is inconsistent with the manager's internal information. detail=*detail*

[Description]

The resource information of a directory service does not match the manager internal information.

In *detail*, the name of the problematic resource is displayed.

[Corrective Action]

Execute the rcxadm authctl sync command.

FJSVrcx:ERROR:67804:Two or more roles in the same scope have been assigned to the user (*user*). detail=*detail*

[Description]

There is an error in the assignment of the role registered in the directory service. Multiple roles assigned to one user are pointing to the same access scope.

In *user*, the user ID or the name of the user group that the user belongs to is displayed.
In *detail*, the access scope is displayed in DN format.

[Corrective Action]

Check the role of the user registered in the directory service.

Operations using multiple roles that are assigned to one user and pointing to the same access scope cannot be allowed. Set a proper role for the user who is being displayed.

3.1.15 679XX Series

This section explains the 679XX message series.

FJSVrcx:ERROR:67992:timeout error

[Description]

A timeout error occurred during command execution.

[Corrective Action]

When this message is displayed during execution of the backup and restore command for the manager properties of admin server, one of the following may apply:

- An operation being executed on the admin server remains in the database

- The manager was stopped or started during command execution

Perform the following corrective actions for each command:

- When the rcxbackup command, the scwbackup command, or the rcxkeydefbackup is executed

  Start the manager and complete the operation being executed on the admin server, or restore the configuration definition information already collected, then perform the operation again.

  Check that the manager is not stopped or not started, then perform the operation again.

- When the rcxrestore command, the scwrestore command, or the rcxkeyrestore is executed

  Check that the manager is not stopped or not started, then perform the operation again.

  If the problem is still not resolved after performing the above actions, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

  If this message is displayed during the following operations, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

    - Physical Servers

        - Image Operations

        - Registration

        - Deletion

- Usage Changes

- Power Operations

- Conversion

- Reversion

- VM Hosts

- Registration

- Release

67999

FJSVrcx:ERROR:67999:internal error, *details*.

[Description]

An error occurred in the following cases:

- Either an internal error has occurred or the XML file specified during the following operations has been loaded:

- L-Server Creation or Configuration Modification

- Importing an L-Server Template

- Importing for DR

- Creating Network Resources

- When the command for backup and restore for manager properties of an admin server has already been executed

- When executing reflection of server NIC definition (rcxadm nicdefctl commit)

- When creating, modifying, or deleting network resources or when creating an L-Platform (including firewalls or modifying its configuration), with auto-configuration for network devices enabled

- In other cases

Refer to the explanation in "Message number 67999" in the "Messages VE".

[Corrective Action]

- When executing the following operations:

- L-Server Creation or Configuration Modification

- Importing an L-Server Template

- Importing for DR

- Creating Network Resources

Review the content of the XML specified during operations, then perform the operation again.

- When the backup and restore for manager properties of an admin server has been executed:

- There is the possibility that the manager was stopped or started during execution of the command.

Check that the manager is not stopped or not started, then perform the operation again.

- There is a possibility that the database could not be accessed.

Execute the command again.

- This message may be output after canceling execution of the command by pressing "Ctrl + C".

Corrective action is not necessary because the execution has been canceled correctly.

- When executing reflection of server NIC definition (rcxadm nicdefctl commit)

    - The contents of Resource Orchestrator are not correct. Collect the relevant message and troubleshooting data, and contact Fujitsu technical staff.

- When creating, modifying, or deleting network resources or when creating an L-Platform (including firewalls or modifying its configuration), with auto-configuration for network devices enabled

    - The process which executes the script may have failed to start, or the process being executed may have been aborted.

    Collect the relevant message and troubleshooting data, and contact Fujitsu technical staff.

- In other cases

    Refer to the explanation in "Message number 67999" in the "Messages VE".

If the problem is still not resolved after performing the above actions, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

3.1.16 68XXX Series

This section explains the 68XXX message series.

68253

FJSVrcx:ERROR:68253:A timeout occurred during *process* the server(*physicalserver*) in the image operation. *detail*

[Description]

process timed out during an image operation.

Refer to the explanation in "Message number 68253" in the "Messages VE".

[Corrective Action]

Refer to the explanation in "Message number 68253" in the "Messages VE".

When *process* is *reboot*, check the corrective action for "Message number 68259".

68259

FJSVrcx:ERROR:68259:Disk *process* was aborted on *physical_server. detail*

[Description]

The *process* for the disk was aborted.

Refer to the explanation in "Message number 68259" in the "Messages VE".

[Corrective Action]

Refer to the explanation in "Message number 68259" in the "Messages VE".

There is also the following case for Resource Orchestrator:

- When a managed server is configured for iSCSI boot:

    Check that there are no problems in the connection between the storage unit and the managed server.

68262

FJSVrcx:ERROR:68262:A process executed after the cancellation of the image operation has failed.

[Description]

An error occurred during operations after image operations were canceled.

[Corrective Action]

Execute the following operations when necessary, and restore the target servers.

- When creation of a physical L-Server was canceled:

  Power off the managed server if it is powered on.

- When other operations were canceled:

  Refer to the explanation in "Message number 68262" in the "Messages VE".

FJSVrcx:ERROR:68296:deployment engine cli error:*detail*

[Description]

An error occurred in the manager command.

Refer to the explanation in "Message number 68296" in the "Messages VE".

There are also the following cases for Resource Orchestrator:

- When creating a physical L-Server:

  Deployment of the cloning image failed. The backup/restore procedure for the admin server may have been performed incorrectly.

[Corrective Action]

Refer to the explanation in "Message number 68296" in the "Messages VE".

There is also the following case for Resource Orchestrator:

- When creating a physical L-Server:

  If a message not related to the above actions is output, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

3.1.17 69XXX Series

This section explains the 69XXX message series.

FJSVrcx:ERROR:69111:communication error. target=*target* detail=*detail*

[Description]

An error occurred while communicating with *target*.

[Corrective Action]

Refer to the explanation in "Message number 69111" in the "Messages VE".

Also, perform the following corrective action depending on the *target* value.

- If the IP address of VM management software is displayed:

  Check whether communication with the VM management software is possible.

  - Use a ping command, etc. to check whether there is a problem with the network environment between the admin server and the VM management software.

  - If a LAN cable has become disconnected, reconnect it.

  - If the VM management product has VM management software, check whether there is a problem with connecting to the VM management product from the VM management software.

- If the IP address of VM management software is displayed:

  Perform the following corrective action depending on the value of *detail*.

  - For "VMware vCenter Server communication error(*Virtual_storage_resource_name*)"

    Check the status of the virtual storage resources registered in the storage pool.

When the status is something other than "unknown", corrective action is not necessary as a communication error has occurred but recovery is complete.

When the status is "unknown", update virtual storage resources.

If the status does not change, perform the following corrective action:

- Check that "VMware vCenter Server" is operating correctly on the IP address output for *target*.

  For details on the check method, refer to the manual of the "VMware vCenter Server".

- Check that communication is possible with the IP address output for *target*.

  For the recovery procedure, refer to "Message number 67192".

If a huge amount of these messages is output to the event log and makes it difficult to find the other messages, perform the following action:

1. Obtain the span of time when these messages were output.

   The messages are output at about three minutes interval to the number of virtual storage that are showed on the storage tree.
   Each page of event logs has ten items. With this in mind, you can reach to the span of time quicker by specifying appropriate page number.

2. Retrieve the messages that were output during the span of time which was obtained by step 1. from the system logs and the event logs of ROR console.

   The system logs do not contain all messages.

   Refer to "Appendix A System Log Messages" in "Messages VE" to know which kind of messages are output.

   Up to the latest 20,000 messages are stored in the ROR console event log.

   a) System log

   Select the messages of the product that are output during the span of time which was obtained by step 1. The messages of this product can be identified by event types of "application" and source names that start with "JSE_SWRC_FJSVRCX".

   b) Event log of the ROR console

   Display the event logs whose status are "Error" only.

   Sort the logs by event ID.

   Make a rough estimate of the number of messages that were output by dividing the span of time which is retrieved by step 1. by three minutes. Also make a rough estimate of the number of pages which contain messages other than this message.

   Lastly, extract messages other than this message which were output during the span of time which was retrieved in step 1.

- For "VMware vCenter Server communication error"

  - Check that VMware vCenter Server is operating correctly on the IP address output for *target*.

    For details on the check and configuration method, refer to the VMware vCenter Server manual.

  - Check that communication is possible with the IP address output for *target*.

    For the recovery procedure, refer to "Message number 67192".

- For "System Center Virtual Machine Manager communication error(*Virtual_storage_resource_name*)"

  Check the status of the virtual storage resources registered in the storage pool.

  When the status is something other than "unknown", corrective action is not necessary as a communication error has occurred but recovery is complete.

  When the status is "unknown", update virtual storage resources. If the status does not change, take the following corrective action.

- Check that SCVMM is operating correctly on the IP address output for *target*.

  For details on the check method, refer to the SCVMM manual.

- Check that communication is possible with the IP address output for *target*.

  For the recovery procedure, refer to "Message number 67192".

- For "System Center Virtual Machine Manager communication error"

  Perform the following corrective actions:

  - Check that SCVMM is operating correctly on the IP address output for *target*.

    For details on the check method, refer to the SCVMM manual.

  - Check that communication is possible with the IP address output for *target*.

    For the recovery procedure, refer to "Message number 67192".

- For "Oracle VM Manager communication error(*Virtual_storage_resource_name*)"

  Check the status of the virtual storage resources registered in the storage pool.

  When the status is something other than "unknown", corrective action is not necessary as a communication error has occurred but recovery is complete.

  When the status is "unknown", update virtual storage resources.

  If the status does not change, perform the following corrective action:

  - Check that Oracle VM Manager is operating correctly on the IP address output for *target*.

    For details on the check and configuration method, refer to the Oracle VM Manager manual.

  - Check that communication is possible with the IP address output for *target*.

    For the recovery procedure, refer to "Message number 67192".

- For "Oracle VM Manager communication error"

  - Check that Oracle VM Manager is operating correctly on the IP address output for *target*.

    For details on the check and configuration method, refer to the Oracle VM Manager manual.

  - Check that communication is possible with the IP address output for *target*.

    For the recovery procedure, refer to "Message number 67192".

- If the IP address of storage management software is displayed:

  Perform the following corrective actions:

  - The necessary settings for the storage management software may not have been completed. For details, refer to "D.3 Pre-setup Preparations (Storage)" of the "Setup Guide CE".

  - Check that communication is possible with the IP address output for *target*.

    For the recovery procedure, refer to "Message number 67192".

If the problem is still not resolved after performing the above actions, collect the corresponding message and troubleshooting data, and contact Fujitsu technical staff.

69122

FJSVrcx:ERROR:69122:timeout occurred while executing power controlmodules

[Description]

Refer to the explanation in "Message number 69122" in the "Messages VE".

[Corrective Action]

Refer to the explanation in "Message number 69122" in the "Messages VE".

There is also the following case for Resource Orchestrator.

- If a physical L-Server has been deleted:

  There may be an error in the HBA BIOS settings.

  Perform the following check and corrective action:

  - Check whether spin up delay has been set

    If spin up delay has been set in HBA BIOS settings, cancel the setting and perform the operation again.

3.2 Messages Beginning with swsag or ssmgr

This section explains the messages that are output or displayed due to EMC.

Replace the following terms with the expressions given below for each storage model as you read this section.

Term	EMC CLARiiON	EMC Symmetrix DMX or EMC Symmetrix VMAX
HostAffinity	The connection path between the HBA of the host to be registered in Storage Group and SP ports	The connection path between HBA of the host to be registered in device group and SP ports
RAID group	RAID group	disk group
Volume	ALU	Device
AffinityGroup	Storage Group	device group
Port	SP port	DIRECTOR port

swsag0491

syntax error. detail=*%DETAIL*

[Description]

There is an error in the format of the command. usage is displayed.

One of the following is displayed in *%DETAIL*:

- command is not specified.

  The command has not been specified.

- command[*value*] is invalid.

  The specified command is incorrect, or was not found.

- parameter is invalid.

  There is an error in the specified parameter.

- option[*value*] is invalid or duplicated.

  The specified option is incorrect, not found, or defined repeatedly.

- option[*value*] is invalid value or format.

  The value specified for the option is incorrect, or the format is wrong.

[Corrective Action]

Collect troubleshooting data, and then contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

swsag2320

No access path has been set up.

[Description]

The access path has not been specified.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

- HostAffinity cannot be registered because the number of HostAffinity that can be registered in the port has reached its limit

  Check the number of HostAffinity registered in the port. To register a new HostAffinity, specify other ports, or delete unnecessary HostAffinity.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

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ssmgr3302

Failed to obtain the raidgroup information.

[Description]

Failed to obtain the RAID group.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

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ssmgr3305

Failed to obtain the volume.

[Description]

Failed to obtain the volume.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3309

Failed to obtain the affinitygroup.

[Description]

Failed to obtain the AffinityGroup.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3310

Failed to create the affinitygroup.

[Description]

Failed to create the AffinityGroup.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

- A new AffinityGroup cannot be created because the number of AffinityGroup has reached its upper limit

  To create a new AffinityGroup, delete an existing AffinityGroup, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3311

Failed to delete the affinitygroup.

[Description]

Failed to delete the AffinityGroup.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3312

Failed to modify the affinitygroup.

[Description]

Failed to modify the AffinityGroup.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3320

Failed to obtain the port information.

[Description]

Failed to obtain the port information.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3322

Failed to obtain the device information.

[Description]

Failed to obtain the device information.

[Corrective Action]

The error may be the result of one of the following:

- The Navisphere CLI security file does not exist

  Create the Navisphere CLI security file, and then perform the operation again.

- The Navisphere CLI security file does not contain user information

  Register the user information in the Navisphere CLI security file, and then perform the operation again.

If the problem is still not resolved after performing the above actions, collect troubleshooting data, and contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3420

Specified AffinityGroup(*{0}*) doesn't exist.

[Description]

The specified AffinityGroup does not exist.

The AffinityGroup number is displayed in *{0}*.

[Corrective Action]

Collect troubleshooting data, and then contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3424

As for volume *{0}* of specified AffinityGroup(*{1}*), the mapping is not done.

[Description]

Mapping is not performed for volume *{0}* of the specified AffinityGroup *{1}*.

The AffinityGroup number is displayed in *{1}*.

The volume number is displayed in *{0}*.

[Corrective Action]

Collect troubleshooting data, and then contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

ssmgr3426

All mappings of specified AffinityGroup(*{0}*) cannot be deleted.

[Description]

All mappings of the specified AffinityGroup cannot be deleted.

The AffinityGroup number is displayed in *{0}*.

[Corrective Action]

Collect troubleshooting data, and then contact Fujitsu technical staff.

For details on how to collect troubleshooting data, refer to "4.1 Collecting Troubleshooting Data".

3.3 Messages When Operating L-Server Templates from the Wizard GUI

This section explains the messages displayed when L-Server template editing functions are installed.

65701

65701: The template is already being used. Specify a different template name.

[Description]

When creating or copying an L-Server template, an L-Server template with the same name already exists.

[Corrective Action]

Check if an L-Server template with the same name exists.
If the same L-Server template name already exists, specify another name.

65702

65702: The template cannot be updated. After refreshing the display, update the template again.

[Description]

When modifying an L-Server template, no appropriate L-Server template exists.

[Corrective Action]

Check if the appropriate L-Server template exists.

65703

65703:<Template name>:Copying failed.

[Description]

When copying an L-Server template, no appropriate L-Server template exists.

[Corrective Action]

Check if the appropriate L-Server template exists.

65704

65704:<Template name>:Deletion failed.

[Description]

An error occurred when deleting the L-Server template.

[Corrective Action]

Click the <Update> button in the [L-Server Template Editor] window.

65706

65706:<Template name>:Export failed.

[Description]

When exporting an L-Server template, no appropriate L-Server template exists.

[Corrective Action]

Check if the appropriate L-Server template exists.

65707

65707:<L-Server name>:not found.

[Description]

When exporting an L-Server template from the L-Server, no appropriate L-Server exists.

[Corrective Action]

Check if the appropriate L-Server exists.

65709

65709:<Import file name>:Import failed.

[Description]

When importing an L-Server template, the XML definitions are not appropriate.

[Corrective Action]

Check the XML definitions of the L-Server template.

65710

65710:Unknown exception occurred, please refresh the window and try again.

[Description]

An unexpected error has occurred.

[Corrective Action]

Refresh the window and perform the operation again. If the problem is still not resolved, contact Fujitsu technical staff.

3.4 Messages for Dashboard Coordination

This section explains the messages output using log files, when using dashboard coordination.

The storage location of log files is as described below.

Storage Location

[Windows]
Installation_folder\dashboard\rcxadm2csv.log

[Linux]
/var/opt/FJSVrcvmr/dashboard/rcxadm2csv.log

The following messages will be output in the log files:

cannot get pool list, maybe ServerView Resource Orchestrator is down

[Description]

After executing the rcxadm pool list command, if acquisition of the resource pool list fails, the message will be output.

Services of Resource Orchestrator may not have been started.

[Corrective Action]

Check if services of Resource Orchestrator have been started, and start them if they have been stopped.

 Note

Regularly check the size of the log files. When their size increases, delete them.

Chapter 4 Troubleshooting

This chapter explains how to solve problems and gather troubleshooting data for a technical investigation.

4.1 Collecting Troubleshooting Data

This section explains how to collect the data required to diagnose the causes of problems.

Use the following method to collect data with the rcxadm mgrctl snap command or the rcxadm agtctl snap command, and collect VM management software data.

Collection Method

Perform the following procedure on the server from which data is to be collected:

1. Log on to the server with OS administrator privileges.

   OS administrative privileges are required to collect troubleshooting data.

2. Execute the rcxadm mgrctl snap -full command or the rcxadm agtctl snap -full command.

   Note that the command differs depending on the server from which data is collected.

   - For Admin Servers:

     [Windows]

     > **"*Installation_folder*\Manager\bin\rcxadm" mgrctl snap [-dir** *directory*] **-full** <RETURN>

     [Linux]

     # **/opt/FJSVrcvmr/bin/rcxadm mgrctl snap [-dir** *directory*] **-full** <RETURN>

   - For Managed Servers:

     [Windows/Hyper-V]

     > **"*Installation_folder*\Agent\bin\rcxadm" agtctl snap [-dir** *directory*] **-full** <RETURN>

     [Linux/VMware]

     # **/opt/FJSVrcxat/bin/rcxadm agtctl snap [-dir** *directory*] **-full** <RETURN>

   > **Note**
   > ....
   > The command to collect the data cannot be executed with VMware ESXi because an agent of Resource Orchestrator cannot be installed.
   > ....

3. Collect the storage management software and VM management software data.

   For details on the collection method, refer to the manuals of each storage management software and VM management software.

   [VMware]
   If the VM management software is VMware vCenter Server, perform the following operations. Check that sufficient disk space is available in the storage location as the size of the collected troubleshooting data file is large.

   a. Start the VMware vSphere (TM) Client and connect to VMware vCenter Server as a user with system administrator privileges.

   b. From the menu, select [Administration]-[Export System Logs].

   c. For the collection target, specify VMware vCenter Server.

   d. Specify the storage location, and click <OK>.

Send the collected troubleshooting data to Fujitsu technical staff.

For details on troubleshooting data, refer to "Chapter 15 Troubleshooting" in the "Operation Guide VE".

If problems that are not described in this section occur, refer to "Chapter 15 Troubleshooting" in the "Operation Guide VE".

4.2 Overview

This section provides an overview of problems that can occur when operating ServerView Resource Orchestrator.

The types of problems are listed below.

Operations for Creating or Starting L-Servers

- The Guest OS Associated with the L-Server Does Not Start Properly When the L-Server Assigned with an Image is Started for the First Time.

- When System Failure Occurs on the Admin Server or Manager, or Job Cancellation or Timeout Occurs on the VM Management Software, Creating or Starting the L-Server Fails, and VM Guests in the Process of Being Created Using Server Virtualization Software Remain.

- When System Failure Occurs on the VM Management Server or VM Management Software during L-Server Creation, Creating or Starting the L-Server Fails but VM Guests Being Created on Server Virtualization Software may Remain.

- When Creation of an L-Server Takes a Long Time, or L-Server Creation Fails and "Message number 67390" is Displayed.

- When Starting an L-Server, "Message number 67320" is Displayed, and Starting of the L-Server Fails.

- When a Physical L-Server is Created or Started, "Message number 61162" is Displayed, then Creation or Startup of the L-Server Fails.

- When an L-Server is Created or Started, "Message number 62511" is Displayed, then Creation or Startup of the L-Server Fails.

- When Creating an L-Server using a Specific Type of Image, Login is Impossible when using VMs which use Japanese Keyboard Environments.

- Creation of an L-Server for Windows Using VMware Fails, and "Message number 67390" is Displayed.

- When Creating a Physical L-Server, Configuration of the Network Information Fails.

- When Opening the Physical L-Server Console Screen, the iRMC Management Window may be Opened.

- Cannot Communicate Outside of the Chassis after Creating the L-Server.

- When Creating or Turning on an L-Server, "Message number 67295" or "Message number 67210" may be Displayed even Though the Operation is Successfully Completed.

- When Creating or Starting a Physical L-Server Using Physical Server Usage Change, the Update of VIOM Configuration Information in Recent Operations may be Displayed.

General Operations for L-Servers

- When Trying to Open the [Migrate an L-Server] Dialog for an L-Server with unknown Status, it may Indicate Loading but not become Operable.

- The Status of an L-Server is Displayed as unknown, and "Message number 67154" or "Message number 67178" is Displayed Even if Operations Other Than L-Server Deletion are Performed.

- When Deleting an L-Server, "Message number 67391", "Message number 67210" or "Message number 67280" are Displayed and Deletion Fails.

- Migrating an L-Server between Servers Fails, and "Message number 67385" is Displayed.

- When a Virtual L-Server is Stopped, "Message number 69122" is Displayed, and Stopping of the L-Server Fails.

- When a Disk Resource is Connected to an L-Server, "Message number 62511" is Displayed and Connection Fails.

- When "Message number 67320" is Displayed after Recovery of the Manager from System Failure Due to L-Server Power Operations.

- When an RHEL-Xen Agent is Registered, "Message number 67359" is Displayed, and Registration of the Agent Fails.

Operations for Images or Cloning Images

- After Collection of Images Fails, Images Not Registered in the Image Pool Remain on VM Management Software.

- When Collecting a Cloning Image, "Message number 21161" or "Message number 21162" is Displayed.

- When Creation of an L-Server Specifying Images Fails and "Message number 67390" is Displayed.

- When Collecting a Cloning Image on an L-Server with the VM Type "RHEL-Xen","Message number 67999" is Displayed, and Cloning Image Collection may Fail.

Operations for Snapshots

- After Collection of Images Fails, Snapshots Which Cannot be Referred to or Operated from Resource Orchestrator Remain on VM Management Software.

- When Restarting vCenter Server Services, Snapshots of L-Server may not be Managed.

Operations for VM Management Software or Server Virtualization Software

- "Message number 21162" is Displayed When the Configuration of the Server Virtualization Software (VMware) is Changed.

- When Job Cancellation or Timeout Occurs on VM Management Software, Collection of Cloning Images Fails and VM Guests in the Process of Being Copied Remain on the VM Management Software.

- When Server Switchover is Performed Using Redundancy Software of the Admin Server, Creation of L-Servers Fails, and Incomplete VM Guests will Remain on Server Virtualization Software.

- Operation may not Complete due to Rebooting of a VM Host (Admin OS) or Communication Failure. [Xen] [KVM]

Operations for ROR Console

- On the ROR Console, the Values on the [Resource List] tab are "?", and on other tabs, "There is no information to display." is Displayed.

- On the ROR Console, When Clicking <OK> Repeatedly, the Same Definition is Added across Multiple Lines.

- When Cookies Stored in a Web Browser Displaying the ROR Console are Deleted, the Screen Layout may Collapse, or the Error Dialog "ERROR,Establishing connection with admin server failed." may be Displayed.

- When Restarting a Manager or Admin Server, the Recent Operations on the ROR Console may Display Completed for all Operations Including the Operation Being Executed.

- When Hiding Displayed Resource Information in the [Resource] Tab of the ROR Console, after a Certain Length of time (after Regular Update of Resources), the Display of Resource Information that was Updated may Collapse.

- When the Last Page of the List is Displayed in the ROR Console, the List may not Actually Display Anything.

- The Member Ports of the Link Aggregation may not be Updated even when "Update" is Clicked for the LAN Switch Blade in the Server Resource Tree of the ROR Console.

4.3 Operations for Creating or Starting L-Servers

The Guest OS Associated with the L-Server Does Not Start Properly When the L-Server Assigned with an Image is Started for the First Time.

[Description]

When an L-Server assigned with an image is started for the first time or when the guest OS is being started, one of the following messages is displayed on the guest OS console and the guest OS fails to startup.

   a. "The computer restarted unexpectedly or encountered an unexpected error." is displayed

   b. "Windows could not parse or process the unattend answer file for pass [specialize]" is displayed

   c. "Your Product Key uniquely identifies your copy of windows." is displayed on the product key entry screen

   d. "The system could not log you on. Make sure your User name and domain are correct, then type your password again. Passwords are case-sensitive. " is displayed

[Corrective Action]

The parameters set for the OS specified when creating an L-Server may be incorrect. Set the correct values and perform the operation again.

   - For a. through c.:

   Check the product key value. If the value is not correct, set the correct value.

   - For d.:

   Check the administrator password value. If the value is not correct, set the correct value.

For details on the parameters set for the OS, refer to "10.2.5 [OS] Tab" or "10.3.5 [OS] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

When System Failure Occurs on the Admin Server or Manager, or Job Cancellation or Timeout Occurs on the VM Management Software, Creating or Starting the L-Server Fails, and VM Guests in the Process of Being Created Using Server Virtualization Software Remain.

[Description]

When the following events occur while creating or starting the L-Server, one of the following messages may be output in the event log, and creating or starting of the L-Server will fail.

   - Occurred Problems

      - System failure, or reboot of the admin server or manager

      - Job cancel or time out on VM management software

      - Server switchover in which managers are operating using the HA function of cluster software or server virtualization software

   - Messages

   > - FJSVrcx:ERROR:67390:creating VM guest failed. detail=(*message*,vmerrno=9,ip=*IP_address*)
   >
   > - FJSVrcx:ERROR:67392:modifying VM guest failed. detail=(*message*,vmerrno=9,ip=*IP_address*)
   >
   > - FJSVrcx:ERROR:67390:creating VM guest failed. detail=(PowerShell script execution error : create_vmguest:task result error,vmerrno=104,ip=*IP_address*, host=*VM_host_IP_address*)
   >
   > - FJSVrcx:ERROR:67390:creating VM guest failed. detail=(PowerShell script execution error : create_vmguest:task result timeout,vmerrno=105,ip=*IP_address*,host=*VM_host_IP_address*)

After starting the manager again, one of the following messages is output in the event log, and creating or starting the L-Server that was being created before the manager stopped may fail.

   > - FJSVrcx:ERROR:67390:creating VM guest failed. detail=(clone *image_name*:task result error,vmerrno=104,ip=*IP_address*)
   >
   > - FJSVrcx:ERROR:67390:creating VM guest failed. detail=(create *VM_guest_name*:task result error,vmerrno=104,ip=*IP_address*)

- FJSVrcx:ERROR:67390:creating VM guest failed. detail=(*Message*:task result error,vmerrno=104,ip=*IP_address*,host= *VM_host_IP_address*)

- FJSVrcx:ERROR:67390:creating VM guest failed. detail=(PowerShell script execution error : create_vmguest:VM guest already exists,vmerrno=603,ip=*IP_address*,host= *VM_host_IP_address*)

For details on the messages, refer to "Message number 67390" or "Message number 67392".

When the message above is output, VM guest in process of creation may remain on server virtualization software.

[Corrective Action]

Make sure that the manager is running, and use the following procedure for restoration:

1. Check the VM guest name related to the error message above with the event log on the ROR console. The VM guest name is displayed for the resource name in the event log.

2. Display the VM management console, and check if the VM guest checked in 1. exists. Also, confirm that an existing disk has been attached.

3. If a VM guest exists and an existing virtual disk has been attached at 2., detach the virtual disk. For details on how to detach virtual disks, refer to the server virtualization software manual. (*1)

   *1: When the server virtualization software is Hyper-V, select "No" for the "When a virtual hard disk file is removed from a virtual machine, it can also be removed from the virtual machine host. Do you want Virtual Machine Manager to do this for you?" displayed when deleting a virtual disk.

4. If there is a VM guest that meets the condition in 2., delete it from the VM management console. For details on how to delete VM guests, refer to the server virtualization software manual. (*2)

   *2: When server virtualization software is VMware, select "Delete from Disk", when deleting VM guests.

5. After confirming from the server tree or orchestration tree on the ROR console that the VM guest that was checked in 1. does not exist, create or start the L-Server again.

When System Failure Occurs on the VM Management Server or VM Management Software during L-Server Creation, Creating or Starting the L-Server Fails but VM Guests Being Created on Server Virtualization Software may Remain.

[Description]

If system failure occurs on the VM management software server or VM management software while creating or starting the L-Server, one of the following messages may be output in the event log, and creating or starting of the L-Server will fail.

- FJSVrcx:ERROR:67390:creating VM guest failed. detail=(vmware remote error,vmerrno=101,ip=*IP_address*)

- FJSVrcx:ERROR:67390:creating VM guest failed. detail=(logout failed(remote error),vmerrno=116,ip=*IP_address*)

- FJSVrcx:ERROR:67390:creating VM guest failed. detail=timeout occurred

- FJSVrcx:ERROR:67392:modifying VM guest failed. detail=(vmware remote error,vmerrno=101,ip=*IP_address*)

- FJSVrcx:ERROR:67392:modifying VM guest failed. detail=(logout failed(remote error),vmerrno=116,ip=*IP_address*)

For details on the messages, refer to "Message number 67390" and "Message number 67392".

When the message above is output, VM guest in process of creation may remain on server virtualization software.

[Corrective Action]

Make sure that the VM management software is running, and use the following procedure for restoration.

1. Check the resource name related to the error message above with the event log on the ROR console. The VM guest name is displayed for the resource name.

2. Display the VM management console, and check if the VM guest checked in 1. exists. Also, confirm that an existing disk has been attached.

3. If a VM guest exists and an existing virtual disk has been attached at 2., detach the virtual disk. For details on how to detach virtual disks, refer to the server virtualization software manual. (*1)

   *1: When the server virtualization software is Hyper-V, select "No" for the "When a virtual hard disk file is removed from a virtual machine, it can also be removed from the virtual machine host. Do you want Virtual Machine Manager to do this for you?" displayed when deleting a virtual disk.

4. If there is a VM guest that meets the condition in 2., delete it from the VM management console.

   For details on how to delete VM guests, refer to the server virtualization software manual. (*2)

   *2: When server virtualization software is VMware, select "Delete from Disk", when deleting VM guests.

5. Check if the VM management software can communicate with the manager. Select the VM management software in the server resource tree of the ROR console, and check if the status displayed on the main panel is "normal".

6. After confirming from the server tree or orchestration tree on the ROR console that the VM guest that was checked in 1. does not exist, create or start the L-Server again.

When Creation of an L-Server Takes a Long Time, or L-Server Creation Fails and "Message number 67390" is Displayed.

[Description]

Due to hardware failure, L-Server creation may take an excessive amount of time.

When it does take a long time, the following message is output and L-Server creation may fail.

```
FJSVrcx:ERROR:67390:creating VM guest failed. detail=timeout occurred
```

For details on the message, refer to "Message number 67390".

[Corrective Action]

There is a possibility that the hardware of the server used for L-Server creation has failed.

Check the following:

a. When the server used to create the L-Server is a blade server, if failure of the Fibre Channel switch blade has occurred

b. When the server used to create the L-Server is a blade server, if failure of the LAN switch blade has occurred

When hardware failure has occurred, update the hardware information held by the server virtualization software.

For details on how to update hardware information, refer to the server virtualization software manual.

When Starting an L-Server, "Message number 67320" is Displayed, and Starting of the L-Server Fails.

[Description]

When starting the L-Server, the following message is displayed, and starting of the L-Server may fail.

```
- ERROR:67320:power control error.target=target detail=(VM guest:vmguest not found,vmerrno=17,ip=IP_address)

- ERROR:67320:power control error.target=target detail=(poweron:task result error,vmerrno=104,ip=IP_address)
```

The following causes are possible:

a. Migration has been performed on VMware.

b. VMware DRS has been enabled.

c. VMware DPM has been enabled and a VM host in standby mode exists in the same cluster as the target VM host of L-Server creation.

For details on the message, refer to "Message number 67320".

[Corrective Action]

- For a. and b:

  In the ROR console orchestration tree, right-click the target L-Server, and select [Update] from the popup menu. Check if the resource status of the updated L-Server is normal.

- For c:

  Start the L-Server from VM management software.

When a Physical L-Server is Created or Started, "Message number 61162" is Displayed, then Creation or Startup of the L-Server Fails.

[Description]

When a physical L-Server for which "Resource release" has been set in the [Server] tab of the [Create an L-Server] dialog or of the [Modify an L-Server] dialog is created or started, the following message may be displayed and the operation fails.

```
FJSVrcx:ERROR:61162:resource state(s) differ from actual state(s) in VIOM.
```

[Corrective Action]

A VIOM server profile may remain.

To recover from the error, manually delete the VIOM server profile.

The name of the server profile is given as "L-Server name_admin ID".

Check the relevant server profile, delete the VIOM profile, and then restart the physical L-Server.

When an L-Server is Created or Started, "Message number 62511" is Displayed, then Creation or Startup of the L-Server Fails.

[Description]

When creating or starting the L-Server, the following message is displayed, and creation or startup of the L-Server may fail.

- When using ETERNUS DX80 S2, ETERNUS DX90 S2, or ETERNUS DX400 S2 series storage

```
FJSVrcx:ERROR:62511:failed to control obj. IF=%1,message="ERROR:ssmgr3514:The specified value has already been registered."
```

- When using storage other than ETERNUS DX80 S2, ETERNUS DX90 S2, or ETERNUS DX400 S2 series

```
FJSVrcx:ERROR:62511:failed to control obj. IF=%1,message="ERROR:ssmgr3419:The specified alias name has already been registered."
```

In *obj*, the resource name of the storage management software is displayed.

In *%1*, the internal function name is displayed.

Creation or startup of the L-Server failed because the alias name of the affinity group has already been defined when ETERNUS storage was created.

[Corrective Action]

Using the following procedure, identify the overlapping affinity group, delete the unnecessary affinity group or the unnecessary affinity group and the Volume defined in the unnecessary affinity group, and then create the L-Server again.

1. Check the resource name of the unused address set resource (WWN) with the smallest number.

   a. Execute the following command:

   ```
   >Installation_folder\Manager\bin\rcxadm addrset show -name
   Resource_name_of_the_Address_Set_Resource(WWN) <RETURN>
   ```

b. Identify the unused address set resource (WWN) with the smallest number.

The range of the "start" and "end" inside the AddressSet tag becomes the range of the Address set resource (WWN).

In the range of address set resources (WWN), all addresses other than those below are considered unused address set resources (WWN).

- Addresses which are not used for management by Resource Orchestrator, and are displayed in the Exclude tag

- Addresses which have been allocated, and are displayed in the Reserve tag

From the unused address set resources, identify the one with the smallest number.

📋 Example
. . . .

When the output result is the one below, the resource name of the unused address set resource (WWN) with the smallest number will be "20:01:00:17:42:50:00:02".

```
<?xml version="1.0" encoding="utf-8"?>
  <AddressSet name="wwndata1" id="540" label="wwn1" subnet="" mask=""
start="20:01:00:17:42:50:00:00" end="20:01:00:17:42:50:00:0f">
    <Comment>wwn-test-data-1</Comment>
    <Exclude>
      20:01:00:17:42:50:00:00
    </Exclude>
    <Reserve>
      20:01:00:17:42:50:12:01 AM
    </Reserve>
  </AddressSet>
```

. . . .

2. Identify the alias name of the affinity group created when creating ETERNUS storage during L-Server creation.

Extract the characters corresponding to "XX" below from the resource name of the unused address set resource (WWN) with the smallest number. These characters become the alias name of the affinity group created when creating ETERNUS storage.

"YY:XX:YY:YY:YY:XX:XX:XX"

📋 Example
. . . .
For "20:01:00:17:42:50:00:02" it would be "01500002".
. . . .

3. Identify the affinity group to delete.

Execute the following command to display the affinity groups of each ETERNUS storage that is managed using ESC.

```
>ESC_manager_installation_folder\Manager\opt\FJSVssmgr\sbin\storageadm affinity info -ipaddr
ETERNUS_IP_address <RETURN>
```

Check if the alias name of the affinity group identified in 2. is included in the affinity group alias names displayed in "NAME".

- If the alias name is included

  The relevant affinity group will be the target of deletion.

- If the alias name is not included

  Collect troubleshooting data, and then contact Fujitsu technical staff.

Check the affinity group number that is displayed for "NUMBER" of the relevant affinity group.

4. Check if the HBA to use the affinity group exists.

Executing the following command displays the affinity group number, which is used from the host and from the WWPN of the HBA that uses ETERNUS.

> *ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm zone info -hex** <RETURN>

The lines after the output result of "<<< FC CA Zone Information >>>", the affinity group numbers that are used from the VM host and from the WWPN of the HBA that uses ETERNUS are collectively displayed for each storage unit.

For the target ETERNUS, check if the affinity group number identified in step 3. is included.

There may be multiple relevant lines.

- If an affinity group number is not contained

There is an HBA which uses the relevant affinity group number.

- When access to ETERNUS from the VM host using the relevant HBA is not necessary

Check the WWPN of the CA that is displayed for "CA_WWPN" and the WWPN of the HBA that is displayed for "HBA_WWPN", then execute the following procedure.

- When access to ETERNUS from the VM host using the relevant HBA is necessary

Collect troubleshooting data, and then contact Fujitsu technical staff.

- If an affinity group number is not contained

Execute step 6.

5. Delete the definition of the HBA that uses the affinity group number.

Executing the following command deletes all definitions of HBAs that were checked in step 4.

> *ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm zone delete -storage** *CA_WWPN,Affinity_group_number* **-hba** *HHBA_WWPN* **-update all** <RETURN>

6. Identify the volume to delete.

Execute the following command to display the volume numbers of each Volume defined in the affinity group identified in step 3.

> *ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm affinity info -ipaddr** *ETERNUS_IP_address* **-affinitygroup** *Affinity_group_number* <RETURN>

The Volume with the volume number matching that displayed in "VOLUME" becomes the target of deletion.

7. Delete the affinity group.

Execute the following command to delete the affinity group identified in step 3.

> *ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm affinity delete -ipaddr** *ETERNUS_IP_address* **-affinitygroup** *Affinity_group_number* <RETURN>

8. Decide whether the Volume should be deleted.

Do not delete the Volume when the volume number identified in step 6. corresponds to the LUN created in advance.

The LUN created in advance can be checked by the following method.

Execute the following command: Check that the IP address of ETERNUS is displayed for "UNIT_NAME", and examine the line where "VOLUME_ID" contains the volume number confirmed in step 6.

> *Installation_folder***Manager\bin\rcxadm disk list -verbose** <RETURN>

- When "Yes" is displayed for "PRE_CREATED" in the relevant line

It is not necessary to delete the Volume, as the Volume is the LUN created in advance.

- When "No" is displayed for "PRE_CREATED" in the relevant line

  It is necessary to delete the Volume, as the Volume is not the LUN created in advance. Proceed to the following procedure.

9. Delete the Volume.

   Execute the following command to delete the Volume identified in step 6.

   > *ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm volume delete -ipaddr**
   ETERNUS_IP_address **-volume** *Volume_number*[,*Volume_number*,...] <RETURN>

   When any other message is displayed from the storage management software, refer to the manual of the storage management software, take the necessary corrective action for the message, and then perform the operation again.

When Creating an L-Server using a Specific Type of Image, Login is Impossible when using VMs which use Japanese Keyboard Environments.

[Description]

When creating an L-Server using images with the following OS types, login to VMs using Japanese keyboard environments may fail.

- Windows Server 2008

- Windows 7

- Windows Vista

[Corrective Action]

Log in to a VM guest using a software keyboard, by opening "Regional and Language Options" on the Control Panel, and set the appropriate language.

Creation of an L-Server for Windows Using VMware Fails, and "Message number 67390" is Displayed.

[Description]

When creating an L-Server specifying an image for Windows using VMware, the following message is displayed, and creation of the L-Server may fail.

FJSVrcx:ERROR:67390:creating VM guest failed. detail= (customize *VM guest name*:task result error,vmerrno=104,ip=*IP address*)

The following causes are possible:

a. Sysprep is not located on VMware vCenter Server.

   If the OS type for the VM guest is Windows, installation of Sysprep is required.

b. The Sysprep located on VMware vCenter Server is incorrect.

   The correct Sysprep file, decided according to the OS version for the VM guest (Windows 2000, Windows XP, and Windows 2003) and the CPU architecture (x86 and x64) is necessary.

When using Windows Server 2008, Sysprep is not required because it is set up in the OS. For details on the message, refer to "Message number 67390".

[Corrective Action]

Perform the following corrective actions:

- For a.:

  Locate Sysprep on VMware vCenter Server.

- For b.:

  Confirm the OS version for the VM guest and CPU architecture, and locate Sysprep on VMware vCenter Server.

For details on the location for Sysprep, refer to the description for the Microsoft Sysprep tool in the "vSphere Virtual Machine Administration Guide" manual released by VMware, Inc.

Refer to the relevant version of document, referring to the following URL:

> URL: http://www.vmware.com/support/pubs/vs_pubs.html (As of February 2012)

When Creating a Physical L-Server, Configuration of the Network Information Fails.

[Description]

During physical L-Server creation, if the following message is output, configuration of the network information has failed.

> FJSVrcx:ERROR:67192:communication error.target=*target*

[Corrective Action]

When configuration of the network information fails, the physical L-Server cannot be deleted.

Perform the corrective action according to "Corrective Action" for the message.

Then configure the network information using the following method.

- Configure the network environment

  Execute the rcxadm lserver setup command to send the network information to an L-Server.

  For details on the command, refer to "1.3.1 rcxadm lserver".

When Opening the Physical L-Server Console Screen, the iRMC Management Window may be Opened.

[Description]

When right-clicking the target physical L-Server in the orchestration tree, and selecting [Console Screen] from the popup menu, the L-Server console screen is opened. After this is done once, this operation may open the iRMC management window instead of the physical L-Server console screen.

In this case, the following message is displayed on the iRMC management window.

> Login required to continue.
> Please login with a valid username and password

[Corrective Action]

Perform the following corrective actions:

1. Close the displayed iRMC management window.

2. Then open the physical L-Server console screen again from the ROR console.

Cannot Communicate Outside of the Chassis after Creating the L-Server.

[Description]

If the switch blade is being used is in end host mode, then there may have been a pin-group other than the default pin-group created.

[Corrective Action]

Delete all but the default pin-group.

When Creating or Turning on an L-Server, "Message number 67295" or "Message number 67210" may be Displayed even Though the Operation is Successfully Completed.

[Description]

If the manager is overloaded, one of the following error messages may be displayed when operations like creating an L-Server are performed.

- FJSVrcx:ERROR:67295:*L-Server name*:duplicate resource name found

- FJSVrcx:ERROR:67210:*L-Server name* is busy

When the above message is displayed, the corresponding operation may be still be being performed. Check the progress of the operation in Recent Operations or the Event Log.

[Corrective Action]

Check the following:

- The hardware configuration of the admin server does not meet the requirements for a manager.

  Refer to "1.5 Hardware Environment" in the "Setup Guide CE" and confirm that the hardware conditions described are met.

- The CPU utilization of the admin server may be too high.

  Check if any high CPU usage applications are running on the admin server.

When Creating or Starting a Physical L-Server Using Physical Server Usage Change, the Update of VIOM Configuration Information in Recent Operations may be Displayed.

[Description]

It shows that VIOM profiles have been updated on a different physical L-Server from before, based on the usage change of physical L-Servers.

That is not the problem as only VIOM profiles are updated. The information may be displayed multiple times, depending on the timing.

[Corrective Action]

No action is necessary.

4.4 General Operations for L-Servers

When Trying to Open the [Migrate an L-Server] Dialog for an L-Server with unknown Status, it may Indicate Loading but not become Operable.

[Description]

When trying to open the [Migrate an L-Server] dialog for an L-Server with unknown status, it may indicate loading but not become operable. The following causes are possible:

a. A VM guest used on the L-Server has been deleted from server virtualization software

b. During L-Server deletion, system failure of the VM management software server or VM management software has occurred

c. During L-Server deletion, system failure of admin server or manager occurs

[Corrective Action]

Close the [Migrate an L-Server] dialog, when loading takes a very long time.
After that, check that the admin server, manager, VM management software server, or VM management software have been started, and perform the relevant operation.

- For a.:

  Delete the L-Server.

- For b. or c.:

  Delete the L-Server again.

The Status of an L-Server is Displayed as unknown, and "Message number 67154" or "Message number 67178" is Displayed Even if Operations Other Than L-Server Deletion are Performed.

[Description]

The status of an L-Server is displayed as unknown, and even if operations other than L-Server deletion are performed, the following message is displayed.

```
FJSVrcx:ERROR:67154:server OS:not found
FJSVrcx:ERROR:67154:vm_host:not found
FJSVrcx:ERROR:67154:VM_guest_name:not found
FJSVrcx:ERROR:67178:L-Server_name is power-off status
```

The following causes are possible:

 a. A VM guest used on the L-Server has been deleted from server virtualization software

 b. During L-Server deletion, system failure of the VM management software server or VM management software has occurred

 c. During L-Server deletion, system failure of admin server or manager occurs

 d. A VM guest used on the L-Server has been moved from server virtualization software to a VM host which is unregistered in VM pool

For details on the messages, refer to "Message number 67154" or "Message number 67178".

[Corrective Action]

Check that the admin server, manager, VM management software server, or VM management software have been started, and perform the relevant operation.

 - For a.:

   Delete the L-Server.

 - For b. or c.:

   Delete the L-Server again.

 - For d.:

   Migrate VM guests being used on the L-Server to VM hosts which are already registered in the VM pool.

When Deleting an L-Server, "Message number 67391", "Message number 67210" or "Message number 67280" are Displayed and Deletion Fails.

[Description]

The VM host, which the L-Server is running on, detects that the VM guest of the L-Server does not exist, so the following messages are output and L-Server deletion fails.

```
 - FJSVrcx:ERROR:67391:deleting VM guest failed. detail=(VM_guest_name:vmguest not found,vmerrno=17,ip=IP_address)

 - FJSVrcx:ERROR:67210:VM_guest_name(VM guest):is busy

 - FJSVrcx:ERROR:67280:VM_guest_name:deleting VM guest not supported. (VM type)
```

For details on the messages, refer to "Message number 67391", "Message number 67210", and "Message number 67280".

[Corrective Action]

Check the name of the VM guest of the L-Server using the GUI or the CLI.

 - When using the GUI:

   1. Display the ROR console.

2. Select the L-Server on the orchestration tree.

3. Select the [Resource Details] tab on the main panel, and check the guest name of the resource.

- When using the CLI:

1. Execute the following command:

>**rcxadm lserver show -name** *L-Server_name* <RETURN>

2. Check the display of "VmGuest:".

If the VM guest name is not displayed, delete the L-Server again.

If the VM guest name is displayed, check that migration is not being performed from the management screen of the VM management software, and then delete the L-Server again.

When any message is output during deletion of the L-Server, check that the VM guest name of the L-Server is not displayed, and then delete the L-Server again.

Migrating an L-Server between Servers Fails, and "Message number 67385" is Displayed.

[Description]

After starting an L-Server operating on a VMware VM host, when migration between servers is performed before completion of starting of the OS, the following message is output and migration fails.

FJSVrcx:ERROR:67385:migrating VM guest failed. *VM_guest_name* migrate from *source_server* to *destination_server*. detail=(*message*,vmerrno=150,ip=*IP_address*)

For details on the message, refer to "Message number 67385".

[Corrective Action]

Perform the operation again after starting of the L-Server's OS is complete.

When a Virtual L-Server is Stopped, "Message number 69122" is Displayed, and Stopping of the L-Server Fails.

[Description]

When stopping the L-Server, the following message may be displayed, and stopping of the L-Server will fail.

FJSVrcx:ERROR:69122:timeout occurred while executing power control modules.

Timeout occurs because shutdown of the OS running on the L-Server takes a long time.

For details on the messages, refer to "Message number 69122" of "Messages VE".

[Corrective Action]

Use the following procedure to change the wait time for stopping the L-Server.

1. Change the wait time.

Change the parameter value given in the following file, according to your environment.

Specify the parameter value in seconds. Do not change other parameters.

- The Target File

[Windows]
Installation_folder**Manager\rails\config\rcx\vm_guest_params.rb**

[Linux]
/opt/FJSVrcvmr/rails/config/rcx/vm_guest_params.rb

- Parameter

SHUTDOWN_TIMEOUT

📝 Example

・・

When you change the wait time from 5 minutes to 15 minutes

Before changing: SHUTDOWN_TIMEOUT = 300
After changing: SHUTDOWN_TIMEOUT = 900

・・

2. Restart the Manager.

The changed value is enabled.

[Windows]

```
>Installation_folder\Manager\bin\rcxadm mgrctl stop <RETURN>
>Installation_folder\Manager\bin\rcxadm mgrctl start <RETURN>
```

[Linux]

```
# /opt/FJSVrcvmr/bin/rcxadm mgrctl stop <RETURN>
# /opt/FJSVrcvmr/bin/rcxadm mgrctl start <RETURN>
```

When a Disk Resource is Connected to an L-Server, "Message number 62511" is Displayed and Connection Fails.

[Description]

When a disk resource is connected to an L-Server, the following message may be displayed, and connection fails.

```
FJSVrcx:ERROR:62511:failed to control obj. IF=%1, message="ERROR:ssmgr3422:As for specified volume Volume_number, the
LUN mapping is done."
```

In *obj*, the resource name of the storage management software is displayed.

In *%1*, the internal function name is displayed.

Connecting a disk resource to an L-Server has failed, because the Volume corresponding to the disk resource has already been mapped.

[Corrective Action]

The disk resource may be being used by another server.

If a Volume corresponding to a disk resource that has wrongly been specified from another server was being used, delete the mapping definition of the Volume to cancel the relation to the server. After that, connect the disk resource to the L-Server again.

1. Check the affinity group number of each ETERNUS storage.

Execute the following command to display the affinity groups of each ETERNUS storage that is managed using ESC.

```
>ESC_manager_installation_folder\Manager\opt\FJSVssmgr\sbin\storageadm affinity info -ipaddr
ETERNUS_IP_address <RETURN>
```

Check all affinity group numbers that are displayed for "NUMBER".

2. Check the details of each affinity group to identify the affinity group numbers that have been defined for the mapped Volume.

Using the affinity group numbers checked in 1., view the Volume number defined for each affinity group. Find the affinity group with the volume number "VOLUME" displayed in the message.

> *>ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm affinity info -ipaddr**
> *ETERNUS_IP_address* **-affinitygroup** *Affinity_group_number* <RETURN>

3. Delete a Volume from the affinity group.

 - When the affinity group has multiple mapping definitions

   Execute the following command to delete the Volume from the affinity group that was checked in 2., which corresponds to the volume number that is displayed in the message.

   > *>ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm affinity update -ipaddr**
   > *ETERNUS_IP_address* **-affinitygroup** *Affinity_group_number* **-delete -volume** *Volume_number* <RETURN>

 - When the affinity group has only one mapping definition

   Check HBAs that use the affinity group, then delete the definition of the HBA.

   After that, delete the affinity group.

   Executing the following command displays the affinity group number, which is used from the WWPN of the CA of ETERNUS, from the WWPN of the HBA that uses ETERNUS, and from the server.

   > *>ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm zone info -hex** <RETURN>

   In the lines after the output result of "<<< FC CA Zone Information >>>", the affinity group numbers that are used from the WWPN of the CA of ETERNUS, from the WWPN of the HBA that uses ETERNUS, and from the server are collectively displayed for each storage unit.

   Check the WWPN of the CA and HBA which correspond to the affinity group.

   Execute the following command to delete the definition of an HBA.

   > *>ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm zone delete -storage**
   > *CA_WWPN,Affinity_group_number* **-hba** *HHBA_WWPN* **-update all** <RETURN>

   Execute the following command to delete an affinity group.

   > *>ESC_manager_installation_folder***Manager\opt\FJSVssmgr\sbin\storageadm affinity delete -ipaddr**
   > *ETERNUS_IP_address* **-affinitygroup** *Affinity_group_number* <RETURN>

When "Message number 67320" is Displayed after Recovery of the Manager from System Failure Due to L-Server Power Operations.

[Description]

If system failure occurs on the manager after L-Server power operations (power on or off, or reboot), restoring the manager automatically performs the power operation, and it may fail. In this case, the following messages will be output in the event log.

 - When the power is turned ON

   FJSVrcx:ERROR:67320:power control error. target=*target* detail=(xm create::Error: VM name '*VM_guest_name*' already in use by domain *Number*,vmerrno=400,ip=*IP_address*)

 - When the power is turned OFF

   FJSVrcx:ERROR:67320:power control error. *target*=target detail=(xm shutdown::Error: Domain '*VM_guest_name*' does not exist.,vmerrno=400,ip=*IP_address*)

[Corrective Action]

As a power operation is being performed on the L-Server, ignore the error.

When an RHEL-Xen Agent is Registered, "Message number 67359" is Displayed, and Registration of the Agent Fails.

[Description]

When registering an RHEL-Xen agent, the following message is displayed, and registration of the agent may fail.

RcxError (FJSVrcx:ERROR:67359:*VM_host_name*: VM host registration failed detail=(get_host_info::/opt/FJSVrcxxen/bin/xen_plugin: line *Number*: *Number* – *Number* - (*Number* -): syntax error: operand expected (error tok...,vmerrno=400,ip=*VM_host_IP_address*))

For details on the message, refer to "Message number 67359".

[Corrective Action]

The parameters set for the following file in the VM host for registration may be incorrect:

/etc/xen/xend-config.sxp

Open the file and check that parameters are correct.

For details on the parameters, refer to the "Red Hat Enterprise Linux 5 Virtualization Guide".

Red Hat Enterprise Linux 5 Virtualization Guide

URL: http://docs.redhat.com/docs/en-US/Red_Hat_Enterprise_Linux/5/html/Virtualization/index.html (As of February 2012)

 Example
. . . .
Check that the following parameter in the VM host, defining the minimum amount of memory to reserve, is described along a format.

(dom0-min-mem *Memory_capacity*)
. . . .

4.5 Operations for Images or Cloning Images

After Collection of Images Fails, Images Not Registered in the Image Pool Remain on VM Management Software.

[Description]

When image creation fails due to the following problems during image collection, images which are not registered in the image pool may remain on VM management software. In this case, the following messages will be output in the event log.

- Occurred Problems

    - System failure, or reboot of the admin server or manager

    - Server switchover in which managers are operating using the HA function of cluster software or server virtualization software

- Messages

    - FJSVrcx:ERROR:61143:creating cloning image:failed

    - FJSVrcx:ERROR:67397:failed to create image. detail=(clone *VM_guest_name*:task result error,vmerrno=104,ip=*IP_address*)

    - FJSVrcx:ERROR:67397:failed to create image. detail=(*Message*,vmerrno=104,ip=*IP_address*,host=*VM_host_IP_address*)

    - FJSVrcx:ERROR:67397:failed to create image. detail=(PowerShell script execution error : create_image:create image failed. See details in the job result in System Center Virtual Machine Manager.,vmerrno=518,ip=*IP_address*,host=*VM_host_IP_address*)

For details on these messages, refer to "Message number 67397" in this manual, and "Message number 61143" in the "Messages VE".

[Corrective Action]

Make sure that the manager is running, and use the following procedure for restoration:

1. Check the resource name related to the error message above with the event log on the ROR console. The image name is displayed for the resource name of "Message number 61143" in the "Messages VE".

2. Wait until a "Message number 21161" containing the image name confirmed in 1. is output in the event log. This message displays the image name and generation.

3. Display the VM management console and check if the image of *Image_name@ Version* exists.

4. If there was an image in 3., delete it from the VM management console.

   For details on how to delete images, refer to the server virtualization software manual.

5. Wait until a "Message number 21162" containing the image name deleted in 4. is output in the event log. After that, perform the collection of the image again.

When Collecting a Cloning Image, "Message number 21161" or "Message number 21162" is Displayed.

[Description]

When collection of a cloning image is performed for an L-Server with the virtual L-Server of the Hyper-V VM type, one of the following messages may be output in the event log.

The VM guest name whose name starts with "!temp_ror" is displayed for *obj*.

- FJSVrcx:INFO:21161:obj:VM guest is detected.

- FJSVrcx:INFO:21162:obj:VM guest is lost.

For details on the messages, refer to "Message number 21161" and "Message number 21162".

[Corrective Action]

No action is necessary.

When Creation of an L-Server Specifying Images Fails and "Message number 67390" is Displayed.

[Description]

Creation of an L-Server specifying images fails, and the following message is output.

FJSVrcx:ERROR:67390:creating VM guest failed. detail=(customize *VM_guest_name*:task result error,vmerrno=104,ip=*IP_address*)

For details on the message, refer to "Message number 67390".

[Corrective Action]

The OS type specified for images when creating L-Servers and the OS type of the installed OS may be different.

The OS type for images is inherited from the L-Server that is the source of image collection. Check if the OS type of the L-Server that is the source of collection and the installed OS type are the same.

If the OS types are not the same, collect images again after configuring the correct OS type of L-Server as the source for collection, and create an L-Server.

However, the type of OS for an L-Server created specifying images cannot be changed. When the OS type of the L-Server cannot be changed, use server virtualization software to collect images again after configuring the correct OS type for the VM guest, and then create the L-Server.

Delete collected images that have the wrong configurations.

For details on how to change the OS type of an L-Server, refer to "11.2.1 Modifying Specifications" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

For details on how to change the OS types of VM guests using server virtualization software, refer to the server virtualization software manual.

When Collecting a Cloning Image on an L-Server with the VM Type "RHEL-Xen","Message number 67999" is Displayed, and Cloning Image Collection may Fail.

[Description]

When collecting a cloning image on an L-Server with the VM Type "RHEL-Xen", the following message is displayed, and cloning image collection may fail.

```
FJSVrcx:ERROR:67999:internal error, database conflict
```

[Corrective Action]

The character string specified for the -name option when collecting the cloning image may exceed the specifiable number of characters. Specify the name correctly and perform the operation again.

For details on the -name option, refer to "1.4.1 rcxadm image".

4.6 Operations for Snapshots

After Collection of Images Fails, Snapshots Which Cannot be Referred to or Operated from Resource Orchestrator Remain on VM Management Software.

[Description]

Even if snapshot collection fails due to problems other than those involving VM management software, such as the manager stopping, collected snapshots may exist on VM management software.

[Corrective Action]

Start the manager, ensure that the collection of snapshots has been completed, and then use the following procedure for restoration:

1. Display the VM management console and check if there are multiple snapshots whose *L-Server_host_name* and *Version* are the same among the snapshots whose name is RCX_*L-Server_host_name@ Version*.

2. If there were multiple snapshots in 1., delete snapshots other than latest ones from the VM management console.

   For details on how to delete snapshots, refer to the server virtualization software manual.

When Restarting vCenter Server Services, Snapshots of L-Server may not be Managed.

[Description]

When restarting services of vCenter Server registered as VM management software, L-Server snapshots using the vCenter Server may no longer be managed by Resource Orchestrator.

```
FJSVrcx:INFO:21162:(version=version):snapshot image is lost.
```

The version of the snapshot which is not managed is displayed in *version*.

The snapshot identification information notified by vCenter Server before and after restarting of the vCenter Server services may differ. Therefore, Resource Orchestrator determines that the snapshots are no longer managed by vCenter Server, and deletes the snapshot identification information. Snapshots which are not managed by Resource Orchestrator cannot be recognized. However, snapshots exist on vCenter Server.

[Corrective Action]

Operate snapshots which cannot be recognized from the vSphere Client (GUI for vCenter Server). When operation is not possible, contact your vCenter Server administrator.

To determine the relevant snapshots, check VM guest snapshots managed by the vCenter Server which had its services restarted. Snapshots created by Resource Orchestrator are named as follows: Snapshots with names in this format that are not recognized by Resource Orchestrator are the relevant snapshots.

```
RCX_L-Server_host_name@version
```

L-Server_host_name: a host name for the L-Server which holds relevant snapshots is displayed.
The version of the snapshot displayed in the message is displayed in *version*.

Delete unnecessary snapshots from vSphere Client.

4.7 Operations for VM Management Software or Server Virtualization Software

"Message number 21162" is Displayed When the Configuration of the Server Virtualization Software (VMware) is Changed.

[Description]

In environments where VMware vCenter Server is registered as the VM management software, the message below is output and the cloning image is deleted if you delete a VM host from VMware vCenter Server.

```
FJSVrcx:INFO:21162:image(version=version):cloning image is lost.
```

For details on the message, refer to "Message number 21162".

[Corrective Action]

- Refer to the server virtualization software manual for how to restore the L-Server template. Next, check whether the following message is output:

```
FJSVrcx:INFO:21161:image(version=version):cloning image is detected.
```

- If the cloning images were registered in a resource pool, refer to "1.3.8 rcxadm pool" to register each cloning image in a resource pool.

    Example Command

    ```
    >rcxadm pool register -name ImagePool -resource master_image -type vm_image <RETURN>
    ```

- If the cloning image was being used with an L-Server, refer to "1.3.1 rcxadm lserver" to modify the L-Server. Use the following format when specifying the XML file:

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server_name">
    <ServerImageLink name="Cloning_image_name" version="Version"/>
  </LServer>
</Resources>
```

📘 Example

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server1">
    <ServerImageLink name="master_image" version="3" />
  </LServer>
</Resources>
```

Example Command

> **>rcxadm lserver modify -name L-Server1 -file c:\temp\modify.xml** <RETURN>

When Job Cancellation or Timeout Occurs on VM Management Software, Collection of Cloning Images Fails and VM Guests in the Process of Being Copied Remain on the VM Management Software.

[Description]

During cloning image collection, if job cancellation or timeout occurs on the VM management software, one of the following messages will be output in the event log, and cloning image collection may fail.

> FJSVrcx:ERROR:67397:failed to create image. detail=(PowerShell script execution error : create_image:duplicate vmguest failed. See details in the job result in System Center Virtual Machine Manager.,vmerrno=516,ip=*IP_address*,host=*VM_host_IP_address*)

For details on the message, refer to "Message number 67397".

When the message above is output, VM guests in process of being copied may remain on VM management software.

[Corrective Action]

Use the following procedure to perform recovery.

1. Display the VM management console, and check if a VM guest whose name starts with "!temp_ror" exists.

2. If there is a VM guest that meets the condition in 1., delete it from the VM management console. For details on how to delete VM guests, refer to the server virtualization software manual.

3. Collect cloning images again.

When Server Switchover is Performed Using Redundancy Software of the Admin Server, Creation of L-Servers Fails, and Incomplete VM Guests will Remain on Server Virtualization Software.

[Description]

This event occurs at the same time as "When System Failure Occurs on the Admin Server or Manager, or Job Cancellation or Timeout Occurs on the VM Management Software, Creating or Starting the L-Server Fails, and VM Guests in the Process of Being Created Using Server Virtualization Software Remain.".

[Corrective Action]

For details on corrective actions, refer to "When System Failure Occurs on the Admin Server or Manager, or Job Cancellation or Timeout Occurs on the VM Management Software, Creating or Starting the L-Server Fails, and VM Guests in the Process of Being Created Using Server Virtualization Software Remain.".

Operation may not Complete due to Rebooting of a VM Host (Admin OS) or Communication Failure. [Xen] [KVM]

[Description]

When a VM host (Admin OS) is rebooted using reboot or panic, or when communication failure occurs between the manager of Resource Orchestrator and VM host, the following operations may not be completed:

- Creating and deleting an L-Server

- Moving L-Servers between servers (migration)

- Collecting cloning images

[Corrective Action]

Restart the Resource Orchestrator manager.

4.8 Operations for the ROR Console

On the ROR Console, the Values on the [Resource List] tab are "?", and on other tabs, "There is no information to display." is Displayed.

[Description]

In the following cases, on the ROR console, the values of resources on the [Resource List] tab will be "?", and on the other tabs, "There is no information to display." is displayed.

- When a user who has had all of their access scope settings deleted logs in to the ROR console

- When a user who has had all of the resources in their set access scope deleted logs in to the ROR console

- When the access scope settings of a user are all deleted while the user is logged in to the ROR console

- When all the resources in the access scope settings of a user are all deleted while the user is logged in to the ROR console

📋 Example

•••

Example of Panel Display Trouble

- [Resource List] tab
  The values of resources will be "?".

- Other tabs
  "There is no information to display." is displayed.

•••

[Corrective Action]

Log off from the ROR console as the relevant user, then configure the range of the access for the user so that the relevant resources exist. Log in to the ROR console again and the information is displayed correctly.

For details on the access scope settings, refer to "Appendix B Access Control by Roles" in the "Operation Guide CE".

On the ROR Console, When Clicking <OK> Repeatedly, the Same Definition is Added across Multiple Lines.

[Description]

On the ROR console, when <OK> is clicked repeatedly, the same definition may be added across multiple lines on the screen.

- When <OK> is clicked repeatedly in the [Disk Definitions] dialog. This dialog is displayed from the [Disk] tab in the [Create an L-Server] dialog or the [Modify L-Server's definition] dialog

- When <OK> is clicked repeatedly in the [Add a NIC] dialog. This dialog is displayed from the [Network] tab in the [Create an L-Server] dialog or in the [Modify L-Server's definition] dialog

- When <OK> is clicked repeatedly in the [Excluded IP Setting] dialog. This dialog is displayed from the [Create a network resource] dialog or the [Modify a network resource] dialog

[Corrective Action]

When unnecessary definitions are added, delete them from the dialog using the following procedure.

- For the [Disk] tab in the [Create an L-Server] dialog or in the [Modify L-Server's definition] dialog

    1. Select the radio button corresponding to the unnecessary disk definitions.

    2. Click <Delete>.

        The unnecessary definitions are deleted.

- For the [Network] tab in the [Create an L-Server] dialog or in the [Modify L-Server's definition] dialog

    Clicking <Delete> deletes the unnecessary definitions.

- For the [Create a network resource] dialog or the [Modify a network resource] dialog

    1. Select the unnecessary definitions from the "Exclusion IP range" list.

    2. Click <Delete>.

        The unnecessary definitions are deleted.

When Cookies Stored in a Web Browser Displaying the ROR Console are Deleted, the Screen Layout may Collapse, or the Error Dialog "ERROR,Establishing connection with admin server failed." may be Displayed.

[Description]

When using a web browser while logged in to the ROR console, if the cookies stored in the browser are deleted, the session information (such as user IDs) of the ROR console contained in the cookies also deleted.

As a result, the screen layout may collapse, or the error dialog "Establishing connection with admin server failed." may be displayed.

[Corrective Action]

Perform the following corrective actions:

    1. Press F5, or click <Refresh> on the web browser.

    2. Log in again from the Login window.
       The ROR console is displayed.

When Restarting a Manager or Admin Server, the Recent Operations on the ROR Console may Display Completed for all Operations Including the Operation Being Executed.

[Description]

When restarting a manager or admin server, the Recent Operations on the ROR console may display Completed for all operations including the operation being executed.

As a result, operations in the completed state may output the following message and abort.

FJSVrcx:ERROR:67210:*Resource_name*:is busy

[Corrective Action]

Since there is no way to check the progress of ongoing processes displayed as Completed, restart the manager or admin server, wait for a short time, and then perform the operation again.

When Hiding Displayed Resource Information in the [Resource] Tab of the ROR Console, after a Certain Length of time (after Regular Update of Resources), the Display of Resource Information that was Updated may Collapse.

[Description]

While updating the window of the [Resource] tab of the ROR console, if resource information is hidden or another tab switched to, update will continue to be performed for the hidden area.

At that time, because the Web browser cannot handle modification of the size of the window being updated or the coordinate information, after a certain length of time (after regular update of resources), the display of resource information that was updated may collapse.

[Corrective Action]

Perform the following corrective actions:

- When there is update information for resources

    Update will be performed automatically during the regular update.

- When there is no update information for resources

  Click the page switch button of the resource information.

- When there is no update information for resources, and no page switch button for the resource information

  Select a different resource from the tree.

When the Last Page of the List is Displayed in the ROR Console, the List may not Actually Display Anything.

[Description]

In the [Resource] tab of the ROR console, if a resource is deleted when displaying the last page of the list in the main panel, nothing may be shown in the list.

[Corrective Action]

Perform the following corrective actions:

- Select another resource on the tree

- Switch to a different tab in the main panel

The Member Ports of the Link Aggregation may not be Updated even when "Update" is Clicked for the LAN Switch Blade in the Server Resource Tree of the ROR Console.

[Description]

For a PY CB Eth Switch/IBP 10Gbps 18/8 LAN switch blade, the LLDP and VLAN settings of the member ports of the link aggregation may mean that the information for the member ports of the link aggregation will not be updated.

[Corrective Action]

Perform the following corrective actions:

1. LLDP settings of the member ports belonging to the link aggregation
   Enable the LLDP of the member port.
   When doing so, disable the "VLAN Name" in the LLDP options, and enable the other items.

2. VLAN settings of the member ports belonging to the link aggregation
   Make the Untagged VLAN and Tagged VLAN settings for all member ports belonging to the link aggregation the same.

3. Click the "Update" button of the LAN switch blade on the server resource tree in the ROR console.

Chapter 5 Script Execution when Operating L-Servers

This section explains the function for executing scripts, created and deployed in advance by users, before and after operations where the following operations are executed for L-Servers using the GUI or a command.

- Creating an L-Server

- Deleting an L-Server

- Turning the Power ON

- Turning the Power OFF

- Modifying the Status

5.1 Usage Method of Scripts

The usage method of scripts is shown below.

- Creating scripts describing details to execute before and after operations
  For details on script format, refer to "5.2 Script Format".

- Executing scripts describing details to execute before and after operations
  For details on advisory notes for script usage, refer to "5.3 Advisory Notes for Script Usage".

5.2 Script Format

Create scripts in the following format.

Storage Location of Scripts

> [Windows]
> *Installation_folder*\Manager\etc\user_scripts
>
> [Linux]
> /etc/opt/FJSVrcvmr/user_scripts

Script Name

> *Execution_order_resource_name_execution_timing-arbitrary_line*.extension

Script Format

> Specify as follows:

Table 5.1 List of Items Specified in Scripts

Items	Content of Description
Execution order	Describe the script execution order. Specify a two-digit integer. When specifying the same execution order in multiple scripts, the order is not guaranteed.
Resource name	For details on resource names, refer to "Names of Resources and Operations which are the Targets of Script Startup before and after Operations".

Execution timing	When executing scripts either before or after operations start, specify as follows:
	
	- Before operations
	
	  pre_*operation name*
	
	- After operations
	
	  post_*operation name*
	
	For details on operation names, refer to "Names of Resources and Operations which are the Targets of Script Startup before and after Operations".

Items	Content of Description
Arbitrary character string (optional)	Specify the arbitrary character string without using blank spaces.
	Any characters except blank spaces can be used for the filename, and its length can be up to the maximum character string length supported by the OS.
	When deploying multiple scripts for the same operation, users can specify a character string to distinguish the usage of the script.
Extension	[Windows] A format which can be directly executed from the command line.
	[Linux] Privileges for execution must be given.

💡 Example

. . . .

- Name of script for operations after creating an L-Server

  01_lserver_post_create-sample.bat

- Name of script for operations before stopping an L-Server

  00_lserver_pre_start.sh

. . . .

Names of Resources and Operations which are the Targets of Script Startup before and after Operations

The names of resources and operations which are the targets of script startup before and after operations are as follows:

Table 5.2 Names of Resources and Operations which are the Targets of Script Startup before and after Operations

Resource Name	Operation Name	
lserver (common to physical L-Servers and virtual L-Servers)	Creating an L-Server	create
	Deleting an L-Server	delete
	Starting an L-Server	start
	Stopping an L-Server	stop

Exit Status

This command returns the following statuses:

0

　　The command executed successfully.

non-zero

　　An error has occurred.

Standard Output and Errors

Standard output and errors are output in the following folders:

[Windows]
Installation_folder\Manager\var\script_log

[Linux]
/opt/FJSVrcvmr/var/script_log

Standard output and errors are output in the folders with the following names:

- Standard Output

  Output_date_script_name_stdout.txt

- Standard Error

  Output_date_script_name_stderr.txt

Temporary Files

Scripts are used to output information as temporary files when events occur.
For details on output data, refer to "Table 5.3 Meanings and Values of Variables".

Storage Location of Temporary Files

[Windows]
Installation_folder\Manager\var\tmp\rcxtempfile

[Linux]
/opt/FJSVrcvmr/var/tmp/rcxtempfile

File Name of Temporary Files

Execution timing.tmp.xx.xx

The file name above with the full path name is created as the first argument.

The scripts created by users are executed at the timing when a file name is described.

Temporary File Format

The information which user scripts will receive is as follows:

Format

Temporary files are output in the following format.

> *Variable name*=
> *Value*

Line break codes are as follows:

[Windows]
CR+LF

[Linux]
LF

The meanings and values of variables are as follows:

Table 5.3 Meanings and Values of Variables

Variable	Meaning	Value
EVENT	Character string displayed in the event column of ROR console when an event occurs	Character string enclosed by double quotes (")
PROGRESS	Timing at which an event occurs	- Before operations "Started" - After operations

Variable	Meaning	Value
		"Completed" - When a task ends in an error "Error"
TASK_ID	Task ID which is the target of operation	Character string enclosed by double quotes (") When the operation target is not a task: ""
RESOURCE_NAME	Name of the resource which is the target of operation	Character string enclosed by double quotes (")
RESOURCE_TYPE	Type of the resource which is the target of operation	Character string enclosed by double quotes (")
RESOURCE_ID	ID of the resource which is the target of operation	Character string enclosed by double quotes (")
TENANT_NAME	Name of the tenant which is the target of operation	Character string enclosed by double quotes (") When not belonging to a tenant: ""
TENANT_ID	ID of the tenant which is the target of operation	Character string enclosed by double quotes (") When not belonging to a tenant: "-"
TIME	Time an event occurred	*YYYY-MM-DD HH:MM:SS*
CLIENT_IP	IP address of the client executing an operation	*XX.XX.XX.XX*
USER_ID	ID of the user executing an operation	Character string enclosed by double quotes (") When the command is executed by the special administrator: ""
USER_NAME	Name of the user executing an operation	Character string enclosed by double quotes (") When the command is executed by the special administrator: ""
USER_GROUP_ID	User group ID	Character string enclosed by double quotes (") When the operation target is not a task: "" The user does not belong to a group: ""
USER_GROUP_NAME	User group name	Character string enclosed by double quotes (") - When the operation target is not a task: "" - When the user does not belong to a group: ""

5.3 Advisory Notes for Script Usage

Advisory notes for script usage are given below.

- A prerequisite for the use of scripts is operational checks by the user. This function does not check the validity of the user script itself.

- Any trouble occurring from execution of scripts is the responsibility of the user.

- When an operation is stopped due to an error, scripts after that operation will not be executed.
  If an error caused by something other than Resource Orchestrator, such as a connection failure with integrated software, occurs, scripts after that operation may be executed. In that case, PROGRESS="Error" is output.

- When a manager is restarted during an operation, scripts from before that operation will be executed again.

- During the script execution, the operation is not recovered if the status is as follows: Search for the relevant process using the Task Manager (for Windows) or the ps command (for Linux), and then manually stop the script.

    - When the script before operations is not recovered

        - Recent operations have not progressed from 0%

        - FJSVrcx:INFO:21164:*Script name*:script execution started event log is output

        - FJSVrcx:INFO:21165:*Script name*:script execution completed or JSVrcx:ERROR:61195: *Script name*:script error (return value = value) event log is not output

    - When the script after operations is not recovered

        - FJSVrcx:INFO:21164:*Script name*:script execution started event log is output

        - FJSVrcx:INFO:21165:*Script name*:script execution completed or JSVrcx:ERROR:61195: *Script name*:script error (return value = value) event log is not output

Appendix A GUI/CLI

This appendix provides references for operation using the GUI/CLI based on functions.

Table A.1 L-Server

Function	Operations	
	GUI	CLI
Creating an L-Server	"10.1 Creation Using an L-Server Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" create
Deleting an L-Server	"11.4 Deleting an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" delete
Modifying basic information	"11.2.2 Modifying the Basic Information" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" modify
Modifying specifications	"11.2.1 Modifying Specifications" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" modify
Viewing lists	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab in the orchestration tree. Displays only an L-Server in the selected resource folder, when a resource folder is selected.	"1.3.1 rcxadm lserver" list
Viewing detailed information	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the orchestration tree.	"1.3.1 rcxadm lserver" show
- Attaching Disks - Detaching Disks	"11.2.3 Attaching and Detaching Disks" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" attach "1.3.1 rcxadm lserver" detach
Starting an L-Server	"11.1.1 Starting an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" start
Stopping an L-Server	"11.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" stop
Restarting an L-Server	"11.1.3 Restarting an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" restart
Migration of L-Servers between servers	"11.7 Migration of VM Hosts between Servers" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.1 rcxadm lserver" migrate
Snapshot collection (Virtual servers only)	"11.6.1 Snapshot" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.4.1 rcxadm image" snapshot

Function	Operations	
	GUI	CLI
Snapshot restoration (Virtual servers only)	"11.6.1 Snapshot" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.4.1 rcxadm image" restore
Snapshot deletion (Virtual servers only)	"11.6.1 Snapshot" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.4.1 rcxadm image" delete
System image backup (Physical servers)	"11.6.2 Backup and Restore" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" backup in the "Command Reference"
System image restoration (Physical servers)	"11.6.2 Backup and Restore" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" restore in the "Command Reference"

Changing physical server usage	"11.9 Changing Physical Server Usage" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"
	
	When only the configuration definition is created
	- Settings
	  "10.1 Creation Using an L-Server Template" or "10.2.1 [General] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"
	- Operations
	  "11.1.1 Starting an L-Server" and "11.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"
	When resources are already allocated
	- Settings
	  - First L-Server
	    "10.1 Creation Using an L-Server Template" or "10.2.1 [General] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"
	  - Modifications
	    "10.1 Creation Using an L-Server Template" or "10.2.1 [General] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"
	    "11.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"
	- Operations
	  "11.1.1 Starting an L-Server" and "11.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"
		When only the configuration definition is created
		- Settings
		  "1.3.1 rcxadm lserver" create
		- Operations
		  "1.3.1 rcxadm lserver" start
		  "1.3.1 rcxadm lserver" stop
		When resources are already allocated
		- Settings
		  - First L-Server
		    "1.3.1 rcxadm lserver" create
		  - Modifications
		    "1.3.1 rcxadm lserver" create
		    "1.3.1 rcxadm lserver" stop
		- Operations
		  "1.3.1 rcxadm lserver" start
		  "1.3.1 rcxadm lserver" stop

Function	Operations	
	GUI	CLI
Server redundancy (HA) (Server switchover for physical servers)	"10.2.2 [Server] Tab" or "10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"2.2 L-Server Template" and "2.3 L-Servers"
Positioning (Virtual servers only)	"10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"2.2 L-Server Template" and "2.3 L-Servers"
Exclusion (Virtual servers only)	"10.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"2.3 L-Servers"
Collecting cloning images	"11.5.1 Collecting and Registering Cloning Images" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.4.1 rcxadm image" create
Deleting cloning images	"11.5.4 Deleting a Cloning Image" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.4.1 rcxadm image" delete
Viewing cloning images	"11.5.2 Viewing a Cloning Image" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.4.1 rcxadm image" list

Table A.2 Resource Pool

Function	Operations	
	GUI	CLI
Creating resource pools	"12.2 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.8 rcxadm pool" create
Viewing lists	"12.4 Viewing a Resource Pool" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab.	"1.3.8 rcxadm pool" list
Viewing detailed information	"12.4 Viewing a Resource Pool" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab.	"1.3.8 rcxadm pool" show
Registering resources	"12.3 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.8 rcxadm pool" register
Releasing resource registration	"12.3 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.8 rcxadm pool" unregister

Modification
 	
  - Name
 	
  - Label
 	
  - Comment
 	
  - Priority
	"12.2 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.8 rcxadm pool" modify

Function	Operations	
	GUI	CLI
Moving resource pools	"12.2 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.8 rcxadm pool" move
Deleting resource pools	"12.2 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.8 rcxadm pool" delete
Viewing available pools	"12.4 Viewing a Resource Pool" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Available Pool] tab.	The same type of information can be obtained by combining commands. - Resource pool list "1.3.8 rcxadm pool" list - Resource lists under resource pools "1.3.8 rcxadm pool" list -name *name*
Max. number of possible L-Servers View	"12.4 Viewing a Resource Pool" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.8 rcxadm pool" list -name *name* -template *template_name*

Table A.3 Resource Folder

Function	Operations	
	GUI	CLI
Creating resource folders	"13.2.1 Creating a Resource Folder" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.9 rcxadm folder" create
Viewing lists	"13.2.2 Viewing a Resource Folder" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab.	"1.3.9 rcxadm folder" list
Viewing detailed information	"13.2.2 Viewing a Resource Folder" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab.	"1.3.9 rcxadm folder" show
Modification - Name - Label - Comment - Priority	"13.2.3 Modifying the Basic Information" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.9 rcxadm folder" modify
Moving resource folders	"13.2.6 Moving Resource Folders" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.9 rcxadm folder" move
Deleting resource folders	"13.2.4 Deleting Resource Folders" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.9 rcxadm folder" delete

Table A.4 Physical Storage Unit Resources

Function	Operations	
	GUI	CLI
Viewing lists	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab in the storage tree.	"1.3.3 rcxadm storage" list
Viewing detailed information	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the storage tree.	"1.3.3 rcxadm storage" show
Modification - Label - Comment	-	"1.3.3 rcxadm storage" modify

-: Not supported

Table A.5 Virtual Storage Resources (RAID Groups, Aggregates, and VMFS)

Function	Operations	
	GUI	CLI
Creating resources	-	-
Viewing lists	Operate using the [Resource List] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE", or the [Resource List] tab of the storage tree.	"1.3.2 rcxadm vstorage" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE", or the [Resource Details] tab of the storage tree.	"1.3.2 rcxadm vstorage" show
Moving virtual storage resources to specified resource pools	"12.3 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.2 rcxadm vstorage" move
Modification - Label - Comment	"12.3 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.2 rcxadm vstorage" modify

-: Not supported

Table A.6 Disk Resources (LUN, FlexVol, Virtual disks)

Function	Operations	
	GUI	CLI
Creating resources	-	-
Viewing lists	Operate using the [Resource List] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide	"1.3.4 rcxadm disk" list

Function	Operations	
	GUI	CLI
	for Infrastructure Administrators (Resource Management) CE", or the [Resource List] tab of the storage tree.	
Viewing detailed information	Operate using the [Resource Details] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE", or the [Resource Details] tab of the storage tree.	"1.3.4 rcxadm disk" show
Modification - Label - Comment	"12.3 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.4 rcxadm disk" modify
Deleting disk resources	-	-

-: Not supported

Table A.7 Storage Management Software

Function	Operations	
	GUI	CLI
Registration	-	"1.7.1 rcxadm storagemgr" register
Viewing lists	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab in the storage tree.	"1.7.1 rcxadm storagemgr" list
Viewing detailed information	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the storage tree.	"1.7.1 rcxadm storagemgr" show
Unregistration	-	"1.7.1 rcxadm storagemgr" unregister
Modification - Label - Comment - IP address - Port number - User name - Password	-	"1.7.1 rcxadm storagemgr" modify

-: Not supported

Table A.8 VM Management Software

Function	Operations	
	GUI	CLI
Registration	"2.2 Registering VM Management Software" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	-
Viewing lists	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab in the management software tree.	"1.7.3 rcxadm vmmgr" list
Viewing detailed information	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the management software tree.	"1.7.3 rcxadm vmmgr" show
Deleting VM management software	"5.6 Deleting VM Management Software" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	-

Modification
 	
  - Positioning
  - IP address
  - User name
  - Password
	"3.8 Changing VM Management Software Settings" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	-

-: Not supported

Table A.9 Network Resources

Function	Operations	
	GUI	CLI
- Creating resources - Registering resources in resource pools	"7.3 Network Resources" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.5 rcxadm network" create
Viewing lists	Operate using the [Resource List] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.5 rcxadm network" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.5 rcxadm network" show
Moving network resources to specified resource pools	"12.3 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.5 rcxadm network" move
Deleting network resources	"12.3 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.3.5 rcxadm network" delete

Table A.10 Address Set Resources

Function	Operations	
	GUI	CLI
- Creating resources - Registering resources in resource pools	-	"1.3.10 rcxadm addrset" create
Viewing lists	Operate using the [Resource List] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.10 rcxadm addrset" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "12.4 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.10 rcxadm addrset" show
Moving address pools to specified resource folders	-	"1.3.10 rcxadm addrset" move
Deleting address set resources	-	"1.3.10 rcxadm addrset" delete

-: Not supported

Table A.11 User Accounts

Function	Operations	
	GUI	CLI
Registration	"9.1 Registering User Accounts" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.1 rcxadm user" create
Viewing lists	"9.2 Viewing a User Account" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.1 rcxadm user" list
Viewing detailed information	"9.2 Viewing a User Account" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.1 rcxadm user" show
Modification - User ID - Label - Comment - User groups - Password - Operations and access scope	"9.3 Modifying a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.1 rcxadm user" modify
Deleting user accounts	"9.4 Deleting a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.1 rcxadm user" delete

Table A.12 User Groups

Function	Operations	
	GUI	CLI
Creating user groups	"15.1 Creating a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.2 rcxadm usergroup" create
Viewing lists	"15.2 Viewing a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.2 rcxadm usergroup" list
Viewing detailed information	"15.2 Viewing a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.2 rcxadm usergroup" show
Modification - User ID - Label - Comment - User groups - Password - Operations and access scope	"15.3 Modifying a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.2 rcxadm usergroup" modify
Deleting user groups	"15.4 Deleting a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.6.2 rcxadm usergroup" delete

Table A.13 L-Server Template

Function	Operations	
	GUI	CLI
Import	"8.2.3 Importing a Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.5.1 rcxadm template" import
Edit	-	-
Export	"8.2.1 Exporting a Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.5.1 rcxadm template" export
Deleting L-Server templates	"8.1.5 Deleting a Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"1.5.1 rcxadm template" delete
Modification - Name - Label - Comment	-	"1.5.1 rcxadm template" modify
Viewing lists	"1.1 ROR Console Layout" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Template List] tab in the orchestration tree.	"1.5.1 rcxadm template" list

Function	Operations	
	GUI	CLI
Viewing detailed information	-	"1.5.1 rcxadm template" show

-: Not supported

Table A.14 Directory Service Operations for User Authentication

Function	Operations	
	GUI	CLI
Registration	-	"1.7.10 rcxadm authctl" register
Changing directory service connection information	-	"1.7.10 rcxadm authctl" modify
Viewing detailed information	-	"1.7.10 rcxadm authctl" show
Unregistration	-	"1.7.10 rcxadm authctl" unregister
Migrating the information from a directory service on upgrade	-	"1.7.10 rcxadm authctl" export

-: Not supported

Table A.15 Server NIC Definitions

Function	Operations	
	GUI	CLI
Viewing lists	-	"1.7.16 rcxadm nicdefctl" list
Viewing detailed information	-	"1.7.16 rcxadm nicdefctl" show
Reflecting server NIC definitions	-	"1.7.16 rcxadm nicdefctl" commit

-: Not supported

Table A.16 Network Devices

Function	Operations	
	GUI	CLI
Creating network devices	-	"1.3.6 rcxadm netdevice" create
Viewing lists	Operate using the [Resource List] tab explained in "1.5.1 [Resource List] Tab" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.6 rcxadm netdevice" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "1.5.2 [Resource Details] Tab" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.6 rcxadm netdevice" show
Modifying basic information	-	"1.3.6 rcxadm netdevice" modify
Deleting network devices	-	"1.3.6 rcxadm netdevice" delete
- Maintenance mode settings	-	"1.3.6 rcxadm netdevice" set

Function	Operations	
	GUI	CLI
- Auto-configuration availability settings	-	
Import	-	"1.3.7 rcxadm netconfig" import
Export	-	"1.3.7 rcxadm netconfig" export

-: Not supported

Table A.17 Firewall

Function	Operations	
	GUI	CLI
Viewing lists	Operate using the [Resource List] tab explained in "1.5.1 [Resource List] Tab" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.14 rcxadm firewall" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "1.5.2 [Resource Details] Tab" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"1.3.14 rcxadm firewall" show
Viewing ruleset detailed information	Operate using the [Resource Details] tab explained in "1.5.2 [Resource Details] Tab" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	-

-: Not supported

Glossary

access path

A logical path configured to enable access to storage volumes from servers.

active mode

The state where a managed server is performing operations.

Managed servers must be in active mode in order to use Auto-Recovery.

Move managed servers to maintenance mode in order to perform backup or restoration of system images, or collection or deployment of cloning images.

active server

A physical server that is currently operating.

admin client

A terminal (PC) connected to an admin server, which is used to operate the GUI.

admin LAN

A LAN used to manage resources from admin servers.

It connects managed servers, storage, and network devices.

admin server

A server used to operate the manager software of Resource Orchestrator.

affinity group

A grouping of the storage volumes allocated to servers. A function of ETERNUS.

Equivalent to the LUN mapping of EMC.

agent

The section (program) of Resource Orchestrator that operates on managed servers.

aggregate

A unit for managing storage created through the aggregation of a RAID group.

Aggregates can contain multiple FlexVols.

alias name

A name set for each ETERNUS LUN to distinguish the different ETERNUS LUNs.

Auto Deploy

A function for deploying VMware ESXi5.0 to servers using the PXE boot mechanism.

Automatic Storage Layering

A function that optimizes perform and cost by automatically rearranging data in storage units based on the frequency of access.

Auto-Recovery

A function which continues operations by automatically switching over the system image of a failed server to a spare server and restarting it in the event of server failure.

This function can be used when managed servers are in a local boot configuration, SAN boot configuration, or a configuration such as iSCSI boot where booting is performed from a disk on a network.

- When using a local boot configuration

  The system is recovered by restoring a backup of the system image of the failed server onto a spare server.

- When booting from a SAN or a disk on a LAN

  The system is restored by having the spare server inherit the system image on the storage.
  Also, when a VLAN is set for the public LAN of a managed server, the VLAN settings of adjacent LAN switches are automatically switched to those of the spare server.

backup site

An environment prepared in a different location, which is used for data recovery.

BACS (Broadcom Advanced Control Suite)

An integrated GUI application (comprised from applications such as BASP) that creates teams from multiple NICs, and provides functions such as load balancing.

BASP (Broadcom Advanced Server Program)

LAN redundancy software that creates teams of multiple NICs, and provides functions such as load balancing and failover.

blade server

A compact server device with a thin chassis that can contain multiple server blades, and has low power consumption.
As well as server blades, LAN switch blades, management blades, and other components used by multiple server blades can be mounted inside the chassis.

blade type

A server blade type.
Used to distinguish the number of server slots used and servers located in different positions.

BladeViewer

A GUI that displays the status of blade servers in a style similar to a physical view and enables intuitive operation.
BladeViewer can also be used for state monitoring and operation of resources.

BMC (Baseboard Management Controller)

A Remote Management Controller used for remote operation of servers.

boot agent

An OS for disk access that is distributed from the manager to managed servers in order to boot them when the network is started during image operations.

CA (Channel Adapter)

An adapter card that is used as the interface for server HBAs and fibre channel switches, and is mounted on storage devices.

CCM (ETERNUS SF AdvancedCopy Manager Copy Control Module)

This is a module that does not require installation of the ETERNUS SF AdvancedCopy Manager agent on the server that is the source of the backup, but rather uses the advanced copy feature of the ETERNUS disk array to make backups.

chassis

A chassis used to house server blades and partitions.
Sometimes referred to as an enclosure.

cloning

Creation of a copy of a system disk.

cloning image

A backup of a system disk, which does not contain server-specific information (system node name, IP address, etc.), made during cloning.

When deploying a cloning image to the system disk of another server, Resource Orchestrator automatically changes server-specific information to that of the target server.

Cloud Edition

The edition which can be used to provide private cloud environments.

data center

A facility that manages client resources (servers, storage, networks, etc.), and provides internet connections and maintenance/operational services.

directory service

A service for updating and viewing the names (and associated attributes) of physical/logical resource names scattered across networks, based on organizational structures and geographical groups using a systematic (tree-shaped structure) management methodology.

disk resource

The unit for resources to connect to an L-Server. An example being a virtual disk provided by LUN or VM management software.

DN (Distinguished Name)

A name defined as a line of an RDN, which contains an entry representing its corresponding object and higher entry.

Domain

A system that is divided into individual systems using partitioning. Also used to indicate a partition.

DR Option

The option that provides the function for remote switchover of servers or storage in order to perform disaster recovery.

Dual-Role Administrators

The administrators with both infrastructure administrator's and tenant administrator's role.

dynamic LUN mirroring

This is a feature whereby a mirror volume is generated at the remote site when a volume is generated at the local site, and copies are maintained by performing REC.

dynamic memory

A function that optimizes physical memory allocation for virtual machines, depending on their execution status on Hyper-V.

end host mode

This is a mode where the uplink port that can communicate with a downlink port is fixed at one, and communication between uplink ports is blocked.

environmental data

Measured data regarding the external environments of servers managed using Resource Orchestrator.
Measured data includes power data collected from power monitoring targets.

ESC (ETERNUS SF Storage Cruiser)

Software that supports stable operation of multi-vendor storage system environments involving SAN, DAS, or NAS. Provides configuration management, relation management, trouble management, and performance management functions to integrate storage related resources such as ETERNUS.

ETERNUS SF AdvancedCopy Manager

This is storage management software that makes highly reliable and rapid backups, restorations and replications using the advanced copy feature of the ETERNUS disk array.

Express

The edition which provides server registration, monitoring, and visualization.

FC switch (Fibre Channel Switch)

A switch that connects Fibre Channel interfaces and storage devices.

Fibre Channel

A method for connecting computers and peripheral devices and transferring data.

Generally used with servers requiring high-availability, to connect computers and storage systems.

Fibre Channel port

The connector for Fibre Channel interfaces.

When using ETERNUS storage, referred to as an FC-CA port, when using NetApp storage, referred to as an FC port, when using EMC CLARiiON, referred to as an SP port, when using EMC Symmetrix DMX or EMC Symmetrix VMAX, referred to as a DIRECTOR port.

fibre channel switch blade

A fibre channel switch mounted in the chassis of a blade server.

FlexVol

A function that uses aggregates to provide virtual volumes.

Volumes can be created in an instant.

FTRP

The pool for physical disks created by Automatic Storage Layering for ETERNUS.
In Resource Orchestrator, FTRPs are used as virtual storage resources on which Thin Provisioning attributes are configured.

FTV

The virtual volumes created by Automatic Storage Layering for ETERNUS.
In Resource Orchestrator, FTVs are used as disk resources on which Thin Provisioning attributes are configured.

global pool

A resource pool that contains resources that can be used by multiple tenants.
It is located in a different location from the tenants.
By configuring a global pool with the attributes of a tenant, it becomes possible for tenant administrators to use the pool.

GLS (Global Link Services)

Fujitsu network control software that enables high availability networks through the redundancy of network transmission channels.

GSPB (Giga-LAN SAS and PCI_Box Interface Board)

A board which mounts onboard I/O for two partitions and a PCIe (PCI Express) interface for a PCI box.

GUI (Graphical User Interface)

A user interface that displays pictures and icons (pictographic characters), enabling intuitive and easily understandable operation.

HA (High Availability)

The concept of using redundant resources to prevent suspension of system operations due to single problems.

hardware initiator

A controller which issues SCSI commands to request processes.
In iSCSI configurations, NICs fit into this category.

hardware maintenance mode

In the maintenance mode of PRIMEQUEST servers, a state other than Hot System Maintenance.

HBA (Host Bus Adapter)

An adapter for connecting servers and peripheral devices.
Mainly used to refer to the FC HBAs used for connecting storage devices using Fibre Channel technology.

HBA address rename setup service

The service that starts managed servers that use HBA address rename in the event of failure of the admin server.

HBAAR (HBA address rename)

I/O virtualization technology that enables changing of the actual WWN possessed by an HBA.

host affinity

A definition of the server HBA that is set for the CA port of the storage device and the accessible area of storage.
It is a function for association of the Logical Volume inside the storage which is shown to the host (HBA) that also functions as security internal to the storage device.

Hyper-V

Virtualization software from Microsoft Corporation.

Provides a virtualized infrastructure on PC servers, enabling flexible management of operations.

I/O virtualization option

An optional product that is necessary to provide I/O virtualization.
The WWNN address and MAC address provided is guaranteed by Fujitsu Limited to be unique.
Necessary when using HBA address rename.

IBP (Intelligent Blade Panel)

One of operation modes used for PRIMERGY switch blades.
This operation mode can be used for coordination with ServerView Virtual I/O Manager (VIOM), and relations between server blades and switch blades can be easily and safely configured.

ICT governance

A collection of principles and practices that encourage desirable behavior in the use of ICT (Information and Communication Technology) based on an evaluation of the impacts and risks posed in the adoption and application of ICT within an organization or community.

ILOM (Integrated Lights Out Manager)

The name of the Remote Management Controller for SPARC Enterprise T series servers.

image file

A system image or a cloning image. Also a collective term for them both.

infrastructure administrator

A user who manages the resources comprising a data center.

infra_admin is the role that corresponds to the users who manage resources.

Infrastructure administrators manage all of the resources comprising a resource pool (the global pool and local pools), provide tenant administrators with resources, and review applications by tenant users to use resources.

IPMI (Intelligent Platform Management Interface)

IPMI is a set of common interfaces for the hardware that is used to monitor the physical conditions of servers, such as temperature, power voltage, cooling fans, power supply, and chassis.

These functions provide information that enables system management, recovery, and asset management, which in turn leads to reduction of overall TCO.

IQN (iSCSI Qualified Name)

Unique names used for identifying iSCSI initiators and iSCSI targets.

iRMC (integrated Remote Management Controller)

The name of the Remote Management Controller for Fujitsu's PRIMERGY servers.

iSCSI

A standard for using the SCSI protocol over TCP/IP networks.

iSCSI boot

A configuration function that enables the starting and operation of servers via a network.

The OS and applications used to operate servers are stored on iSCSI storage, not the internal disks of servers.

iSCSI storage

Storage that uses an iSCSI connection.

LAG (Link Aggregation Group)

A single logical port created from multiple physical ports using link aggregation.

LAN switch blades

A LAN switch that is mounted in the chassis of a blade server.

LDAP (Lightweight Directory Access Protocol)

A protocol used for accessing Internet standard directories operated using TCP/IP.

LDAP provides functions such as direct searching and viewing of directory services using a web browser.

license

The rights to use specific functions.

Users can use specific functions by purchasing a license for the function and registering it on the manager.

link aggregation

Function used to multiplex multiple ports and use them as a single virtual port.

By using this function, it becomes possible to use a band equal to the total of the bands of all the ports.

Also, if one of the multiplexed ports fails its load can be divided among the other ports, and the overall redundancy of ports improved.

local pool

A resource pool that contains resources that can only be used by a specific tenant.

They are located in tenants.

logical volume

A logical disk that has been divided into multiple partitions.

L-Platform

A resource used for the consolidated operation and management of systems such as multiple-layer systems (Web/AP/DB) comprised of multiple L-Servers, storage, and network devices.

L-Platform template

A template that contains the specifications for servers, storage, network devices, and images that are configured for an L-Platform.

LSB (Logical System Board)

A system board that is allocated a logical number (LSB number) so that it can be recognized from the domain, during domain configuration.

L-Server

A resource defined using the logical specifications (number of CPUs, amount of memory, disk capacity, number of NICs, etc.) of the servers, and storage and network devices connected to those servers.
An abbreviation of Logical Server.

L-Server template

A template that defines the number of CPUs, memory capacity, disk capacity, and other specifications for resources to deploy to an L-Server.

LUN (Logical Unit Number)

A logical unit defined in the channel adapter of a storage unit.

MAC address (Media Access Control address)

A unique identifier that is assigned to Ethernet cards (hardware).

Also referred to as a physical address.

Transmission of data is performed based on this identifier. Described using a combination of the unique identifying numbers managed by/assigned to each maker by the IEEE, and the numbers that each maker assigns to their hardware.

maintenance mode

The state where operations on managed servers are stopped in order to perform maintenance work.
In this state, the backup and restoration of system images and the collection and deployment of cloning images can be performed.
However, when using Auto-Recovery it is necessary to change from this mode to active mode. When in maintenance mode it is not possible to switch over to a spare server if a server fails.

managed server

A collective term referring to a server that is managed as a component of a system.

management blade

A server management unit that has a dedicated CPU and LAN interface, and manages blade servers.
Used for gathering server blade data, failure notification, power control, etc.

Management Board

The PRIMEQUEST system management unit.
Used for gathering information such as failure notification, power control, etc. from chassis.

manager

The section (program) of Resource Orchestrator that operates on admin servers.
It manages and controls resources registered with Resource Orchestrator.

master slot

A slot that is recognized as a server when a server that occupies multiple slots is mounted.

member server

A collective term that refers to a server in a Windows network domain that is not a domain controller.

migration

The migration of a VM guest to a different VM host. The following two types of migration are available:

- Cold migration

  Migration of an inactive (powered-off) VM guest.

- Live migration

  Migration of an active (powered-on) VM guest.

multi-slot server

A server that occupies multiple slots.

NAS (Network Attached Storage)

A collective term for storage that is directly connected to a LAN.

network device

The unit used for registration of network devices.
L2 switches and firewalls fit into this category.

network map

A GUI function for graphically displaying the connection relationships of the servers and LAN switches that compose a network.

network view

A window that displays the connection relationships and status of the wiring of a network map.

NFS (Network File System)

A system that enables the sharing of files over a network in Linux environments.

NIC (Network Interface Card)

An interface used to connect a server to a network.

OS

The OS used by an operating server (a physical OS or VM guest).

overcommit

A function to virtually allocate more resources than the actual amount of resources (CPUs and memory) of a server.
This function is used to enable allocation of more disk resources than are mounted in the target server.

PDU (Power Distribution Unit)

A device for distributing power (such as a power strip).
Resource Orchestrator uses PDUs with current value display functions as Power monitoring devices.

physical LAN segment

A physical LAN that servers are connected to.
Servers are connected to multiple physical LAN segments that are divided based on their purpose (public LANs, backup LANs, etc.).
Physical LAN segments can be divided into multiple network segments using VLAN technology.

physical network adapter

An adapter, such as a LAN, to connect physical servers or VM hosts to a network.

physical OS

An OS that operates directly on a physical server without the use of server virtualization software.

physical server

The same as a "server". Used when it is necessary to distinguish actual servers from virtual servers.

pin-group

This is a group, set with the end host mode, that has at least one uplink port and at least one downlink port.

Pool Master

On Citrix XenServer, it indicates one VM host belonging to a Resource Pool.
It handles setting changes and information collection for the Resource Pool, and also performs operation of the Resource Pool.
For details, refer to the Citrix XenServer manual.

port backup

A function for LAN switches which is also referred to as backup port.

port VLAN

A VLAN in which the ports of a LAN switch are grouped, and each LAN group is treated as a separate LAN.

port zoning

The division of ports of fibre channel switches into zones, and setting of access restrictions between different zones.

power monitoring devices

Devices used by Resource Orchestrator to monitor the amount of power consumed.
PDUs and UPSs with current value display functions fit into this category.

power monitoring targets

Devices from which Resource Orchestrator can collect power consumption data.

pre-configuration

Performing environment configuration for Resource Orchestrator on another separate system.

primary server

The physical server that is switched from when performing server switchover.

primary site

The environment that is usually used by Resource Orchestrator.

private cloud

A private form of cloud computing that provides ICT services exclusively within a corporation or organization.

public LAN

A LAN used for operations by managed servers.
Public LANs are established separately from admin LANs.

rack

A case designed to accommodate equipment such as servers.

rack mount server

A server designed to be mounted in a rack.

RAID (Redundant Arrays of Inexpensive Disks)

Technology that realizes high-speed and highly-reliable storage systems using multiple hard disks.

RAID management tool

Software that monitors disk arrays mounted on PRIMERGY servers.
The RAID management tool differs depending on the model or the OS of PRIMERGY servers.

RDM (Raw Device Mapping)

A function of VMware. This function provides direct access from a VMware virtual machine to a LUN.

RDN (Relative Distinguished Name)

A name used to identify the lower entities of a higher entry.

Each RDN must be unique within the same entry.

Remote Management Controller

A unit used for managing servers.
Used for gathering server data, failure notification, power control, etc.

- For Fujitsu PRIMERGY servers

  iRMC2

- For SPARC Enterprise

  ILOM (T series servers)
  XSCF (M series servers)

- For HP servers

  iLO2 (integrated Lights-Out)

- For Dell/IBM servers

  BMC (Baseboard Management Controller)

Remote Server Management

A PRIMEQUEST feature for managing partitions.

Reserved SB

Indicates the new system board that will be embedded to replace a failed system board if the hardware of a system board embedded in a partition fails and it is necessary to disconnect the failed system board.

resource

General term referring to the logical definition of the hardware (such as servers, storage, and network devices) and software that comprise a system.

resource folder

An arbitrary group of resources.

resource pool

A unit for management of groups of similar resources, such as servers, storage, and network devices.

resource tree

A tree that displays the relationships between the hardware of a server and the OS operating on it using hierarchies.

role

A collection of operations that can be performed.

ROR console

The GUI that enables operation of all functions of Resource Orchestrator.

ruleset

A collection of script lists for performing configuration of network devices, configured as combinations of rules based on the network device, the purpose, and the application.

SAN (Storage Area Network)

A specialized network for connecting servers and storage.

SAN boot

A configuration function that enables the starting and operation of servers via a SAN.

The OS and applications used to operate servers are stored on SAN storage, not the internal disks of servers.

SAN storage

Storage that uses a Fibre Channel connection.

script list

Lists of scripts for the automation of operations such as status and log display, and definition configuration of network devices.
Used to execute multiple scripts in one operation. The scripts listed in a script list are executed in the order that they are listed.
As with individual scripts, they can are created by the infrastructure administrator, and can be customized to meet the needs of tenant administrators.
They are used to configure virtual networks for VLANs on physical networks, in cases where it is necessary to perform auto-configuration of multiple switches at the same time, or to configure the same rules for network devices in redundant configurations.
The script lists contain the scripts used to perform automatic configuration.
There are the following eight types of script lists:

- script lists for setup

- script lists for setup error recovery

- script lists for modification

- script lists for modification error recovery

- script lists for setup (physical server added)

- script lists for setup error recovery (physical server added)

- script lists for deletion (physical server deleted)

- script lists for deletion

server

A computer (operated with one operating system).

server blade

A server blade has the functions of a server integrated into one board.
They are mounted in blade servers.

server management unit

A unit used for managing servers.
A management blade is used for blade servers, and a Remote Management Controller is used for other servers.

server name

The name allocated to a server.

server NIC definition

A definition that describes the method of use for each server's NIC.
For the NICs on a server, it defines which physical LAN segment to connect to.

server virtualization software

Basic software which is operated on a server to enable use of virtual machines. Used to indicate the basic software that operates on a PC server.

ServerView Deployment Manager

Software used to collect and deploy server resources over a network.

ServerView Operations Manager

Software that monitors a server's (PRIMERGY) hardware state, and notifies of errors by way of the network.
ServerView Operations Manager was previously known as ServerView Console.

ServerView RAID

One of the RAID management tools for PRIMERGY.

ServerView Update Manager

This is software that performs jobs such as remote updates of BIOS, firmware, drivers, and hardware monitoring software on servers being managed by ServerView Operations Manager.

ServerView Update Manager Express

Insert the ServerView Suite DVD1 or ServerView Suite Update DVD into the server requiring updating and start it.

This is software that performs batch updates of BIOS, firmware, drivers, and hardware monitoring software.

Single Sign-On

A system among external software which can be used without login operations, after authentication is executed once.

slave slot

A slot that is not recognized as a server when a server that occupies multiple slots is mounted.

SMB (Server Message Block)

A protocol that enables the sharing of files and printers over a network.

SNMP (Simple Network Management Protocol)

A communications protocol to manage (monitor and control) the equipment that is attached to a network.

software initiator

An initiator processed by software using OS functions.

Solaris Container

Solaris server virtualization software.
On Solaris servers, it is possible to configure multiple virtual Solaris servers that are referred to as a Solaris zone.

Solaris zone

A software partition that virtually divides a Solaris OS space.

SPARC Enterprise Partition Model

A SPARC Enterprise model which has a partitioning function to enable multiple system configurations, separating a server into multiple areas with operating OS's and applications in each area.

spare server

A server which is used to replace a failed server when server switchover is performed.

storage blade

A blade-style storage device that can be mounted in the chassis of a blade server.

storage management software

Software for managing storage units.

storage resource

Collective term that refers to virtual storage resources and disk resources.

storage unit

Used to indicate the entire secondary storage as one product.

surrogate pair

A method for expressing one character as 32 bits.
In the UTF-16 character code, 0xD800 - 0xDBFF are referred to as "high surrogates", and 0xDC00 - 0xDFFF are referred to as "low surrogates". Surrogate pairs use "high surrogate" + "low surrogate".

switchover state

The state in which switchover has been performed on a managed server, but neither failback nor continuation have been performed.

System Board

A board which can mount up to 2 Xeon CPUs and 32 DIMMs.

system disk

The disk on which the programs (such as the OS) and files necessary for the basic functions of servers (including booting) are installed.

system image

A copy of the contents of a system disk made as a backup.
Different from a cloning image as changes are not made to the server-specific information contained on system disks.

tenant

A unit for the division and segregation of management and operation of resources based on organizations or operations.

tenant administrator

A user who manages the resources allocated to a tenant.
tenant_admin is the role for performing management of resources allocated to a tenant.
Tenant administrators manage the available space on resources in the local pools of tenants, and approve or reject applications by tenant users to use resources.

tenant folder

A resource folder that is created for each tenant, and is used to manage the resources allocated to a tenant.

L-Servers and local pools are located in tenant folders. Also, it is possible to configure a global pool that tenant administrators can use.

tenant user

A user who uses the resources of a tenant, or creates and manages L-Platforms, or a role with the same purpose.

Thick Provisioning

Allocation of the actual requested capacity when allocating storage resources.

Thin Provisioning

Allocating of only the capacity actually used when allocating storage resources.

tower server

A standalone server with a vertical chassis.

TPP (Thin Provisioning Pool)

One of resources defined using ETERNUS. Thin Provisioning Pools are the resource pools of physical disks created using Thin Provisioning.

TPV (Thin Provisioning Volume)

One of resources defined using ETERNUS. Thin Provisioning Volumes are physical disks created using the Thin Provisioning function.

UNC (Universal Naming Convention)

Notational system for Windows networks (Microsoft networks) that enables specification of shared resources (folders, files, shared printers, shared directories, etc.).

📋 Example
. . . .
\\hostname\dir_name
. . . .

UPS (Uninterruptible Power Supply)

A device containing rechargeable batteries that temporarily provides power to computers and peripheral devices in the event of power failures.
Resource Orchestrator uses UPSs with current value display functions as power monitoring devices.

URL (Uniform Resource Locator)

The notational method used for indicating the location of information on the Internet.

VIOM (ServerView Virtual-IO Manager)

The name of both the I/O virtualization technology used to change the MAC addresses of NICs and the software that performs the virtualization.
Changes to values of WWNs and MAC addresses can be performed by creating a logical definition of a server, called a server profile, and assigning it to a server.

Virtual Edition

The edition that can use the server switchover function.

Virtual I/O

Technology that virtualizes the relationship of servers and I/O devices (mainly storage and network) thereby simplifying the allocation of and modifications to I/O resources to servers, and server maintenance.
For Resource Orchestrator it is used to indicate HBA address rename and ServerView Virtual-IO Manager (VIOM).

virtual server

A virtual server that is operated on a VM host using a virtual machine.

virtual storage resource

This refers to a resource that can dynamically create a disk resource.
An example being RAID groups or logical storage that is managed by server virtualization software (such as VMware datastores).
In Resource Orchestrator, disk resources can be dynamically created from ETERNUS RAID groups, NetApp aggregates, and logical storage managed by server virtualization software.

virtual switch

A function provided by server virtualization software to manage networks of VM guests as virtual LAN switches.
The relationships between the virtual NICs of VM guests and the NICs of the physical servers used to operate VM hosts can be managed using operations similar to those of the wiring of normal LAN switches.

A function provided by server virtualization software in order to manage L-Server (VM) networks as virtual LAN switches.
Management of relationships between virtual L-Server NICs, and physical server NICs operating on VM hosts, can be performed using an operation similar to the connection of a normal LAN switch.

VLAN (Virtual LAN)

A splitting function, which enables the creation of virtual LANs (seen as differing logically by software) by grouping ports on a LAN switch.
Using a Virtual LAN, network configuration can be performed freely without the need for modification of the physical network configuration.

VLAN ID

A number (between 1 and 4,095) used to identify VLANs.
Null values are reserved for priority tagged frames, and 4,096 (FFF in hexadecimal) is reserved for mounting.

VM (Virtual Machine)

A virtual computer that operates on a VM host.

VM guest

A virtual server that operates on a VM host, or an OS that is operated on a virtual machine.

VM Home Position

The VM host that is home to VM guests.

VM host

A server on which server virtualization software is operated, or the server virtualization software itself.

VM maintenance mode

One of the settings of server virtualization software, that enables maintenance of VM hosts.
For example, when using high availability functions (such as VMware HA) of server virtualization software, by setting VM maintenance mode it is possible to prevent the moving of VM guests on VM hosts undergoing maintenance.
For details, refer to the manuals of the server virtualization software being used.

VM management software

Software for managing multiple VM hosts and the VM guests that operate on them.
Provides value adding functions such as movement between the servers of VM guests (migration).

VMware

Virtualization software from VMware Inc.
Provides a virtualized infrastructure on PC servers, enabling flexible management of operations.

VMware DPM (VMware Distributed Power Management)

A function of VMware. This function is used to reduce power consumption by automating power management of servers in VMware DRS clusters.

VMware DRS (VMware Distributed Resource Scheduler)

A function of VMware. This function is used to monitor the load conditions on an entire virtual environment and optimize the load dynamically.

VMware Teaming

A function of VMware. By using VMware Teaming it is possible to perform redundancy by connecting a single virtual switch to multiple physical network adapters.

Web browser

A software application that is used to view Web pages.

WWN (World Wide Name)

A 64-bit address allocated to an HBA.
Refers to a WWNN or a WWPN.

WWNN (World Wide Node Name)

A name that is set as a common value for the Fibre Channel ports of a node. However, the definitions of nodes vary between manufacturers, and may also indicate devices or adapters. Also referred to as a node WWN.

WWPN (World Wide Port Name)

A name that is a unique value and is set for each Fibre Channel port (HBA, CA, fibre channel switch ports, etc.), and is the IEEE global MAC address.

As the Fibre Channel ports of the same WWPN are unique, they are used as identifiers during Fibre Channel port login. Also referred to as a port WWN.

WWPN zoning

The division of ports into zones based on their WWPN, and setting of access restrictions between different zones.

Xen

A type of server virtualization software.

XSB (eXtended System Board)

Unit for domain creation and display, composed of physical components.

XSCF (eXtended System Control Facility)

The name of the Remote Management Controller for SPARC Enterprise M series servers.

zoning

A function that provides security for Fibre Channels by grouping the Fibre Channel ports of a Fibre Channel switch into zones, and only allowing access to ports inside the same zone.