ServerView Resource Orchestrator Cloud Edition V3.1.0
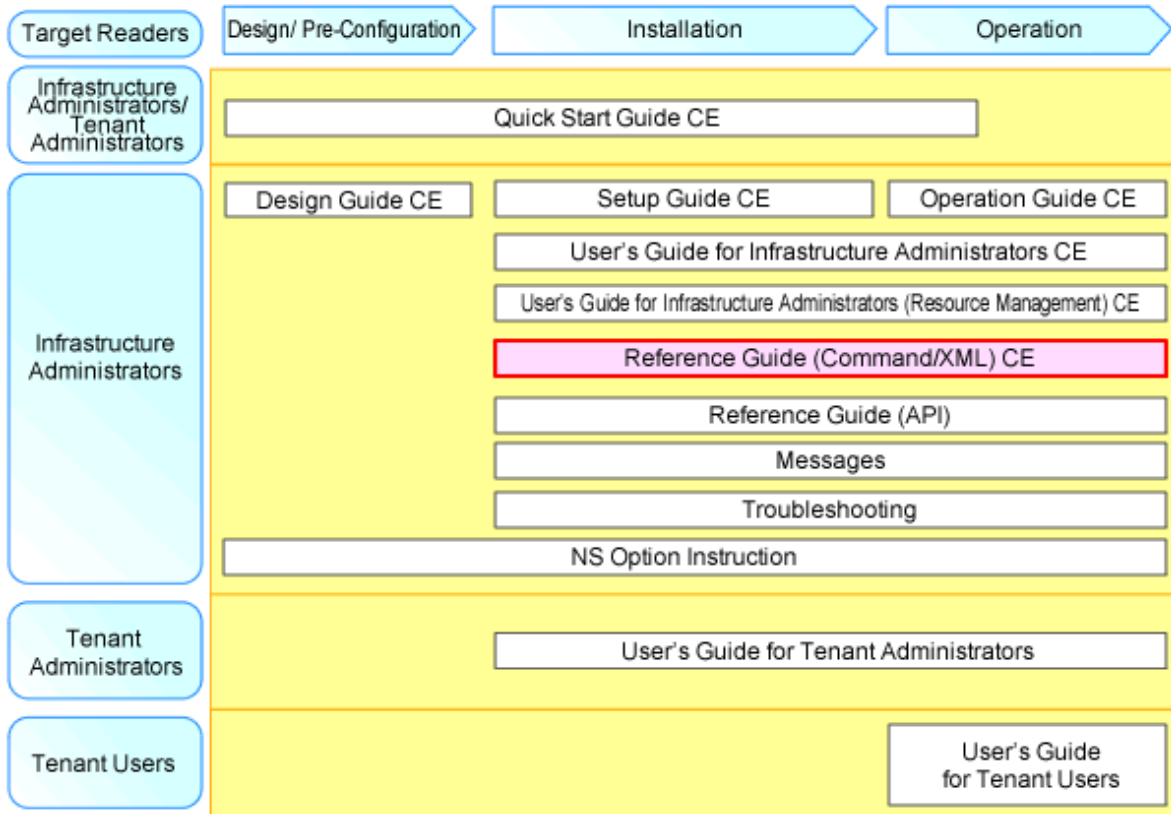
Reference Guide (Command/XML)

Windows/Linux

Preface

Resource Orchestrator Documentation Road Map

The documentation road map for Resource Orchestrator is as shown below.

Resource Orchestrator Documentation Road Map

Point

Refer to the user role manuals displayed in the table below for roles that are not in the diagram.

Roles that are not in the diagram	Roles that are in the diagram
Infrastructure operator Infrastructure monitor	Infrastructure administrator
Tenant operator Tenant monitor	Tenant administrator
(Dual-Role) Administrator (Dual-Role) Operator (Dual-Role) Monitor	Infrastructure administrator and Tenant administrator

For information about the documents for Resource Orchestrator, refer to "Chapter 1 Documentation Road Map" in the "Quick Start Guide CE".

Purpose

This manual explains the commands and XML files available in ServerView Resource Orchestrator (hereinafter Resource Orchestrator).

Target Readers

This manual is written for people who will install and administer systems using Resource Orchestrator.
It is strongly recommended that you read the "Design Guide CE" before using this manual.
When setting up systems, it is assumed that readers have the basic knowledge required to configure the servers, storage, and network devices to be installed.

Organization

This manual is composed as follows:

Section 1 Command Reference

Explains each type of command.

Section 2 File Reference

Explains the input files for each type of command.

Provides an overview of script execution when operating L-Servers.

Explains registered software IDs.

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 Manager]	Sections related to Windows manager
[Linux Manager]	Sections related to Linux manager
[Windows]	Sections related to Windows (When not using Hyper-V)
[Linux]	Sections related to Linux
[Solaris]	Sections related to Solaris or Solaris Containers
[VMware]	Sections related to VMware
[Hyper-V]	Sections related to Hyper-V
[Xen]	Sections related to RHEL5-Xen
[KVM]	Sections related to RHEL-KVM
[Solaris Containers]	Sections related to Solaris containers
[Oracle VM]	Sections related to Oracle VM
[Physical Servers]	Sections related to physical servers
[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 "#".

- The URLs in this manual were correct when the manual was written.

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".

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) 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)

Abbreviation	Products
	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)
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)

Abbreviation	Products
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 ESX	VMware(R) ESX(R)
VMware ESX 4	VMware(R) ESX(R) 4
VMware ESXi	VMware(R) ESXi(TM)
VMware ESXi 5.0	VMware(R) ESXi(TM) 5.0
VMware Tools	VMware(R) Tools
VMware vSphere 4.0	VMware vSphere(R) 4.0
VMware vSphere 4.1	VMware vSphere(R) 4.1
VMware vSphere 5	VMware vSphere(R) 5
VMware vSphere Client	VMware vSphere(R) Client
VMware vCenter Server	VMware(R) vCenter(TM) Server
VMware vClient	VMware(R) vClient(TM)
VMware FT	VMware(R) Fault Tolerance
VMware DRS	VMware(R) Distributed Resource Scheduler
VMware DPM	VMware(R) Distributed Power Management
VMware vDS	VMware(R) vNetwork Distributed Switch
VMware Storage VMotion	VMware(R) Storage VMotion
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
RCVE	ServerView Resource Coordinator VE
ROR	ServerView Resource Orchestrator
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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Contents

Part 1   Command Reference

Chapter 1 Overview

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

The following types of commands are available:

- Resource management commands

  Refer to "1.1 Overview of Resource Management Commands".

- Operation management commands

  Refer to "1.2 Overview of Operation Management Commands".

- Output logs for Disaster Recovery commands

  Refer to "1.2.3 Output Logs when Switchover Occurs because of Disaster Recovery".

1.1 Overview of Resource Management Commands

The following types of commands are available for resource management:

- Login Command

  rcxlogin (*1)

- Resource Operation Commands

  rcxadm addrset

  rcxadm chassis (*2)

  rcxadm disk

  rcxadm firewall

  rcxadm folder

  rcxadm lserver

  rcxadm netconfig

  rcxadm netdevice

  rcxadm network

  rcxadm pool

  rcxadm server (*2)

  rcxadm storage

  rcxadm tenant

  rcxadm tenant [for Basic Mode]

  rcxadm vstorage

- 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

- Backup and restore the configuration of Resource Orchestrator Commands

*1: An existing Virtual Edition command.
*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. Refer to "2.1 rcxlogin" for details.

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 "5.1 Restricting Access Using Roles" in the "Design 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 Manager]
Installation_folder\SVROR\Manager\bin

[Linux Manager]
/opt/FJSVrcvmr/bin
. . . .

1.2 Overview of Operation Management Commands

This chapter provides an overview of the commands available in this product.

Four types of commands are available: the L-Platform Template Management Commands, the Accounting commands, the Access Authority Customize Commands and the Maintenance Commands.

- L-Platform Template Management Commands

  cfmg_addimageinfo

  cfmg_addnetinfo

  cfmg_addsoft

  cfmg_addtemplate

  cfmg_deleteimageinfo

  cfmg_deletenetinfo

  cfmg_deletesoft

  cfmg_deletetemplate

  cfmg_listimageinfo

  cfmg_listnetinfo

  cfmg_listsoft

  cfmg_listtemplate

  cfmg_listvmimage

cfmg_listvnet

cfmg_showtemplate

cfmg_updateimageinfo

- Accounting commands

ctchg_chgschedule

ctchg_getmeterlog

currencyset

productmaintain

- Access Authority Customize Commands

ctac_getauthority

ctac_updauthority

- Maintenance Commands

cfmg_deletelplatform

cfmg_deletelserver

cfmg_deletesysdata

cfmg_importlserver

cfmg_listhostnamecounter

cfmg_resethostnamecounter

cfmg_syncdiskinfo

cmdbrefresh

ctmg_collectinfo

ctmg_resetbackuperror

recoverAllService

recoverService

The table below lists the permissions required to execute each command depending on the server on which they are executed.

Table 1.1 List of Commands

Command	Function	Required Privileges	Location
cfmg_addimageinfo	Registering image information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_addnetinfo	Registering segment information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_addsoft	Registering software iformation	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_addtemplate	Registering template information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_deleteimageinfo	Deleting image information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_deletelplatform	Delete L-Platform	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_deletelserver	Release L-Server	Infrastructure administrator with OS administrator privilege	Admin Server

Command	Function	Required Privileges	Location
cfmg_deletenetinfo	Deleting segment information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_deletesoft	Deleting software information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_deletesysdata	Unnecessary data deletion	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_deletetemplate	Deleting template information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_importlserver	Import L-Server	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_listhostnamecounter	Display list of serial numbers for host name settings	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_listimageinfo	Displaying image information list	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_listnetinfo	Displaying segment information list	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_listsoft	Displaying software information list	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_listtemplate	Displaying template information list	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_listvmimage	Displaying a cloning image list	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_listvnet	Displaying a virtual network list	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_resethostnamecounter	Reset serial numbers for host name settings	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_showtemplate	Changing L-Platform access setting	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_syncdiskinfo	Synchronize disk information	Infrastructure administrator with OS administrator privilege	Admin Server
cfmg_updateimageinfo	Updating image information	Infrastructure administrator with OS administrator privilege	Admin Server
cmdbrefresh	Refresh configuration information of system condition	Infrastructure administrator with OS administrator privilege	Admin Server
ctac_getauthority	Acquiring information about access authority	Infrastructure administrator with OS administrator privilege	Admin Server
ctac_updauthority	Access authority modification	Infrastructure administrator with OS administrator privilege	Admin Server
ctchg_chgschedule	Change periodic log schedule settings	Infrastructure administrator with OS administrator privilege	Admin Server
ctchg_getmeterlog	Output metering logs	Infrastructure administrator with OS administrator privilege	Admin Server
ctmg_collectinfo	Collection of investigation data	System Administrator	Admin Server
ctmg_resetbackuperror	Recover base backup error	System Administrator	Admin Server
currencyset	Change currency information setting	Infrastructure administrator with OS administrator privilege	Admin Server

Command	Function	Required Privileges	Location
productmaintain	Product Master Maintenance	Infrastructure administrator with OS administrator privilege	Admin Server
recoverAllService	Disable L-Platform application	Infrastructure administrator with OS administrator privilege	Admin Server
recoverService	Disable L-Platform application	Infrastructure administrator with OS administrator privilege	Admin Server

1.2.1 Exit Status and Messages

Check the Exit status for the results of Commands.

If the exit status is 0, the command terminated normally. If the exit status is not 0, the command ended abnormally and a message is displayed. Refer to the description of each command for details.

Refer to "Messages" for details.

Type	Type of Message
L-Platform Template Management Commands	Messages Starting with TPLC
Accounting Commands	Messages Starting with ctchg
	Messages Starting with meter
Access Authority Customize Commands	Messages Starting with ctac
Maintenance Commands	Messages Starting with BKRS
	Messages Starting with BRPG
	Messages Starting with DELP
	Messages Starting with DRC
	Messages Starting with TPLC

1.2.2 How to Check Exit Status

Exit Status can be checked after the commands are executed.

Exit Status checking method examples are shown below.

[Windows Manager]

```
C:\Users\Administrator> Installation_folder\RCXCFMG\bin\cfmg_listhostnamecounter
C:\Users\Administrator> echo %errorlevel%
0
C:\Users\Administrator>
```

[Linux Manager]

```
$ su -
Password: Super user's password
# /opt/FJSVcfmg/bin/cfmg_listhostnamecounter
# echo $?
0
#
```

> **📎 Note**
>
> ....
>
> If the admin server is Linux, ensure that the environment variable LANG is "en_US.UTF-8" when executing L-Platform Template Management Commands.
>
> ....

1.2.3 Output Logs when Switchover Occurs because of Disaster Recovery

Information relating to the export or import process for L-Platform templates and L-Platform configurations is output to the following log when information is collected for Disaster Recovery switching, or when switching due to the occurrence of a disaster.

Log Output Destination

[Windows Manager]

Installation_folder\RCXCFMG\logs\vsys_dr_log

[Linux Manager]

/var/opt/FJSVcfmg/logs/vsys_dr_log

Log Output Format

The contents are output in one of the following formats:

- Format 1: date error-level message

- Format 2: date error-level message-ID message

When an error has occurred, the log is output in the format 2 with the error level "ERROR".

L-Platforms that require action after Disaster Recovery switchover

If information for swichingover is collected while an L-Platform is being deployed or when being reconfigured, and this information is used for the switch, L-Platform information for which resources do not exist may be restored.

If this occurs, the rcxrecovery extracts the information for L-Platforms that may not have resources and output to the format 1 log.

Output message details are shown below.

- Log output format

  Format 1

- Error level

  WARN

- Message

  Detailed information is output as the message.

```
item 1 = [content 1], item 2 = [content 2], ... item n = [content n]
```

The following items are output.

Item name	Content
Processing	The process being performed when the L-Platform is exported
L-Platform ID	The ID of the L-Platform that needs checking
System name	The L-Platform name
Tenant	The tenant of the L-Platform
User	The owner of the L-Platform

Item name	Content
Template ID	The ID of the template the L-Platform uses
Server ID	The ID of the server being processed (It is output only when processing on a server.)
Server name	The name of the server being processed (It is output only when processing on a server.)
Date	The date and time of the processing

One of the following contents is output for the content of "Processing" item.

Content	Meaning
SUBSCRIBING	Deploying
RECONFIGURING	Reconfiguring
UNSUBSCRIBING	Unsubscribing
TAKING SNAPSHOT	Taking a snapshot (virtual server) Backing up (physical server)
RESTORING	Restoring
CLONING	Collecting an image
APPLYING UNSUBSCRIPTION	Applying an unsubscription
APPLYING SUBSCRIPTION	Applying a subscription
SAVING NEW CONFIGURATION	Saving a configuration of a new system
APPLYING RECONFIGURE	Applying a reconfiguration
SAVING RECONFIGURATION	Saving a configuration of a reconfiguration

Actions after performing Disaster Recovery

After performing Disaster Recovery, check vsys_dr_log to see if the logs shown in "L-Platforms that require action after Disaster Recovery switchover" are output.

If the logs shown in "L-Platforms that require action after Disaster Recovery switchover" are output, take the following actions according to the unfinished process indicated by the "Processing" item even if it is displayed on the L-Platform management window.

a. SUBSCRIBING

The L-Platform was being deployed when it was exported.

What to check		Check if the L-Platform is displayed on the resource management window.
Pattern 1	Condition	It is displayed on the resource management window.
	Action	It was successfully deployed after the export. Use the deployed L-Platform as it is.
Pattern 2	Condition	It is not displayed on the resource management window.
	Action	The deployment process was not completed successfully after the export. Perform the following procedure: Using the 12.3 cfmg_deletesysdata (Unnecessary Data Deletion) command, delete the L-Platform. Deploy an L-Platform again.

b. RECONFIGURING

The L-Platform was during a reconfiguration such as adding or deleting servers or disks, or changing server details when it was exported.

When its servers or disks have been added or deleted.

What to check	On the resource management window, check if the configuration of the servers and their disks agrees with the L-Platform management window.	
Pattern 1	Condition	The configuration of servers or disks agrees, and servers or disks have been added.
	Action	Adding servers or disks succeeded after the export. Use the L-Platform as it is.
Pattern 2	Condition	The configuration of servers or disks agrees, and servers or disks have been deleted.
	Action	Deleting servers or disks was not completed successfully after the export. Delete servers or disks again by a reconfiguration.
Pattern 3	Condition	The configuration of servers or disks does not agree, and servers or disks have been added.
	Action	Adding servers or disks was not completed successfully after the export. Perform the following procedure: Using the 12.3 cfmg_deletesysdata (Unnecessary Data Deletion) command, delete the servers or disks that have been added. Add servers or disks again.
Pattern 4	Condition	The configuration of servers or disks does not agree, and servers or disks have been deleted.
	Action	Deleting servers or disks succeeded after the export. Perform the following procedure: Using the 12.3 cfmg_deletesysdata (Unnecessary Data Deletion) command, delete the servers or disks that have been deleted.

When server details, the L-Platform name, server names, or boot priorities have been changed.

What to check	Compare the resource management window and the L-Platform management window to check if the management information of the L-Platform agrees. On the resource management window, the L-Platform name is displayed in the L-Platform comment field and server names are in the L-Server comment fields.	
Pattern 1	Condition	The management information agrees.
	Action	The reconfiguration such as changing server details succeeded after the export. Use the L-Platform as it is.
Pattern 2	Condition	The management information does not agree.
	Action	The reconfiguration such as changing server details was not completed successfully after the export. Reconfigure it again.

c. UNSUBSCRIBING

The L-Platform was being unsubscribed when it was exported.

What to check	Check if the L-Platform is displayed on the resource management window.

Pattern 1	Condition	It is displayed on the resource management window.
	Action	The unsubscription was not completed successfully after the export. Unsubscribe it again.
Pattern 2	Condition	It is not displayed on the resource management window.
	Action	The unsubscription succeeded after the export. Perform the following procedure: Using the 12.3 cfmg_deletesysdata (Unnecessary Data Deletion) command, delete the L-Platform.

d. TAKING SNAPSHOT

The L-Platform contains virtual servers that were being taken snapshots or physical servers that were being backed up when it was exported.

Redo the operation as needed.

In the history of snapshots or backups, the ending date is displayed as a blank and the status as an error.

e. RESTORING

The L-Platform contains servers that were being restored when it was exported.

Redo the operation as needed.

In the history of snapshots or backups, the ending date is displayed as a blank and the status as an error.

f. CLONING

The L-Platform contains servers that were being collected images of when it was exported.

What to check	Check if the collected cloning images are displayed on the resource management window.	
Pattern 1	Condition	They are displayed on the resource management window.
	Action	Collecting images succeeded after the export. Register the image information of the cloning images.
Pattern 2	Condition	They are not displayed on the resource management window.
	Action	Collecting images was not completed successfully after the export. Collect images again.

g. APPLYING UNSUBSCRIPTION

The L-Platform was in an application process of an unsubscription when it was exported.

What to check	Check if the L-Platform is displayed on the resource management window.	
Pattern 1	Condition	It is displayed on the resource management window.
	Action	The request was not approved or the unsubscription was not completed successfully after the export. Apply an unsubscription again.
Pattern 2	Condition	It is not displayed on the resource management window.
	Action	The request was approved and the unsubscription was succeeded after the export. Using the 12.3 cfmg_deletesysdata (Unnecessary Data Deletion) command, delete the L-Platform.

h. APPLYING SUBSCRIPTION

The L-Platform was in an application process of a subscription when it was exported.

What to check	Check if the L-Platform is displayed on the resource management window.	
Pattern 1	Condition	It is displayed on the resource management window.
	Action	The request was approved and the L-Platform was deployed successfully after the export. Use the deployed L-Platform as it is.
Pattern 2	Condition	It is not displayed on the resource management window.
	Action	The request was not approved or the deployment was not completed successfully after the export. Apply a subscription again.

i. SAVING NEW CONFIGURATION

The configuration of the L-Platform was saved when it was exported.

What to check	Check if the L-Platform is displayed on the resource management window.	
Pattern 1	Condition	It is displayed on the resource management window.
	Action	It was deployed after the export. Use the deployed L-Platform as it is.
Pattern 2	Condition	It is not displayed on the resource management window.
	Action	It was not deployed or the deployment was not completed successfully after the export. If it has been deployed, create an L-Platform again.

j. PPLYING RECONFIGURE

The configuration of a reconfiguration request of the L-Platform was saved when it was exported.

What to check	Check if the L-Platform is in the applied state.	
Pattern 1	Condition	It is in an applied state.
	Action	The reconfiguration succeeded after the export. Use the L-Platform as it is.
Pattern 2	Condition	It is not in an applied state.
	Action	The request was not approved or the reconfiguration was not completed successfully after the export. If the request has been approved, request a reconfiguration again.

k. SAVING RECONFIGURATION

The configuration of a reconfiguration of the L-Platform was saved when it was exported.

What to check	Check if the L-Platform is in a state with its configuration saved.	
Pattern 1	Condition	It is in a state with its configuration saved.
	Action	The reconfiguration was completed successfully after the export. Use the L-Platform as it is.
Pattern 2	Condition	It is not in a state with its configuration saved.
	Action	It was not reconfigured or the reconfiguration was not completed successfully after the export. If it has been reconfigured, reconfigure it again.

Chapter 2 Login

This chapter explains the command used to log in to Resource Orchestrator.

2.1 rcxlogin

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxlogin** - Logs in to Resource Orchestrator

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxlogin - Logs in to Resource Orchestrator

Format

```
rcxlogin [-save] user_name
```

Description

rcxlogin is the command used to authenticate users in Resource Orchestrator.

If you are using commands for which administrative privileges are required, first use this command to log in as a user with administrative privileges.
If a user already has administrative privileges within the operating system, it is not necessary for that user to execute this command in order to use Resource Orchestrator commands.

If a user has no administrative privileges, to use the commands explained in "Chapter 3 Resource Operations" through "Chapter 8 L-Server Template Operations", log in with the rcxlogin command beforehand.

user_name

Specify a user ID that has been registered in Resource Orchestrator. You will then be asked to enter the password of the specified user. If the correct password is entered, a new command prompt will be displayed showing that the authentication succeeded.
If an invalid password or user ID is entered, an error message is displayed.

To log off, execute the exit command. To log in as a different user without logging off, re-execute the rcxlogin command.

Option

-save (optional)

Saves the entered password. This password is remembered only for the user account (within the operating system) used to execute this command. Once a password has been saved for a given user account, this command can then be executed from the same account without being asked for a password again.
Saving the password also allows scripts to use commands for which administrative privileges are required.
Refer to "Automation using scripts" in the "Examples" section for details.

> **Note**
>
> - Saving the password makes it possible to log in to Resource Orchestrator just by logging in to the operating system user account for which the password was saved. When using this function, ensure that strict control is exercised over this user account on the admin server.
>
> - In a clustered manager configuration, use the following procedure to save the password on both the primary and secondary cluster nodes.
>
>   [Windows Manager]

1. Start the cluster service on the primary node.

   In the Failover Cluster Management tree, right-click [RC-manager] under [Services and Applications], and select [Bring this service or application online] from the popup menu.
   Confirm that all resources are turned online.

2. Run the rcxlogin -save *user_name* command on the primary node.

3. Move the manager "service or application" to the secondary node.

   Confirm that all resources are turned online on the secondary node.

4. Run the rcxlogin -save *user_name* command on the secondary node.

5. Move the manager "service or application" back to the primary node.

   Confirm that all resources are turned online on the primary node.

[Linux Manager]

1. Start the cluster service on the primary node.

   Use the cluster system's operation management view (Cluster Admin) and start the cluster service of the manager.

   Confirm that all resources are turned online.

2. Run the rcxlogin -save *user_name* command on the primary node.

3. Use the cluster system's operation management view (Cluster Admin) and switch to the secondary node.

   Confirm that all resources are turned online on the secondary node.

4. Run the rcxlogin -save *user_name* command on the secondary node.

5. Use the cluster system's operation management view (Cluster Admin) and switch to the primary node.

   Confirm that all resources are turned online on the primary node.

For a user account with OS administrative privileges, Resource Orchestrator commands can be executed freely without needing to save a password first.

Requirements

Permissions

  Not required.

Location

  Admin server

Examples

- Logging in using password authentication

  >**rcxlogin userA** <RETURN>
  Password: *password* <RETURN>

- Automation using scripts

  To use commands requiring administrative privileges from within a script, thus allowing automated calls from external products, the user account's password must be registered in advance using the rcxlogin -save command.

  Within the script, the RCX_USER environment variable must be defined and set to the user ID of the account for which the password was saved.

  Once this variable is properly set, Resource Orchestrator commands can be executed using the previously saved password.

Note

The script must be executed by the operating system user account that was used to save the password on the admin server.

Example

Script (batch file) content:

[Windows Manager]

```
@echo off

set RCX_USER=userA
rem Write down commands that can be run with userA's privileges.
Installation_folder\SVROR\Manager\bin\rcxserver stop -name svr0001 -force
Installation_folder\SVROR\Manager\bin\rcxserver start -name svr0002
...
```

[Linux Manager]

```
#!/bin/sh

RCX_USER=userA
export RCX_USER
# Write down commands that can be run with userA's privileges.
/opt/FJSVrcvmr/bin/rcxserver stop -name svr0001 -force
/opt/FJSVrcvmr/bin/rcxserver start -name svr0002
...
```

Exit Status

This command returns the following values:

0

    The command executed successfully.

non-zero

    An error has occurred.

Chapter 3 Resource Operations

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

3.1 rcxadm addrset

Name

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

[Linux Manager]
/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 3.1 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 3.2 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 3.3 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

```
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
```

3.2 rcxadm chassis

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm chassis** - Chassis power control

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm chassis - Chassis power control

Format

```
rcxadm chassis start -name resource [-nowait]
rcxadm chassis stop -name resource [-nowait] [-force]
```

Description

rcxadm chassis is the command used to power on or power off a blade chassis.
This function can only be used with chassis for PRIMERGY BX servers.

Subcommands

start

Powers on the target chassis.

stop

Powers off the target chassis.

Options

-name *resource*

Specify the name of the target chassis in *resource*.

-nowait (optional)

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

Specify the following options when using the stop subcommand:

-force (optional)

Use this option to forcibly stop a chassis.

Requirements

Permissions

One of the following permissions is required:

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

⚑ **Note**

· ·

- When powering off a chassis, all management blades contained in the target chassis will be gracefully shut down. This function requires ServerView Agents to be installed on all server blades in the chassis.

- Server blade BIOS settings can be configured to automatically start up when powering on the chassis. Refer to the server blade manual for details about such settings.

· ·

This section explains the additional functions of the Cloud Edition.

Name

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

[Linux Manager]
/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 3.4 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

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

3.3 rcxadm disk

Name

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

[Linux Manager]
/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 3.5 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:
	
	- 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

Item Name	Description
	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 3.6 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:
	
	- 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.

Item Name	Description
	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 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

Item Name	Description
	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 "13.4.1 Disk Resources [KVM]".
For details on the commands that help the creation of XML file definitions, refer to "5.23 rcxvmdisk" and "5.24 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**

. . . .

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
```

3.4 rcxadm firewall

Name

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

[Linux Manager]
/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 3.7 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 3.8 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 3.9 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
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)

Item Name	Description

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 "00" 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 3.10 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.
>
> ....

3.5 rcxadm folder

Name

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

[Linux Manager]
/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.

Resource 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 3.11 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 3.12 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 "13.7 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 :
```

3.6 rcxadm lserver

Name

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

[Linux Manager]
/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 attach -name name -define -net network_name [-ip ipaddress] [-nowait]
rcxadm lserver detach -name name -disk disk [-online] [-system] [-force] [-allow deldisk] [-nowait]
rcxadm lserver detach -name name-define -nic nic_index [-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 3.13 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 3.14 Virtual L-Server Information

Item Name	Description
NAME	L-Server name
TYPE	Server type
SPEC	CPU performance, number of CPUs, and memory size [Solaris Containers] Refer to *5 in "Table 3.16 Detailed Information for Virtual L-Servers".
DISKS	Disk size When there are multiple disks, they are displayed separated by commas. If the disk capacity cannot be obtained, a hyphen ("-") is displayed.
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:

Note

. . . .

The number and display order of the items may be changed by enhancement of Resource Orchestrator.

. . . .

- For Physical L-Servers

Table 3.15 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

Item Name	Description
	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)
ServerPool	The name of the pool in which the physical servers allocated to L-Servers are registered This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated)
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.
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 disks have been allocated or disks to use have been specified for the L-Server.
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.

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.
	
	This is displayed when an L-Server status is one of the following:
	
	  - Resources have been allocated (allocated)
	
	  - Servers have been released (preserved)

OriginalStorage[*num*]	Virtual storage or resource pool to create the disk to allocate to L-Servers

Item Name	Description
	The index number of the disk element is configured in *num*. The number is "0" or larger.
StoragePool[*num*]	The name of an allocated storage pool
	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)
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
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.

Item Name	Description
	- 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 3.16 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 When the L-Server version cannot be distinguished, it will not be displayed.

Deploy Disk (*1)	Data disk deployment settings for images
	
	  - When configuring the settings in the same configurations as those for images
	
	    "all" is displayed.

ServerType	Server type
VMType	VM type
OSType	Type of OS
CPUArch	CPU architecture
CPUPerf (*5)	CPU performance When the limit is not set, a hyphen ("-") is displayed.
CPUReserve (*2)	The minimum number of CPU resources to be allocated
CPUShare (*2)	The relative proportion for allocation of CPU resources
CPUWeight (*3)	The priority for allocation of CPU resources
NumOfCPU (*5)	Number of CPUs
MemorySize (*6)	Memory size

Item Name	Description
MemoryReserve (*2)	The minimum amount of memory resources to be allocated
MemoryShare (*2)	The relative proportion for allocation of memory resources
StartupRAM (*3)	Initial memory capacity to be allocated at startup
MemoryBuffer (*3)	Available memory to be reserved as a buffer
MemoryWeight (*3)	The priority for allocation of memory resources

DynamicMemory (*3)	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 (*4)	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)
VMHostPool	The name of the pool in which the VM hosts containing virtual machines allocated to L-Servers are registered This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated)
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 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 disks have been allocated or disks to use have been specified for the L-Server.
DiskSize[num]	The disk size to allocate to L-Servers

Item Name	Description
	The index number of the disk element is configured in *num*. The number is "0" or larger. If the disk capacity is not decided, a hyphen ("-") is displayed.
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. 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*]	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. This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated) - Servers have been released (preserved)
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. This is displayed when an L-Server status is one of the following: - Resources have been allocated (allocated) - Servers have been released (preserved)
OriginalStorage[*num*]	Virtual storage or resource pool to create the disk to allocate to L-Servers The index number of the disk element is configured in *num*. The number is "0" or larger.
StoragePool[*num*]	The name of an allocated storage pool 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)
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.

Item Name	Description
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 ("-")
	
	  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 creating an L-Server that deploys cloning images, this item is only displayed when "all" is specified in "ServerImageLink".
*2: When values are set for VMware, it is displayed.
*3: When values are set for Hyper-V, it is displayed.
*4: In RHEL-KVM, the status of allocated resources is displayed as below.
- Resources have been allocated (allocated)
- Servers have been released (preserved)
*5: [Solaris Containers]

When one of following conditions is met, a hyphen ("-") is displayed for the number of CPUs or CPU performance for an L-Server.

- The CPU cap value is not configured in the non-global zone

- The non-global zone is not managed in the managed resource pool

When these conditions are not met, the values calculated by the following formula are displayed for the number of CPUs and CPU performance of an L-Server.

- Number of CPUs = *cap values of CPUs* (rounding up the number of decimal places)

- CPU performance = (*cap values of CPUs*/(*Number of CPUs* * 100)) * *physical CPU performance*(GHz)

Example

When the CPU cap value is 720, and the physical CPU performance is 3.0 GHz

- Number of CPUs

720 / 100 (rounded up) = 8 (cores)

- CPU performance

$(720 / (8 * 100)) * 3.0 = 2.7$ (GHz)

. . . .

When a hyphen ("-") is given for the number of CPUs and CPU performance, the amount of resources used by an L-Server is calculated using zero for the values.
When any numbers are given for CPUs and CPU performance, make calculations using those values.

*6: [Solaris Containers]

When the memory cap values are not configured in the non-global zone, a hyphen ("-") is displayed for the memory size of an L-Server. When cap values are configured, the cap values for the L-Server memory size are displayed

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.

Adds a NIC to an L-Server.

Note

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- 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.

[Solaris Containers]

- NICs can be added to L-Servers that have been linked to a non-global zone of a Solaris Container.

- Up to 8 NICs are supported.

. . . .

detach

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

Deletes a NIC of an L-Server.

Note

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

[Solaris Containers]

- NICs can be deleted from L-Servers that have been linked to a non-global zone of a Solaris Container.

. . . .

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\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

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- 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 "14.5 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.

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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 "13.3 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 "13.2 L-Server Template" or "13.3 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 "13.3.1 Definition Information for Physical L-Servers (XML)" and "13.3.2 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 13.3 List of Items Specified in XML Definitions for Physical L-Servers" in "13.3.1 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 13.5 List of Items Specified in XML Definitions for Virtual L-Servers" in "13.3.2 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 for PXE boot, or the network resource name to connect additional NICs to.

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
```

-define

Use this option to reflect the information on Resource Orchestrator, after adding or deleting NICs to VM management software.

-nic *nic_index*

Specify a network index to delete.

-ip *ipaddress*

Specify the IP address to allocate to the NIC. If omitted, an address is automatically allocated.

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
...
```

- When adding NICs

```
>rcxadm lserver attach -name mylserver1 -define -net mynet1 -ip 192.168.3.2 <RETURN>
```

- When deleting NICs

```
>rcxadm lserver show -name mylserver1 <RETURN>
.
..
NIC[0][IPAddress]: 192.168.33.1
NIC[1][IPAddress]: 192.168.33.2

>rcxadm lserver detach -name mylserver1 -define -nic 1 <RETURN>
```

3.7 rcxadm netconfig

Name

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

[Linux Manager]
/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 under the Netdevices element (the Mode element) defined in the network configuration information.
For link information, they are created or modified according to the registration mode under the Links element (the Mode element) 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 "3.8 rcxadm netdevice".

- For a network device with the status "registered", when importing the XML definitions specifying "add" for the registration mode (the Mode element under the Netdevices element), the target network device is not modified. The importing process will be continued for other network devices defined in the XML definitions.
  When performing import operations by specifying the XML definitions to use "modify" for the registration mode (the Mode element under the Netdevices element), update operations are performed for the network devices registered using the same IP address as the admin IP address (Netdevice ip).

- For already registered link information, when importing the XML definitions specifying "add" for the registration mode (the Mode element under the Links element), already registered link information is not modified. The importing process will be continued for other link information defined in the XML definitions. To determine whether the link information has been registered, check the combination of "Admin IP Address of Device (Device ip)" and "Connection Port (Port)".
  When importing the information specifying the XML definition using "modify" for the registration mode (the Mode element under the Links element), delete all registered link information, and then register the link information specified in the XML definitions.

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 "13.6.1 Creation".

🛈 Note

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

. . . .

3.8 rcxadm netdevice

Name

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

[Linux Manager]
/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

. . . .

- 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.

- When the network devices to register are NS appliances, and if there are not enough NS option licenses registered in the ROR manager for the number of NS appliances to register, the message 62596 is output, and registration fails.
  Register the necessary number of NS option licenses with the ROR manager, and register the devices again.

. . . . - 53 - . . . .

delete

Deletes a network device.

list

Displays a list of network devices.

The following detailed information is displayed:

Table 3.17 Network Device Information

Item Name	Description
NAME	Network device name
IPADDRESS	Admin IP address for the network device
NETDEVICE_TYPES	Network device type When there is more than one, they are displayed separated by commas. For virtual appliances, the type is displayed with "(virtual)" added.

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 3.18 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.
	
	- 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. For virtual appliances, the type is displayed with "(virtual)" added.

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.

Item Name	Description
	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.
	
	- 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

Item Name	Description
	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.
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:

Item Name	Description

	- 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
	
	  "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 "13.6.1 Creation".

-name *name*

In *name*, specify the name of a network device.
If an unregistered network device name is specified for *name*, an error will occur.

-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(virtual)     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
```

3.9 rcxadm network

Name

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

[Linux Manager]
/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 3.19 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 3.20 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

Item Name	Description
	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
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

Item Name	Description
	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 "13.5.1 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)
```

3.10 rcxadm pool

Name

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

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

Format

```
rcxadm pool create -name name -type type [-priority priority] [-label label] [-comment comment] [-attr
{over_commit={true|false},[calculated_using={reserve|limit}]|thin={true|false}}] [-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]} [-attr {over_commit={true|false},calculated_using={reserve|limit}}] [-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.

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 "14.5 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 3.21 VM Pool Information

Item Name	Description
NAME	VM pool name
TYPE	Resource pool types

Item Name	Description
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.

ATTRIBUTES (*2)	The calculation method for overcommit attributes and free space for VM pools.
	
	One of the following is displayed:
	
	- When calculating the free space with a reservation value, while overcommit is enabled
	
	  "OverCommit=true,CalculatedUsing=reserve" is displayed.
	
	- When calculating the free space with the upper limit value, while overcommit is enabled
	
	  "OverCommit=true,CalculatedUsing=limit" is displayed.
	
	- When overcommit is disabled
	
	  "OverCommit=false" is displayed.

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

*2: When specifying -extend attributes for the option, this is displayed. Immediately after performing upgrade of an admin server from ROR V2.2.0 or V3.0.0, this item cannot be displayed even if the -extend attributes option is specified. To display this item, delete the definition file explained in "G.1.2 Definition Files for Display Control of VM Pool Attribute Information" in the "Setup Guide CE".

- For server pools

Table 3.22 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 3.23 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 "C.5.9 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 "C.5.9 Advisory Notes for Oracle VM Usage" in 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.
	
	- 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 3.24 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 3.25 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 3.26 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 3.27 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.
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.

Item Name	Description
	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

ATTRIBUTES (*3)	The calculation method for overcommit attributes and free space for VM pools.
	
	One of the following is displayed:
	
	- When calculating the free space with a reservation value, while overcommit is enabled
	
	  "OverCommit=true,CalculatedUsing=reserve" is displayed.
	
	- When calculating the free space with the upper limit value, while overcommit is enabled
	
	  "OverCommit=true,CalculatedUsing=limit" is displayed.
	
	- When overcommit is disabled
	
	  "OverCommit=false" is displayed.

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

Table 3.28 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
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.

Note

In display the converted number of L-Servers to the VM pools and storage pools, the number of L-Servers that can be created is as follows by specify VM type of virtual L-Server template.

- When VM type is specified for the L-Server template

The number of L-Servers that can be created is displayed to the resource that corresponds to the specified VM type.

It is always displayed to the resource that does not correspond to the specified VM type, "0".

- When VM type is not specified for the L-Server template

It does not depend on the VM type, and the number of L-Servers that can be created is displayed.

For the definition of the L-Server template, refer to "13.2.2 Virtual L-Server Templates".

- When specifying -resource for the option

Table 3.29 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 3.30 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 3.31 Resource Information Included in Server Pools

Item Name	Description
NAME	Resource name included in the resource pool

Item Name	Description
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
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 3.32 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 "C.5.9 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 "C.5.9 Advisory Notes for Oracle VM Usage" in 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.

Item Name	Description
	- 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 3.33 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 "C.5.9 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 3.34 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 3.35 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.

Item Name	Description
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 3.36 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 3.37 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 3.38 Image Pool Information

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

Table 3.39 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 18 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 3.40 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.

OverCommit	It is displayed as follows:
	
	- When overcommit is enabled
	  "true" is displayed.
	
	- When overcommit is disabled
	  "false" is displayed.

CalculatedUsing	It is displayed as follows:
	
	- When calculating the free space using a reservation value
	  "reserve" is displayed.
	
	- When calculating the free space using the upper limit value
	  "limit" is displayed.

Item Name	Description
	Only displayed when overcommit is enabled.

- For server pools

Table 3.41 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 3.42 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 "C.5.9 Advisory Notes for Oracle VM Usage" in 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 "C.5.9 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE".
Thin	It is displayed as follows:

Item Name	Description
	- 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 3.43 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
FreeVLANId	Number of unused VLAN IDs
NetworkDevice	Total number of network devices
InUseNetworkDevice	Total number of network devices in use

- For address pools

Table 3.44 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 3.45 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.
> Modifies the calculation method for overcommit attributes and free space for VM pools.

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 3.46 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.

-attr *attr*

> Specify the attributes for the resource pool. When specifying multiple attributes, separate them using commas.

> - For VM pools

>   **over_commit={true|false}**

>   Specify enabling/disabling of overcommit.

>   - When enabling overcommit
>   Specify "true".

- When disabling overcommit
  Specify "false".

calculated_using={reserve|limit}

Specify the calculation method for free space for the VM pools for which overcommit is enabled.

- When calculating the free space using a reservation value
  Specify "reserve".

- When calculating the free space using the upper limit value
  Specify "limit".

- For storage pools

  thin={true|false}

  Specify one of following items.

  - When configuring Thin Provisioning attributes
    Specify "true".

  - When not configuring Thin Provisioning attributes
    Specify "false".

> 📌 **Note**
> ....
> When performing upgrade of an admin server from ROR V2.2.0 or V3.0.0, this option cannot be specified if the migration procedure given in the configuration methods for the overcommit functions is not performed. Edit the definition files separately. For details, refer to "G.1.1 Overcommit Definition File" in the "Setup Guide CE".
> ....

-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 3.47 List of Resource Types

resource_type	Resource Types
vm_host	VM host
physical_server	Physical server

resource_type	Resource Types
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          -
```

3.11 rcxadm server

Name

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

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

Format

```
rcxadm server start -name resource [-nowait]
rcxadm server stop -name resource [-force] [-nowait]
rcxadm server restart -name resource [-force] [-nowait]
rcxadm server switchover -name resource [-spare spare_server] [-nowait]
rcxadm server failback -name resource [-nowait]
rcxadm server takeover -name resource [-nowait]
rcxadm server list [{-type {physical|vmguest|all}} | [-spare] | [-bootagt]}]
rcxadm server migrate -name guest_name -to vmhost [-mode {live|cold}] [-nowait]
rcxadm server migrate -home [-name vmhost] [-nowait]
rcxadm server set -name resource -attr {vmm_mode={maintenance|active}|
```

```
        vmware.maintenance={maintenance|active}} [VMware]
rcxadm server set -name resource -attr vmm_mode={maintenance|active|maintenance_with_move} [Hyper-V]
[Xen]
rcxadm server set -name resource -attr bootagt={dos|winpe}
```

Information

···

rcxserver is an abbreviated form of the rcxadm server command. Both forms provide the same subcommands and options, and produce
the same results.

···

Description

rcxadm server is the command used to control server resources. This function provides the following functionality:

- Display of server statuses (physical OS, VM host, or VM guest)

- Startup, shutdown, or restart of a designated server (physical server, physical OS, VM host, or VM guest)

- Switchover, failback, or takeover of a designated server (physical OS or VM host)

- VM guest migration

- VM maintenance mode settings for VM hosts

- Migration to VM Home Position

- Change the boot agent of the specified server (physical server)

When stopping or restarting a VM host, any VM guests that are running will also be stopped.
Verify that stopping the affected VM guests will not cause any problems before stopping or restarting a VM host.

For details on the switchover, failback and takeover operations, refer to "Chapter 18 Server Switchover Settings" of the "User's Guide VE".
For details on VM guest migrations, refer to "15.1 Migration of VM Guests between Servers" in the "User's Guide VE".
For details on VM maintenance mode settings, refer to "15.2 VM Maintenance Mode of VM Hosts" in the "User's Guide VE".

Subcommands

start

 Starts the target server (physical server, physical OS, VM host, or VM guest).

stop

 Stops the target server (physical server, physical OS, VM host, or VM guest).

restart

 Restarts the target server (physical server, physical OS, VM host, or VM guest).

switchover

 Switches over the target server (physical OS or VM host) with one of its spare servers.

failback

 Switches back a server in switchover state (physical OS or VM host). The spare server that was switched over with is stopped, and the
 operating system will be restarted on the primary server.

takeover

 Sets a post-switchover configuration as final, and allows the spare server to take over the role of the original primary server (physical
 OS or VM host). After takeover, both servers exchange their roles: the original spare server becomes the new primary server, while
 the original primary server becomes the new spare server.

list

 Displays all registered servers (physical OS's, VM hosts, and VM guests).

The following properties are displayed for each server (when no options are specified).

Item Name	Description
PHYSICAL_SERVER	Physical server name
SERVER	Server name (physical OS or VM host)
ADMIN_IP	Admin LAN IP address

STATUS	Server status
	
	Displays one of the following:
	
	  - normal
	
	  - warning
	
	  - unknown
	
	  - stop
	
	  - error
	
	  - fatal
	
	For an explanation of possible server statuses, refer to "11.2 Resource Status" in the "Operation Guide CE".

MAINTENANCE	Current maintenance mode
	
	  - If maintenance mode is set
	
	    "ON" is displayed.
	
	  - If maintenance mode is not set
	
	    "OFF" is displayed.
	
	For details on the maintenance mode, refer to "Appendix C Maintenance Mode" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

migrate

Migrates a VM guest to a VM host on a different physical server.

set

Sets or releases VM maintenance mode for a given VM host.
Change the boot agent used when manipulating images.

Options

The following option can be specified for subcommands other than the list subcommand:

-name *resource*

Specify the name of the target server in *resource.*

The following option can be specified when using subcommands other than the list or set subcommand:

-nowait (optional)

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

The following option can be specified for the stop and restart subcommands:

-force (optional)

Use this option to forcibly stop or restart a server without shutting down its operating system.

The following option can be specified for the switchover subcommand:

-spare *spare_server* (optional)

> This defines the spare server (physical server) to be switched over with. If omitted, an appropriate server will be automatically selected from the list of spare servers already assigned to the target server.

The following options can be specified for the list subcommand:

-type {physical|vmguest|all} (optional)

> This defines the type of server (physical servers, VM guests, all servers) to be listed up.
> The following properties are displayed for each server. The option column shows the relationship between displayed properties and the option given in -type ("always" in the table below designates properties that are always displayed, independently from the option given in -type).

Item Name	Description	Options
PHYSICAL_SERVER	Physical server name	always
SERVER	Server name (for a Physical OS, VM host, or VM guest)	always

TYPE	Server type
	
	Displays one of the following:
	
	- native
	
	  Physical OS
	
	- vm_host
	
	  VM host
	
	- vm_guest
	
	  VM guest
		physical
		
		all

VM_HOST	VM host name For a VM guest, this shows the name of the VM host on which this VM guest operates.	vmguest all
ADMIN_IP	Admin LAN IP address	always
STATUS	Server status Displays one of the following: - normal - warning - unknown - stop - error - fatal For an explanation of possible server statuses, refer to "11.2 Resource Status" in the "Operation Guide CE".	always
MAINTENANCE	Current maintenance mode - If maintenance mode is set "ON" is displayed. - If maintenance mode is not set	physical all

Item Name	Description	Options
	"OFF" is displayed. For details on the maintenance mode, refer to "Appendix C Maintenance Mode" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".	

-spare (optional)

When using spare servers, this shows the spare server(s) (physical server) assigned to each server.
The following properties are displayed for each server.

Item Name	Description
SERVER	Server name (physical OS or VM host)
PRIMARY	Primary server Name of the physical server that will be switched over with a spare server during a server switchover.
SPARE	Spare server Name of the spare server (switchover destination) assigned to the primary server. If multiple spare servers are assigned, the name of each spare server is displayed using commas (",") as a delimiters.

VLAN_SWITCH (*1)	Network re-configuration flag
	
	This flag defines whether or not network settings will be re-configured during a server switchover.
	
	- When network settings are re-configured during server switchover
	
	  "ON" is displayed.
	
	- When network settings are not re-configured during server switchover
	
	  "OFF" is displayed.

AUTO_SWITCH	Auto-Recovery flag
	
	This flag defines whether or not Auto-Recovery is enabled.
	
	- When Auto-Recovery is enabled
	
	  "ON" is displayed.
	
	- When Auto-Recovery is not enabled
	
	  "OFF" is displayed.

ACTIVE	Active server Displays the name of the currently active physical server.

SWITCHOVER_STATE	Switchover state
	
	Displays the current switchover state. Displays one of the following:
	
	- normal
	
	  Normal status (There are no switchover, failback, or takeover operations in progress).
	
	- switchover running
	
	  A switchover operation is in progress.
	
	- switchover completed

Item Name	Description
	A switchover operation has been completed.
	- failback running
	A failback operation is in progress.
	- takeover running
	A takeover operation is in progress.

*1: When a LAN switch blade is in IBP mode, the details of settings are displayed in this parameter.

-bootagt (optional)

Displays the information about the boot agent used when manipulating images.
The following properties are displayed for each server.

Item Name	Description
PHYSICAL_SERVER	Physical server name
BOOT_AGENT	Set boot agent Displays one of the following: - DOS - Windows PE

The following options can be specified for the migrate subcommand:

-name *guest_name*

Specify the name of the destination target VM guest in *guest_name*.

-to *vmhost*

Specify the name of the destination VM host in *vmhost*.

-mode {live|cold} (optional)

The type of migration method to perform is given for mode.
Depending on the power state of the VM guest to migrate, only one of those types may be available. When omitted, the appropriate type will be chosen depending on the state of the VM guest.
The following values can be specified.

live

Performs a live migration: migration of an active (powered-on) VM guest.

cold

Performs a cold migration: migration of an inactive (powered-off) VM guest.

The power status of the VM guest after migration will be the same as it was before migration.

-home

Specify when performing migration to the VM Home Position.

-name *vmhost* (optional)

Specify the name of the operation target VM host in *vmhost*.

The following options can be specified for the set subcommand:

-attr {vmm_mode={maintenance|active}|vmware.maintenance={maintenance|active}}

Sets or releases VM maintenance mode for the target VM host.

-attr vmm_mode={maintenance|active|maintenance_with_move}

Sets or releases VM maintenance mode for the target VM host, or migrates the VM guest when set.

-attr bootagt={dos|winpe}

Changes the boot agent used when manipulating images to DOS or Windows PE.

When using the Windows manager and the managed server has the following configuration, this option must be specified before manipulating images to change the boot agent settings.

- SAN data environments using a built-in disk boot, and a physical WWN or VIOM, must be converted to DOS.

- In a SAN boot environment using HBA address rename and where one of the following conditions applies, it needs to be changed to Windows PE.

    - Using the Red Hat Enterprise Linux 6 ext4 file system

    - Server using UEFI

This option cannot be specified for the following models:

- SPARC Enterprise

- PRIMEQUEST

Requirements

Permissions

One of the following permissions is required:

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Examples

- To display a list of registered servers and their properties

```
>rcxadm server list <RETURN>
PHYSICAL_SERVER    SERVER       ADMIN_IP      STATUS    MAINTENANCE
---------------    ------       --------      ------    -----------
blade01            WebServer01  192.168.1.4   normal    ON
rackserver01       AppServer01  192.168.1.2   normal    OFF
rackserver02       DBServer01   192.168.1.6   stop      OFF
rackserver03       DBServer02   192.168.1.7   normal    ON
```

- To display spare server settings

```
>rcxadm server list -spare <RETURN>
SERVER     PRIMARY      SPARE               VLAN_SWITCH  AUTO_SWITCH  ACTIVE
SWITCHOVER_STATE
------     -------      -----               -----------  -----------  ------
---------------
Server1    blade1-1     blade1-9            ON           ON           blade1-9
failback running
Server2    blade1-2     blade1-9,blade1-10  OFF          ON           blade1-2
normal
```

- To display a list of physical servers (including physical OS's and VM hosts)

```
>rcxadm server list -type physical <RETURN>
PHYSICAL_SERVER   SERVER       TYPE       ADMIN_IP         STATUS   MAINTENANCE
---------------   ------       ----       --------         ------   -----------
blade1-1          Server1      native     192.168.3.121    stop     ON
blade1-10         -            -          192.168.3.130    stop     -
blade1-2          Server2      native     192.168.3.122    normal   OFF
blade1-3          Server3      native     192.168.3.123    stop     ON
blade1-5          Server5      native     192.168.3.125    normal   ON
blade1-7          vmesx1       vm_host    192.168.3.127    normal   OFF
blade1-8          Server8      native     192.168.3.128    normal   OFF
blade1-9          -            -          192.168.3.129    stop     -
```

- To display a list of VM guests

```
>rcxadm server list -type vmguest <RETURN>
PHYSICAL_SERVER   SERVER       VM_HOST      ADMIN_IP         STATUS
---------------   ------       -------      --------         ------
blade1-7          vm-1         vmesx1       192.168.3.127    normal
blade1-7          vm-2         vmesx1       192.168.3.127    normal
```

- To display a list of all server resources (including physical OS's, VM hosts, and VM guests)

```
>rcxadm server list -type all <RETURN>
PHYSICAL_SERVER   SERVER       TYPE       VM_HOST      ADMIN_IP         STATUS
MAINTENANCE
---------------   ------       ----       -------      --------         ------
-----------
blade1-1          Server1      native     -            192.168.3.121    stop     ON
blade1-10         -            -          -            192.168.3.130    stop     -
blade1-2          Server2      native     -            192.168.3.122    normal   OFF
blade1-3          Server3      native     -            192.168.3.123    stop     ON
blade1-5          Server5      native     -            192.168.3.125    normal   ON
blade1-7          vmesx1       vm_host    -            192.168.3.127    normal   OFF
blade1-7          vm-1         vm_guest   vmesx1       192.168.3.127    normal   OFF
blade1-7          vm-2         vm_guest   vmesx1       192.168.3.127    normal   OFF
blade1-8          Server8      native     -            192.168.3.128    normal   OFF
blade1-9          -            -          -            192.168.3.129    stop     -
```

- To migrate an active VM guest

```
>rcxadm server migrate -name vm_guest01 -to vm_host02 -mode live <RETURN>
```

- To migrate an inactive VM guest

```
>rcxadm server migrate -name vm_guest01 -to vm_host02 -mode cold <RETURN>
```

- When displaying the information for the current boot agent

```
>rcxadm server list -bootagt <RETURN>
PHYSICAL_SERVER   BOOT_AGENT
---------------   ----------
blade1-1          DOS
blade1-10         Windows PE
blade1-2          DOS
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

> 📒 **Note**
> ....
>
> - A VM guest can be configured to automatically start or stop whenever its VM host starts up or shuts down. This can be achieved by setting up the VM guest's startup and shutdown options in the server virtualization software used.
>   For more information, please refer to the server virtualization software manual.
>
> - As a result of power operation being performed on a VM guest, an error may occur if the VM guest is moved to another VM host and processes executed.
>   Refer to "D.3 Functional Differences between Products" in the "Design Guide VE" for details.
>
> - VM guests should be properly configured in order to use the "stop" or "restart" subcommands.
>   Stopping or restarting a VM guest that was not properly configured will result in an error unless the -force option is specified.
>   Refer to "D.2 Configuration Requirements " in the "Design Guide VE" for details.
>
> - For PRIMEQUEST servers, the warning message will not be displayed, even if there is a chance that the switchover will not be correctly performed using Reserved SB settings.
>
> - If ServerView Deployment Manager is used on the admin LAN, the switchover and failback subcommands cannot be used if the managed servers do not fulfill the following conditions.
>   For more details, please refer to "Appendix B Co-Existence with ServerView Deployment Manager" in the "Setup Guide VE".
>
>   - Servers in local boot environments
>
>   - Servers in SAN boot environments without VIOM profiles
>
> - The changes to the boot agent are valid while the physical server is registered. After reregistering the physical server, change the boot agent using the command if necessary.
> ....

This section explains the additional functions of the Cloud Edition.

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

Name

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

[Linux Manager]
/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.

3.12 rcxadm storage

Name

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

[Linux Manager]
/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 3.48 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 3.49 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
```

3.13 rcxadm tenant

Name

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

[Linux Manager]
/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,...]
[-cut_off_date cut_off_date] [-accounting_mail accounting_mail_address]} [-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 3.50 Tenant Information (when omitting the -name option)

Item Name	Description
NAME	Tenant name
LABEL	Tenant label

- When specifying -name for the option

Table 3.51 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 3.52 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

- Cut off date

- Accounting mail address

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 "13.10 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.

-cut_off_date *cut_off_date*

>   Specify the cut off date in *cut_off_date*.

-accounting_mail *accounting_mail_address*

>   Specify the destination e-mail address for the accounting information in *accounting_mail_address*.

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
```

3.14 rcxadm vstorage

Name

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

[Linux Manager]
/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 3.53 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 "10.1.1 Allocating Storage" in the "Design 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 "C.5.9 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.

Item Name	Description

	[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.
	
	  - 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 3.54 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 ("-").

Item Name	Description

	For details on the virtual storage resources that Thin Provisioning and Automatic Storage Layering can be applied to, refer to "10.1.1 Allocating Storage" in the "Design 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 "C.5.9 Advisory Notes for Oracle VM Usage" in the "Setup Guide CE".

USED SIZE	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	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
```

3.15 rcxadm tenant [for Basic Mode]

Name

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

[Linux Manager]
/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 3.55 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 3.56 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

Item Name	Description
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 3.57 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 "3.6 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 "3.6 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 "13.17 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
```

Chapter 4 Image Operations

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

4.1 rcxadm image

Name

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

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

Format

```
rcxadm image backup -server resource [-comment comment] [-nowait] [-force]
rcxadm image restore -server resource [-version version] [-nowait]
rcxadm image create -server resource -name image [-comment comment] [-nowait]
rcxadm image deploy -server resource [:hostname][,resource[:hostname]]... -name image [-version
version] [-nowait]
rcxadm image delete -server resource -version version
rcxadm image delete -name image -version version
rcxadm image list -type {backup|cloning} {[-server resource]|[-name image]}
rcxadm image list -server [resource]
```

Information

rcximage is an abbreviated form of the rcxadm image command. Both forms provide the same subcommands and options, and produce the same results.

Point

A list of system images can be obtained using one of the following two methods.

   a. **rcxadm image list -type backup [-server** *resource*]

   b. **rcxadm image list -server [***resource*]

Method b. is only supported only for compatibility purposes with Systemwalker Resource Coordinator Virtual Server Edition V13.2.0 and V13.3.0. As future versions may not support this method, it is recommended to use method a. instead.

Description

rcxadm image is the command used to perform operations involving system images and cloning images.
Backup and restore operations are done by collecting a system image from a managed server (physical OS or VM host) and storing it on the admin server disk. This system image can later be restored to the same managed server.
Cloning is done by collecting a cloning image from a reference server, and storing it on the admin server disk. Cloning images can later be distributed to other servers (either individually or simultaneously to multiple servers). All image operations (backup, restore, and cloning) are performed remotely over the network.
Before using this command, refer to the overview and sections about each operation mentioned in the following manuals.

 - "Chapter 16 Backup and Restore" in the "User's Guide VE"

 - "Chapter 12 Cloning [Physical Servers]" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"

If any one of the "backup", "restore", "create", or "deploy" subcommands is executed, the target server is automatically placed into maintenance mode until processing completes. Once complete, the server is set back to its original mode.

Note

- The number of cloning image versions that can be kept for a given cloning image (identified by its name attribute) is limited.
  Using the create subcommand to collect a new cloning image when the limit has already been reached will fail and display an error.
  In such a case, use the delete subcommand to delete one of the existing versions before collecting a new version of the cloning image.
  Existing versions can be checked using the list subcommand.
  By default, this limit is set to 3 versions per cloning image.
  For details on changing the maximum number of cloning image versions, refer to "6.4 Changing the Maximum Number of Cloning Image Versions (Physical Servers)" or "6.5 Changing the Maximum Number of Cloning Image Versions (Virtual Servers)" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- This command is not available if ServerView Deployment Manager is used on the admin LAN. For more details, please refer to "Appendix B Co-Existence with ServerView Deployment Manager" in the "Setup Guide VE".

Subcommands

backup

    Backs up a system image from the specified server (physical OS or VM host) to the admin server.

restore

    Restores a system image to the specified server (physical OS or VM host).

create

    Collects a cloning image from the specified server (physical OS).

deploy

    Deploys a cloning image to one or multiple servers (physical OS).

delete

    - System image deletion

      Deletes a system image belonging to the specified server (physical OS or VM host).

    - Cloning image deletion

      Deletes the specified cloning image.

list

  System image list

    Displays a list of system images for the specified server.
    The following properties are displayed for each server.

Item Name	Description
SERVERNAME	Name of the server (physical OS or VM host) from which the system image was backed up
VERSION	Version number of the system image
BACKUPDATE	Backup date and time of the system image
COMMENT	Comment describing the system image

  Cloning image display

    Displays a list of cloning images for the specified server.
    The following properties are displayed for each server.

Item Name	Description
NAME	Name of the cloning image
VERSION	Version of cloning images
CREATIONDATE	Creation date and time of the cloning image
COMMENT	Comment describing the cloning image

Options

The following option can be specified for the backup, restore, create, or deploy subcommands:

-nowait (optional)

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

The following option can be specified for the backup, restore or delete subcommand:

-server *resource*

Specify the name of the target server (physical OS or VM host) in *resource*.

The following options can be specified for the deploy or delete subcommand:

-name *image*

Specify the name of the target cloning image in *image*.

-version *version* (optional)

Specify the version of the target cloning image to distribute in *version*.
This option can be omitted when deploying the latest cloning image version.

The following option can be specified for the backup subcommand:

-comment *comment* (optional)

Specify a *comment* to help identify the system image.
Enter a string no longer than 128 characters (either single or double-byte characters).
Note that percent signs ("%"), backslashes ("\") and double quotes (") cannot be used for *comment*.

Note

....

When using blank spaces in *comment*, enclose the whole character string, *comment*, in double quotes (").
....

-force (optional)

Forces execution of a server backup when the target server's status is one of the following:

- normal

- warning

- unknown

- error

- fatal

The following option can be specified for the restore subcommand:

-version *version* (optional)

> Specify the version number of the system image to restore in *version*.
> If omitted, the latest version of the system image will be restored.

The following options can be specified for the create subcommand:

-server *resource*

> Specify the name of the target server (physical OS) in *resource*.

-name *image*

> Specify a name to assign to the collected cloning image in *image*.
> Enter a string that is no more than 32 characters long, where the first character is a letter and the remaining characters are alphanumeric characters or underscores ("_").

-comment *comment* (optional)

> Specify a *comment* to help identify the cloning image.
> Enter a string no longer than 128 characters (either single or double-byte characters).
> Note that percent signs ("%"), backslashes ("\") and double quotes (") cannot be used for *comment*.

📖 Note

> When using blank spaces in *comment*, enclose the whole character string, *comment*, in double quotes (").

The following option can be specified for the deploy subcommand:

-server *resource*[[:*hostname*],...]

> Specify the name of the server(s) (physical server) to deploy a cloning image to in *resource*.
> Multiple server names can be specified using commas (",").
> The name attributed to a server after deployment can be specified in *hostname*. This is done by adding a colon (":") and the *hostname* string behind each physical server's resource identifier string. If the *hostname* string is omitted, the post-deployment server name is set to the following.
>
> - When a physical OS has not been registered
>
>   Physical server (*resource*) name
>
> - When a physical OS has been registered
>
>   Physical OS name
>
> Use the following syntax for the *hostname*.
>
> [Windows]
> A string of up to 63 characters, including alphanumeric characters, underscores ("_"), and hyphens ("-").
> Hostnames made of only numbers are not allowed.
>
> [Linux]
> A string of up to 64 characters, including alphanumeric characters, hyphens ("-"), periods ("."), and underscores ("_").

📖 Note

> When using SUSE Linux Enterprise Server, server names including periods (".") cannot be configured for post-deployment server names of cloning images.

📘 Information

> As the physical OS name of a managed server refers to that server's hostname, it is recommended to use only characters specified in the RFC (Request For Comments) 952. Those characters are listed below.

- Alphanumeric characters

- Hyphens ("-")

- Periods (".") [Linux]

....

The following options can be specified for the delete subcommand:

-version *version*

Specify the version number of the system image or cloning image to delete in *version*.

The following options can be specified for the list subcommand:

-type {backup|cloning}

Specify the type of image to list up.

- If "backup" is specified

A list of system images is displayed.

- If "cloning" is specified

A list of cloning images is displayed.

-server *resource*

Specify the name of the server (physical OS or VM host) for which to display system images in *resource*. This option should not be specified if the "-type" option has been set to "cloning".

- If the "-type" option is set

Omitting this option will output a list of system images for all managed servers.

- If the "-type" option is not set

The same list of system images (for all servers) can be output by specifying only the -server option without specifying a *resource* (this command usage differs from that of Systemwalker Resource Coordinator Virtual Server Edition V13.2.0 and V13.3.0. Refer to "Point" at the top of this section for details).

-name *image*

Specify the name of the cloning image to display in *image*.
If omitted, a list of all cloning images will be displayed.

Requirements

Permissions

One of the following permissions is required:

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Examples

- To create a system image backup

> **rcxadm image backup -server blade07 -comment "Database Server-2"** <RETURN>

- To restore a system image to a managed server

```
>rcxadm image restore -server blade07 -version 2 <RETURN>
```

- To delete a system image

```
>rcxadm image delete -server blade07 -version 2 <RETURN>
```

- To display a list of all system images

```
>rcxadm image list -type backup -server blade07 <RETURN>
SERVERNAME    VERSION    BACKUPDATE          COMMENT
----------    -------    ----------          -------
blade07       2          2007/11/01-10:06:35 Database Server-1
blade07       3          2007/11/12-15:16:55 Database Server-2
```

- To display a list of all system images

```
>rcxadm image list -type backup <RETURN>
SERVERNAME    VERSION    BACKUPDATE          COMMENT
----------    -------    ----------          -------
blade01       2          2007/11/01-10:06:35 Application Server-1
blade01       3          2007/11/12-15:16:55 Application Server-2
blade05       2          2007/12/01-10:06:35 File Server-1
blade05       3          2007/12/12-15:16:55 File Server-2
blade07       2          2007/01/31-20:46:25 Database Server-1
```

- To collect a cloning image

```
>rcxadm image create -server blade01 -name AppImage -comment "Windows" <RETURN>
```

- To deploy a cloning image

```
>rcxadm image deploy -server blade08:db02,blade09 -name AppImage -version 2 <RETURN>
```

- To delete a cloning image

```
>rcxadm image delete -name AppImage -version 2 <RETURN>
```

- To display a list of image versions for a given cloning image

```
>rcxadm image list -type cloning -name AppImage <RETURN>
NAME        VERSION    CREATIONDATE        COMMENT
----        -------    ------------        -------
AppImage    1          2008/11/12-16:54:05 Windows
AppImage    2          2008/11/13-10:16:53 Windows+patch
```

- To display a list of all cloning images

```
>rcxadm image list -type cloning <RETURN>
NAME        VERSION    CREATIONDATE        COMMENT
----        -------    ------------        -------
AppImage    1          2008/11/12-16:54:05 Windows
AppImage    2          2008/11/13-10:16:53 Windows+patch
DBImage     1          2008/11/13-13:21:38 Redhat
DBImage     2          2008/11/14-04:39:27 -
```

Exit Status

This command returns the following values:

0

    The command executed successfully.

non-zero

    An error has occurred.

This section explains the additional functions of the Cloud Edition.

Name

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

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

Format

```
rcxadm image create -server resource -name image [-comment comment] [-to pool] [-storage storagename]
[-attr disk=all] [-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. Collection methods for virtual servers can be specified by using the -attr option.

  rcxadm image create -server *resource* **-name** *image* **[-comment** *comment*] **[-to** *pool*] **[-storage** *storagename*] **[-attr disk=all] [-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

The number of cloning image versions that can be kept for a given cloning image (identified by its name attribute) is limited.

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 "5.9 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 4.1 Cloning Image Information

Item Name	Description
NAME	Name of the cloning image
VERSION	Version of cloning images
CREATIONDATE	Creation date and time of the cloning image
COMMENT	Comment describing the cloning image

   - For snapshots

      Table 4.2 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
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 4.3 Detailed Information of Cloning Images

Item Name	Description
NAME	Name of the cloning image
VERSION	Version of cloning images
CREATIONDATE	Creation date and time of the cloning image
TYPE	VM type of a cloning image [VMware] VMware [Hyper-V] Hyper-V [Xen] Xen [KVM] KVM [Oracle VM] Oracle VM
COMMENT	Comment describing the cloning image

- For snapshots

Table 4.4 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 4.5 Detailed Information of Cloning Images

Item Name	Description
NAME	Name of the cloning image
VERSION	Version of cloning images

Item Name	Description
CREATIONDATE	Creation date and time of the cloning 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
COMMENT	Comment describing the cloning image

*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 18 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**
>
> When using blank spaces in *comment*, enclose the whole character string, *comment*, in double quotes (").

-online

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

-name *image*

Specify a name to assign to the collected cloning image in *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.

-attr disk=all

Specify this option to collect cloning images including data disks for L-Servers.
This option can be specified when the target L-Server satisfies the following conditions:

- The server type is virtual

- The VM type is VMware or Hyper-V

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

Table 4.6 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 4.7 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 12 Cloning [Physical Servers]" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

[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  -
```

Chapter 5 Control and Environment Setup

This chapter explains the commands used for control and environment setup of the manager and agents that comprise Resource Orchestrator.

5.1 deployment_service_uninstall

Name

- Manager

  [Windows Manager]
  Installation_folder**SVROR\Manager\bin\deployment_service_uninstall.bat** - Uninstallation of the related services

  [Linux Manager]
  /opt/FJSVrcvmr/bin/deployment_service_uninstall.sh - Uninstallation of the related services

- Agent

  [Windows]
  Installation_folder**Agent\bin\deployment_service_uninstall.bat** - Uninstallation of the related services

  [Linux]
  /opt/FJSVrcxat/bin/deployment_service_uninstall.sh - Uninstallation of the related services

Format

```
deployment_service_uninstall.bat
deployment_service_uninstall.sh
```

Description

deployment_service_uninstall is the command used to uninstall the related services from Resource Orchestrator.
When installing ServerView Deployment Manager in environments where Resource Orchestrator has been installed, run this command after installing Resource Orchestrator.
Please stop managers and agents before using this command.
After using this command, please start managers and agents.

For information on starting and stopping managers, refer to "2.1 Starting and Stopping the Manager" in the "Operation Guide CE".
For information on starting and stopping agents, refer to "2.2 Starting and Stopping the Agent" in the "Operation Guide CE".

Requirements

Permissions

  OS Administrator

Location

  Admin server, managed server

Examples

- To uninstall the related services from manager

  > **deployment_service_uninstall.bat** <RETURN>

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

5.2 rcxmigrate_oc

Name

[Windows Manager]
Installation_folder**Manager\bin\rcxmigrate_oc** - Migrating overcommit configuration information

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxmigrate_oc - Migrating overcommit configuration information

Format

```
rcxmigrate_oc
```

Description

enable_ui_setting is the command to migrate the information described in the overcommit definition file to the new configuration methods, when executing upgrade from ROR V2.3.0 or V3.0.0.

Only OS administrators can execute this command.

🅿 Point
. . . .

- This command is used to migrate the overcommit configuration information.

  Do not use this command for any purpose other than migration.

- For details on how to migrate the configuration methods for the overcommit function, refer to "G.1.1 Overcommit Definition Files" in the "Setup Guide CE".

- The modified settings cannot be enabled, even if modifying the overcommit definition files, after migrating the overcommit configuration information using this command.

  After migrating the overcommit setting information using this command, configure the overcommit settings, referring to "Chapter 20 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

- If invalid pool names are contained in the overcommit definition file, those definitions are ignored and only the setting information of valid pool names are migrated.
. . . .

5.3 rcxadm agtctl

Name

[Windows] [Hyper-V]
Installation_folder**Agent\bin\rcxadm agtctl** - Agent control

[Linux] [VMware] [Xen] [KVM]
/opt/FJSVrcxat/bin/rcxadm agtctl - Agent control

[Solaris]
/opt/FJSVrcvat/bin/rcxadm agtctl - Agent control

Format

```
rcxadm agtctl start
rcxadm agtctl stop
rcxadm agtctl modify -manager ip
rcxadm agtctl snap [-dir directory] [-full]
```

Description

rcxadm agtctl is the command used to start and stop agents, collect troubleshooting data and modify the admin LAN IP address of the manager that is registered in the agent.

For information on starting and stopping agents, refer to "2.2 Starting and Stopping the Agent" in the "Operation Guide CE".
For information on collecting troubleshooting data, refer to "1.1.1 Collecting Initial Troubleshooting Data" and "1.1.2 Collecting Exhaustive Troubleshooting Data" in the "Troubleshooting".
For information on changing the manager's admin LAN IP address, refer to "6.1 Changing Admin IP Addresses" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

Subcommands

start

    Starts the Agent.

stop

    Stops the Agent.

modify [Physical server] [Hyper-V]

    Modifies the admin LAN IP address of the manager that is registered in the agent.

snap

    Collects troubleshooting data from the managed server.

    The collected data is stored in the following compressed files:

    [Windows] [Hyper-V]
    rcxtssnap_*server_name*.jar

    [Linux] [Solaris] [VMware] [Xen] [KVM]
    When collecting troubleshooting data, data is compressed on managed servers using the bzip2, the gzip, or the compress command. Depending on the command used, the name assigned to troubleshooting data will be one of the following.
    Resource Orchestrator uses the command with the best compression ratio (bzip2 -> gzip -> compress) available on the managed server.

    - When compressing with bzip2

      rcxtssnap_*server_name*.tar.bz2

    - When compressing with gzip

      rcxtssnap_*server_name*.tar.gz

    - When compressing with compress

      rcxtssnap_*server_name*.tar.Z

Options

Specify the following options when using the modify subcommand:

-manager *ip*

Specify the new manager IP address.

The following options can be specified for the snap subcommand:

-dir *directory*(Optional)

Specify the folder used to store the collected data in *directory*.
If this option is omitted, the data will be stored in the following folder:

[Windows] [Hyper-V]
The folder defined by the TEMP environment variable

[Linux] [Solaris] [VMware]
/tmp

 Note

- When using full paths in the *dir* and the TEMP environment variable

    The length of the full path string must not exceed 100 characters. If more than 100 characters are used the troubleshooting data cannot be collected, and message number 67131 or message number 67265 will be displayed.

- When using relative paths in the *dir* and the TEMP environment variable

    When specifying a relative folder path, its equivalent full path must not exceed 100 characters (calculated using the Windows 8.3 format (*1)). If the converted full path string exceeds 100 characters, the troubleshooting data will not be collected, and the "Message number 67131" will be displayed.

    *1: This rule specifies that the file name can be a maximum of 8 characters, with a file extension of up to 3 characters

- The following symbols cannot be specified in the name of the folder in which the collected data is stored:

    """, "|", "*", "?", "/", "<", ">", ",", "%", "&", "^", "=", "!", ";"

[Windows] [Hyper-V]

- When specifying a folder using a relative path, specify the folder adding ".\" as the first characters.

    -dir .*folder_name*

-full (Optional)

Collects exhaustive managed server troubleshooting data. This data is required to isolate the cause of a problem which could not be identified from initial troubleshooting data alone.
This requires significantly more disk space for the generated data files. This option can be omitted when collecting troubleshooting data for an initial investigation (first diagnostic).

Requirements

Permissions

OS Administrator

Location

Managed server

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

5.4 rcxadm authctl

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm authctl** - user management using directory service

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm authctl - user management using directory service

Format

```
rcxadm authctl register {-host hostname|-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 {-host hostname|-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.

```
host: Host name or 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 V2.3.0, to the management information of Resource Orchestrator.

> When user information is being managed using a directory service or Single Sign-On is performed with Resource Orchestrator V2.3.0, 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

-host *hostname*

> Specify the host name for the directory server to register using an FQDN or an IP address.

-ip *ip*

> Specify the IP address of the directory server to register. This option is for compatibility. Use the -host option.

-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>
host: myhost.fujitsu.com
port: 636
base: dc=fujitsu,dc=com
bind: cn=manager,dc=fujitsu,dc=com
method: SSL
auth: serverview
```

5.5 rcxadm certctl

Name

- Manager

  [Windows Manager]
  Installation_folder**SVROR\Manager\bin\rcxadm certctl** - SSL certificate operations

  [Linux Manager]
  /opt/FJSVrcvmr/bin/rcxadm certctl - SSL certificate operations

- Agent

  [Windows] [Hyper-V]
  Installation_folder**Agent\bin\rcxadm certctl** - SSL certificate operations

  [Linux] [VMware] [Xen] [KVM]
  /opt/FJSVrcxat/bin/rcxadm certctl - SSL certificate operations

  [Solaris]
  /opt/FJSVrcvat/bin/rcxadm certctl - SSL certificate operations

Format

```
rcxadm certctl list
rcxadm certctl delete -alias alias
rcxadm certctl init
```

Description

rcxadm certctl is the command used to manage the certificates required for SSL communication between a manager and its agents.
For more information regarding this command, refer to "An Error may Occur during Cloning after the Manager is Reinstalled." in "4.1 Operations for Images or Cloning Images" of the "Troubleshooting".

Note

The manager or agent must be stopped in order to use this command.

For information on stopping managers and their agents, refer to "5.14 rcxadm mgrctl" and "5.3 rcxadm agtctl".

Subcommands

list

Displays a list of current SSL certificates. Each certificate stored in the certificates data file is indexed by a unique alias (*1). The example below shows how to display aliases using the list subcommand.

Example

```
Truststore:
--------------

Keystore type: jks
Keystore provider: SUN

The keystore contains 4 entries.

client1 (*1), May 10, 2007, trustedCertEntry,
Certificate fingerprints (MD5): 0F:4E:1C:DB:19:AE:3B:82:9D:74:93:6C:46:D8:7C:D2
...
```

delete

Deletes the data of the designated SSL certificate.

init

Initializes the file used to store SSL certificates data.

Option

The following option can be specified for the delete subcommand:

-alias *alias*

Specify the alias of the SSL certificate to delete in *alias*.

Requirements

Permissions

OS Administrator

Location

Admin server, managed server

Examples

- To display a list of SSL certificates currently used by the manager

```
>rcxadm certctl list <RETURN>
```

- To delete an SSL certificate used by the manager

>**rcxadm certctl delete -alias** *alias* <RETURN>

- To initialize the file used by the manager to store SSL certificates data

>**rcxadm certctl init** <RETURN>

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

5.6 rcxadm config

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm config** - import and export of configuration information

[Linux Manager]
/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 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 the XML file, refer to "Chapter 13 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.

show

Displays the details of the settings for this product that were exported.

Options

-dir *directory*

Specify the folder 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 and 172800 (2days).

Use this option to return 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 folder to store the configuration information of the filtering target.

-outdir *outdir*

Specify the folder to store the configuration information of the filtering target.

-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
```

5.7 rcxadm dbctl

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm dbctl** - Management of the database for Resource Orchestrator

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm dbctl - Management of the database for Resource Orchestrator

Format

```
rcxadm dbctl modify -passwd
```

Description

rcxadm dbctl is the command used for management of the database for Resource Orchestrator.

Note

The manager must be stopped in order to use this command.
For information on stopping managers, refer to "5.14 rcxadm mgrctl".

Subcommands

modify

Change the database configuration for Resource Orchestrator.

Options

-password

Change the database password for Resource Orchestrator.
When the password of the OS user account (rcxdb) for use in connection with Resource Orchestrator has been changed, this command must be executed.
It is also possible to change the password for the OS user account (rcxdb) directly using this command.
When changing the password, enter the following interactively.

1. New password

2. New password for confirmation

Note

For the password, enter a string including upper case alphabetic characters, lower case alphabetic characters, and numerals. The length of the string is defined by the OS of the admin server.

Requirements

Permissions

OS Administrator

Location

Admin server

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

5.8 rcxadm deployctl

Name

[Windows Manager]
Installation_folder**Agent\\bin\\rcxadm deployctl** - Encryption of license information definition files

[Linux Manager]
/opt/FJSVrcxat/bin/rcxadm deployctl - Encryption of license information definition files

Format

```
rcxadm deployctl passwd -encrypt
```

Description

rcxadm deployctl is the command used to encrypt the administrator password on managed servers running on Windows Server 2008, after editing the license information definition file.
The license information definition file is created by installing the Resource Orchestrator Agent. With the cloning function, use this file to perform Windows license authorization.
For details on how to use this command, refer to "12.2 Collecting a Cloning Image" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

Subcommands

passwd

Encrypts the administrator password that is included in the license information definition file.

Options

-encrypt

Always specify this option when encrypting the password.

Requirements

Permissions

OS Administrator

Location

Managed server

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

5.9 rcxadm imagemgr

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm imagemgr** - Image management settings

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm imagemgr - Image management settings

Format

```
rcxadm imagemgr info
rcxadm imagemgr set -attr imagedir=dir
rcxadm imagemgr set -attr {backup|clone}.maxversion=value
```

Description

rcxadm imagemgr is the command used to change the image files folder location, or the maximum number of image versions that can be kept in Resource Orchestrator.

For details on changing the maximum number of system image versions, refer to "6.3 Changing the Maximum Number of System Image Versions" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
For details on changing the maximum number of cloning image versions, refer to "6.4 Changing the Maximum Number of Cloning Image Versions (Physical Servers)" or "6.5 Changing the Maximum Number of Cloning Image Versions (Virtual Servers)" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".
A new folder should be created when changing the location of the image file storage folder.
For details on changing the path for the image file storage folder, refer to "6.7 Changing the Image Folder Location" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

Subcommands

info

Displays current image settings (the maximum number of image versions and the location of the image files folder).
The following properties are displayed for each server.

Table 5.1 info Subcommand Display Parameters

Item Name	Description
backup.maxversion	Maximum number of system image versions
clone.maxversion	Maximum number of cloning image versions
imagedir	Location of the image files folder

set

Sets a new location for the image files folder, or sets a new limit for the number of image versions.

Options

The following options can be specified for the set subcommand:

-attr imagedir=*dir*

Specify a new location (path) for the image files folder in *dir*.
The specified folder path should match the following requirements.

- The specified path should be no more than 100 characters long

- The specified path should include none of the following characters

  """, "|", "*", "?", "/", "<", ">", ",", "%", "&", "^", "=", "!", ";"

  [Windows Manager]
  "/"

  [Linux Manager]
  "\"

- Only local folder paths are allowed (UNC paths are not permitted)

- Folders must be created beforehand

- When using blank spaces in the specified path, enclose the whole specified path in double quotes (")

- Do not add "\" to the end of the specified path

- The specified path should not point to any of the following folders

  [Windows Manager]
  Installation_folder\SVROR\Manager

  [Linux Manager]
  /opt/FJSVrcvmr

  /etc/opt/FJSVrcvmr

  /var/opt/FJSVrcvmr

- The specified folder is empty

  [Linux]
  If a partition (file-system) was specially created to store image files, this partition will include a "lost+found" folder, and therefore cannot be considered as empty.

  In that case, be sure to create and use a dedicated directory to store image files within that partition.

- The specified path should have proper security settings

  [Linux]
  For safer administration, it is recommended to use either the following permissions settings for each ancestor directory of the image files directory.

  - Give write permissions only to system administrators

  - Use the sticky bit to prevent other users from renaming or deleting image files

  If permissions are not set as above, this command may fail to change the image files folder location.

When changing the image files folder location, image files are copied to the new location, which may take some time to complete.

-attr {backup|clone}.maxversion=*value*

Changes the maximum number of image file versions.

- To change the maximum number of system image versions

  Specify backup.

- To change the maximum number of cloning image versions

  Specify clone.
  Specify a new maximum number of image file versions in *value*.
  Enter a numerical value between 1 and 10 in *value*.

Requirements

Permissions

OS Administrator

Location

Admin server

The manager should be stopped when changing the image files folder location. For information on stopping managers, refer to "2.1 Starting and Stopping the Manager" in the "Operation Guide CE".

If the ROR console was opened, the Web browser should be refreshed after changing the maximum number of image file versions.

Examples

- When specifying a path for the image files folder that includes no blank spaces

[Windows Manager]
When changing to C:\temp

>**rcxadm imagemgr set -attr imagedir=C:\temp** <RETURN>

[Linux Manager]
When changing to /tmp

rcxadm imagemgr set -attr imagedir=/tmp <RETURN>

- When specifying a path for the image files folder that includes blank spaces

[Windows Manager]
When changing to C:\temp\Resource Orchestrator VE

>**rcxadm imagemgr set -attr imagedir=C:\temp Resource Orchestrator VE"** <RETURN>

[Linux Manager]
When changing to \tmp\Resource Orchestrator VE

rcxadm imagemgr set -attr imagedir="/tmp/Resource Orchestrator VE" <RETURN>

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

This section explains the additional functions of the Cloud Edition.

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm imagemgr** - Image management settings

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm imagemgr - Image management settings

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.

5.10 rcxadm iscsictl

Name

[Windows Manager]
_Installation_folder_**SVROR\Manager\bin\rcxadm iscsictl** - operation of iSCSI boot information

[Linux Manager]
/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 "13.4.2 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.
>
> ....

5.11 rcxadm lanctl

Name

[Windows]
Installation_folder**Agent\\bin\\rcxadm lanctl** - Network parameters configuration

[Linux]
/opt/FJSVrcxat/bin/rcxadm lanctl - Network parameters configuration

Format

```
rcxadm lanctl set
rcxadm lanctl unset
rcxadm lanctl enable
rcxadm lanctl disable
```

Description

rcxadm lanctl is the command used to configure network parameters for network interfaces on managed servers.

This command cannot be used on managed servers running SUSE Linux Enterprise Server as their operating system.

Subcommands

set

Applies the settings previously defined in the network configuration file to the managed server's network interfaces.
For more information regarding the network configuration file, refer to "17.6 Network Parameter Auto-Configuration for Cloning Images" in the "User's Guide VE".

unset

Clears the network parameters previously applied to the managed server's network interfaces via the set subcommand.

enable

Enables the network parameter auto-configuration function for cloning image deployment.

disable

Disables the network parameter auto-configuration function for cloning image deployment.

Requirements

Permissions

OS Administrator

Location

Managed server

Examples

- To apply the network parameters configuration

```
>rcxadm lanctl set <RETURN>
```

- To undo the network parameters configuration

```
>rcxadm lanctl unset <RETURN>
```

- To enable the network parameter auto-configuration function

```
>rcxadm lanctl enable <RETURN>
```

- To disable the network parameter auto-configuration function

```
>rcxadm lanctl disable <RETURN>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

5.12 rcxadm license

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm license** - license control

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm license - license control

Format

```
rcxadm license add -lkey license_key
rcxadm license list
```

Description

rcxadm license is the command used to register licenses or to check the licenses already registered.

Subcommands

add

    Registers a license.

list

    To display a list of registered licenses.

Option

-lkey *license_key*

    Specify a license key to be registered in *license_key*.

Requirements

Permissions

    One of the following permissions is required:

      - OS Administrator

      - Resource Orchestrator Privileged User

Location

    Admin server

Examples

- To display a list of registered licenses.

```
>rcxadm license list <RETURN>
LICENSE_ NAME    NUMBER_OF_LICENSES  STATUS
--------------   ------------------  --------
Cloud Edition        10              Inactive
Virtual Edition      5               Active
Express              1               Active
DR option            0               -
NS option            0               -
```

Exit Status

This command returns the following values:

0

    The command executed successfully.

non-zero

An error has occurred.

5.13 rcxadm logctl

This section explains the command for operation logs of Resource Orchestrator.

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm logctl** - operation of operation logs of Resource Orchestrator

[Linux Manager]
/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 5.2 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

Items	Description
	Operation logs are saved in the following folder: [Windows Manager] *Installation_folder***SVROR\\Manager\\var\\operation**\\ [Linux Manager] /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 5.3 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

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 5.3 Increment of Days".

🅿 **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.

🅿 **Point**
....
When combined with -from or -duration, the data for the latest specified duration will be output.
....

5.14 rcxadm mgrctl

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm mgrctl** - Manager control

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm mgrctl - Manager control

Format

```
rcxadm mgrctl start
rcxadm mgrctl stop
rcxadm mgrctl modify {-ip ip |-port name=number}
rcxadm mgrctl snap [-dir directory] [-full|-all]
```

Description

rcxadm mgrctl is the command used to start and stop managers, collect troubleshooting data, and change admin LAN IP addresses and port numbers.
For information on starting and stopping managers, refer to "2.1 Starting and Stopping the Manager" in the "Operation Guide CE".
For information on collecting troubleshooting data, refer to "1.1.1 Collecting Initial Troubleshooting Data" and "1.1.2 Collecting Exhaustive Troubleshooting Data" in "Troubleshooting".
For information on methods for changing IP addresses and port numbers, refer to "6.1 Changing Admin IP Addresses" and "6.2 Changing Port Numbers" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

[Windows Manager]
If port numbers are changed, the following lines in the *Windows_system_folder*\system32\drivers\etc\services file are automatically updated.

[Linux Manager]
If the port number has been changed, the following lines in the \etc\services file will be changed automatically.

```
# service name  port number/protocol name
rcxmgr        23460/tcp
rcxweb        23461/tcp
rcxtask       23462/tcp
rcxmongrel1   23463/tcp
rcxmongrel2   23464/tcp
rcxdb         23465/tcp
```

```
nfdomain      23457/tcp
nfagent       23458/tcp
```

Note

In a clustered manager configuration, this command should not be used to start or stop the manager.

[Windows Manager]

- Start the manager

  In the Failover Cluster Management tree, right-click [Services and Applications] for managers, and select [Bring this service or application online] from the popup menu.

- Stop the manager

  In the Failover Cluster Management tree, right-click [Services and Applications] for managers, and select [Take this service or application offline] from the popup menu.

[Linux Manager]
Use the cluster system administration view (Cluster Admin) to start or stop the manager.
Refer to the PRIMECLUSTER manual for details.

Subcommands

start

Starts the manager.

stop

Stops the manager.

modify

Modifies the IP address used by the manager in the admin LAN or its port number.

snap

Collects troubleshooting data.

Options

Specify the following options when using the modify subcommand:

-ip *ip*

Specify the new manager IP address.

-port *name=number*

Specify the port name to be modified in *name*, and the new port number in *number*.
The port name can be one of the following values:

- rcxmgr

- rcxweb

- rcxtask

- rcxmongrel1

- rcxmongrel2

- rcxdb

- nfdomain

- nfagent

The following options can be specified for the snap subcommand:

-dir *directory*(Optional)

Specify the folder used to store the collected data in *directory*.
When omitted, the data will be stored in the folder specified by the TEMP environment variable:

> 📖 **Note**
> ....
>
> - When using full paths in the *dir* and the TEMP environment variable
>
>   The length of the full path string must not exceed 100 characters. If more than 100 characters are used the troubleshooting data cannot be collected, and message number 67131 or message number 67265 will be displayed.
>
> - When using relative paths in the *dir* and the TEMP environment variable
>
>   When specifying a relative folder path, its equivalent full path must not exceed 100 characters (calculated using the Windows 8.3 format (*1)). If the converted full path string exceeds 100 characters, the troubleshooting data will not be collected, and the "Message number 67131" will be displayed.
>
>   *1: This rule specifies that the file name can be a maximum of 8 characters, with a file extension of up to 3 characters
>
> - The following symbols cannot be specified in the name of the folder in which the collected data is stored:
>
>   """, "|", "*", "?", "/", "<", ">", ",", "%", "&", "^", "=", "!", ";"
>
>   [Windows Manager]
>   "/"
>
>   [Linux Manager]
>   "\"
> ....

-full (Optional)

Collects exhaustive troubleshooting data from the admin server. This data is required to isolate the cause of a problem which could not be identified from initial troubleshooting data alone.
This requires significantly more disk space for the generated data files. This option can be omitted when collecting troubleshooting data for an initial investigation (first diagnostic).

-all (Optional)

This option collects troubleshooting data not only from the admin server, but from all the managed servers as well. This option cannot be used together with the -full option.
Since only data required for initial troubleshooting is collected, it does not require much disk space. The data can also be collected quickly and sent easily via email.
Data collected from both the admin server and managed servers is stored in the directory specified by dir on the admin server from which the command was executed.
If the user account does not have administrative authority within the operating system, it is necessary to log in as a Resource Orchestrator privileged user (using the rcxlogin command) to use this option.
For information on the rcxlogin command, refer to "2.1 rcxlogin".

- Collected files

  The collected data is stored in the following compressed files:

  - Admin server

    [Windows Manager]
    rcxtssnap_*server_name*.jar
    The *server_name* part will be in lower case when the -all option is specified, or upper case when omitted.

    [Linux Manager]
    rcxtssnap_*server_name*.tar.bz2
    The *server_name* part will be in lower case when the -all option is specified, or upper case when omitted.

- Managed server

[Windows] [Hyper-V]
Managed_server\rcxtssnap_*physical_server_name*.jar

[Linux] [VMware]
Managed_server\rcxtssnap_*physical_server_name*.tar.bz2
The managed server's name is displayed in *Managed_server*.

Note

[Linux] [VMware]
When collecting troubleshooting data, data is compressed on managed servers using either the bzip2 or the gzip compression command. Depending on the command used, the resulting file extension will be either one of the following.
Resource Orchestrator uses the command with the best compression ratio (bzip2 -> gzip) available on the managed server.

- When compressing with bzip2

*.tar.bz2

- When compressing with gzip

*.tar.gz

Execution Log

- Data collection results

rcxtssnap_result.txt

This file displays collection results in the following format:

Server_name:*Result*

Server_name
For a managed server, the physical server name is displayed.
For an admin server, the server name is displayed.

Result
OK: Indicates that the data collection was successful.
NG: Indicates that the data collection failed.

Example

```
blade1:OK
blade2:NG
blade4:NG
blade5:OK
Manager:OK
```

- Error Log

Admin server
rcxtssnap_*server_name*_error.txt

Managed server

[Windows]
Managed_Server\rcxtssnap_*physical_server_name*_error.txt

[Linux]
Managed_Server\rcxtssnap_*physical_server_name*_error.txt

Requirements

Permissions

OS Administrator

Note that when logged in as a Resource Orchestrator privileged user (using the rcxlogin command), only the -all option of the troubleshooting data collection subcommand (snap) can be used.

Location

Admin server

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

This section explains the additional functions of the Cloud Edition.

Description

[Windows Manager]

If port numbers are changed, the following lines in the *Windows_system_folder*\system32\drivers\etc\services file are automatically updated.

[Linux Manager]

If the port number has been changed, the following lines in the \etc\services file will be changed automatically.

```
# 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
```

🈁 **Note**

. . . .

For Basic mode, the following values are not written.

- rcxmongrel3

- rcxmongrel4

- rcxmongrel5

. . . .

Option

-port *name=number*

Specify the port name to be modified in *name*, and the new port number in *number*.
For the port name, specify the following values:

- "rcxmgr"

- "rcxweb"

- "rcxtask"

- "rcxmongrel1"

- "rcxmongrel2"

- "rcxmongrel3"

- "rcxmongrel4"

- "rcxmongrel5"

- "rcxdb"

- "nfdomain"

- "nfagent"

Note

For Basic mode, the following values cannot be specified.

- rcxmongrel3

- rcxmongrel4

- rcxmongrel5

5.15 rcxadm nicdefctl

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm nicdefctl** - server NIC definition operations

[Linux Manager]
/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 "13.5.1 Creation" for details.

list

Displays a list of server NIC definitions managed by the manager.

The following detailed information is displayed:

Table 5.4 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 5.5 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
```

5.16 rcxadm storagemgr

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm storagemgr** - storage management software operations

[Linux Manager]
/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 5.6 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 5.7 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 using ETERNUS SF Storage Cruiser 14.2 for 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.

- When using ETERNUS SF Storage Cruiser 15 for storage management software

Specify the URL for ETERNUS SF operation management servers.

For details on the URL to specify, refer to the "ETERNUS SF Express 15.0/Storage Cruiser 15.0/AdvancedCopy Manager 15.0 Web Console Guide".

When managing only one ETERNUS server, the URL can be specified in the same way as when using ETERNUS SF Storage Cruiser 14.2.

-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:
```

5.17 rcxadm vmmgr

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm vmmgr** - VM management software operations

[Linux Manager]
/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 5.8 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 5.9 Detailed Information for VM Management Software

Item Name	Description
NAME	Name of the target VM management software
TYPE	Types of VM management software

Item Name	Description
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.

5.18 rcxmgrctl

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxmgrctl** - Starting or stopping the manager

[Linux Manager]
/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.

5.19 rcxmgrexport

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxmgrexport** - Collecting switchover information of Disaster Recovery

Format

```
rcxmgrexport -help
rcxmgrexport [-dir directory] [[-noretry]|[-timeout value]]
rcxmgrexport -interval minutes | off
rcxmgrexport -event on | off
```

Description

rcxmgrexport is the command to collect information necessary for switchover using DR (Disaster Recovery).

Subcommands

There are no subcommands.

Options

-help

Specify this option to display the instructions for using this command.

-dir directory

Specify the folder to store information necessary for switchover using Disaster Recovery. When omitted, the information is stored in the folder specified using export=*directory* in the following file.

[Windows Manager]
Installation_folder\SVROR\Manager\etc\customize_data\fa_dr.rcxprop

-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 and 172800 (2days).

Use this option to return 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

-interval *minutes* | off

Specify this subcommand when periodically starting or stopping the operations to collect the information necessary for switchover to Disaster Recovery.
When starting the operation, specify the time interval for collection in *minutes*. Specify an integer between 1 and 1439 in *minutes*.
The information is collected at the time interval specified in *minutes*. Specify "off", when stopping operations.
The information necessary for switchover using Disaster Recovery is stored in the folder specified using default=*directory* in the following file.

[Windows Manager]

Installation_folder\SVROR\Manager\etc\customize_data\fa_dr.conf

The operations to collect switchover information are the same type as operations with the -noretry option and the -timeout option omitted.

The following task will be registered in the Task Scheduler while switchover information is periodically collected.
The presence or absence of the task shows whether the operation has been enabled.

- SVROR_rcxmgrexport

You can find log of periodical switchover information collection in the following file.

[Windows Manager]
Installation_folder\SVROR\Manager\var\dr\rcxmgrexport_interval*

-event on | off

When starting or stopping operation, specify the information necessary for switchover to Disaster Recovery to collect the information at the timing of collection of configuration definition information.
Specify "on", when starting operations. Specify "off", when stopping operations.
Restart the manager to reflect the settings and enable or disable the operation.
The information necessary for switchover using Disaster Recovery is stored in the folder specified using default=*directory* in the following file.

Set values for rcxmgrexport, rcxrepdef and rcxstorage.

[Windows Manager]
Installation_folder\SVROR\Manager\etc\customize_data\fa_dr.conf

The timing of information collection is as follows.

- rcxmgrexport

    - L-Platform operations(Create, Modify, Delete, Start, Stop)

- rcxrepdef

    - Register resource to storage pool, Unregister resource from storage pool

    - Create L-Server, Delete L-Server (when Dynamic LUN mirroring is used)

    - Attach disk to L-Server, Detach disk from L-Server (when Dynamic LUN mirroring is used)

- rcxstorage

    - Create L-Server, Delete L-Server

    - Attach disk to L-Server, Detach disk from L-Server

The operations to collect switchover information are the same type as operations with the -noretry option and the -timeout option omitted.

Before starting automatic switchover information collection, edit the following file to provide necessary argument information for the rcxrepdef command which is called in the information collection

The following file will be created when configuration definition information is updated. The presence or absence of the file shows whether the operation has been enabled.

[Windows Manager]
Installation_folder\SVROR\Manager\etc\customize_data\fa_dr.rcxprop

The content of the file should be as follows.

```
#rcxrepdef_define
# (omit)
#
ccm, ,argument value for -local option, argument value for -remote
snapmirror, ,argument value for -local option, argument value for -remote
navisphere,argument value for -rhost option,argument value for -local option, argument value for -remote
solutionenabler,argument value for -rhost option,argument value for -local option, argument value for -remote
```

For details on values to be set, refer to "5.21 rcxrepdef".

The following file will be created when configuration definition information is updated. The presence or absence of the file shows whether the operation has been enabled.

[Windows Manager]
Installation_folder\SVROR\Manager\etc\event_handler\03_lplatform

You can find log of switchover information collection which is done at the events of configuration change in the following file.

[Windows manager]
Installation_folder\SVROR\Manager\var\dr\rcxmgrexport_event*

👆 Note
· ·

The collection methods enabled with the -interval option and the -event option cannot be used simultaneously. When switching the methods, execute the command specifying "off" in the option to stop the present operation. After that, execute the other command to start the new operation.
· ·

5.20 rcxrecovery

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxrecovery** - Disaster Recovery switchover

Format

```
rcxrecovery -help
rcxrecovery [-dir directory] [-map mapping_dir] [-mirror storage_file] [-vmmgr vmmgr_file] [-
nocleanup] [-allon]
rcxrecovery [-dir directory] [-map mapping_dir] [-mirror storage_file] [-vmmgr vmmgr_file] [-
nocleanup]
            [-allon] -global [-tenant tenant1[,tenant2,,,]]
rcxrecovery [-dir directory] [-map mapping_dir] [-mirror storage_file] [-vmmgr vmmgr_file]
            [-allon] -tenant tenant1[,tenant2,,,]]
```

Description

rcxrecovery is the command to switch over using DR (Disaster Recovery).

Subcommands

There are no subcommands.

Options

-help

Display the specifications of this command.

-dir *directory*

Specify the folder to store the information for the target of switchover due to Disaster Recovery. If omitted, the ManagerExport folder under the folder (hereinafter, an import definition folder) specified for import=*directory* will be specified in the following folder.

[Windows Manager]
Installation_folder\SVROR\Manager\etc\customize_data\fa_dr.rcxprop

-map *mapping_dir*

Specify the folder in which to store the mapping files defining relationships of the server names between the primary and backup sites.

When omitted, the MAP folder under the import definition folder will be used.
When the import definition folder is not defined, or there are no import definition folders, the server name cannot be mapped.

When using different server names between primary site and backup site, create a file under the MAP folder with the following content before executing rcxrecovery command. Physical server names will be replaced when importing primary configuration on backup site.

```
#PhysicalServer
Physical server name on primary site-1,Physical server name on backup site-1
Physical server name on primary site-2,Physical server name on backup site-2
: :
```

-mirror *storage_file*

Specify the intermediate files for output mapping by applying the rcxstorage command on the primary site for the replication definition files.

If omitted, the storage_file under the import definition folders will be assigned.
When the import definition folder is not defined, or there are no *storage_file* under the import definition folder, storage cannot be mapped.

-vmmgr *vmmgr_file*

Specify the VM management software definition file to register VM management software on the backup site.

If omitted, the vmmgr_file.txt under the folder specified for the -dir option will be assigned.

When the import definition folder is not defined, or there is no vmmgr_file.txt under the import definition folder, VM management software cannot be registered.

The definition file formats for VM management software are as follow: The description in the first line is the explanation of detailed definitions, and the description is not included in the vmmgr_file.txt.

```
name      soft name  ip               user name  password  physical-lserver
vcenter,  vmware-vc, 192.168.1.24,    admin,     admin,    yes
scvmm,    ms-scvmm,  192.168.100.77,  root,      root,     no
```

Each item to specify is explained below.

name:

The name of VM management software to register in Resource Orchestrator.

soft name:

Specify the type of VM management software. The only specifiable values are vmwaqre-vc(vCenter) and ms-scvmm(SCVMM).

ip:

Specify the IP address of VM management software.

user name:

Specify the user ID used when logging in to VM management software.

password:

Specify the password used when logging in to VM management software.

physical-lserver:

Specify "yes", when creating VM management software on a physical L-Server.
Specify "no", when not creating VM management software on a physical L-Server.
When specifying "no", as messages to recover VM management software are output during command execution and the process is stopped, perform recovery while operations are stopped.

-nocleanup

Specify this option when not clearing the configuration definition information of a backup site during switchover when a disaster occurs. This option is valid during switchover including global environments.
When this option is omitted, the backup site environments will be cleared. When clearing environments, whether the environments

must be deleted or not is confirmed during the command execution. When "y" is entered for an inquiry command, backup site environments are cleared and the switchover operation continues. When "n" is entered, the switchover operation is aborted.

-allon

> After switchover, specify this option when powering on all L-Servers.
> When this option is omitted, L-Servers will be powered on based on their startup status when obtaining the switchover information.

-global

> Specify this option when switching over global resources.
> When this option and the tenant option are omitted, all resources on the primary site will be switched over.

> When this option is specified, configuration definition information on backup site will be cleared.

-tenant *tenant1*

> Specify the tenant for switchover.
> When this operand is omitted by specifying the global option, the resources included in the tenant cannot be switched over.

> When this option is specified and -global option is omitted, configuration definition information on backup site will not be cleared.

Note

- When there are many imported L-Platforms or L-Servers, the information for L-Platforms or L-Servers may not be displayed in the [Usage Condition] tab. After a while, confirm the information in the [Usage Condition] tab again.

- When an error occurs while using this command, an error cause message is displayed. Take corrective action based on the displayed message, then execute the command again.If the previous command execution was done with the option that clears the configuration definition information of backup site and "cleanup of resources" ended with "completed", then specify -nocleanup option when you execute the command again. This option will skip unnecessary configuration cleanup that has already been done.

Examples

```
>rcxrecovery <RETURN>
----------------------------------------------------------
The following administrative information that exists on the
manager will be deleted.
 - L-Platform templates
 - L-Platform configuration information
 - Resource information
   - L-Servers
   - L-Server templates
   - Tenant folders
   - Resource folders
   - Image resources
   - Users
   - User groups
   - Network resources
   - Address resources
   - Resource pools
     * Resources registered in pools will be unregistered.
   - Accounting information
   - Metering logs
Please specify the "-nocleanup"option when you do not want
to delete the administrative information.
Caution: In the following case, reply "n" to this prompt to
quit the command and rerun the command with "-nocleanup"
option.
- rcxrecovery had been executed to failover the whole site
 or global resources, and
- "-nocleanup" had not been specified, and
- rcxrecovery had exited with some error after the 2nd
 process "cleanup of resources" had completed, and
```

```
- rcxrecovery has rerun after the error had been recovered.
-----------------------------------------------------------
Press [y] to continue rcxrecovery, or [n] to cancel
rcxrecovery. : y
(1/10)check of input data                  : completed
(2/10)cleanup of resources                  : completed
(3/10)copy of definition files              : completed
(4/10)import physical resources (global)    : completed
(5/10)import physical resources (tenant)    : completed
-----------------------------------------------------------
When migrating the VM management software (vCenter/SCVMM) on
a primary site using DR, if replication is not used, and VM
management software is prepared on the backup site, after DR
there are cases where VM hosts may not be recognized by the
VM management software on the backup site. Please perform
recovery manually so that the VM management software on the
backup site recognizes the VM hosts. After the recovery is
complete, press Y to continue.

However, when VM management software has been installed on a
physical L-Server of Resource Orchestrator, as the same VM
management software as the primary site will be started on
the backup site, this procedure is unnecessary. In such cases,
press Y.
-----------------------------------------------------------
Press [y] when recovery is complete. : y

(6/10) register/refresh VM management software : completed
(7/10)import virtual resources (global)      : completed
(8/10)import virtual resources (tenant)      : completed
(9/10)import middleware information          : completed
(10/10)start l-platform                     : completed
rcxrecovery finished
```

5.21 rcxrepdef

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxrepdef** - Generate replication definition file

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxrepdef - Generate replication definition file

Format

rcxrepdef ccm [-local *storage_ip* **[-remote** *storage_ip* **[=***box_id***]]] -file** *replication_file*

rcxrepdef snapmirror -local *storage_ip* **-remote** *storage_ip* **-file** *replication_file*

rcxrepdef navisphere -local *storage_ip* **-remote** *storage_ip* **-localsecfile** *local_secfile* **-remotesecfile**
remote_secfile **-file** *replication_file* **-rhost** *storage_mgr_ip*

rcxrepdef solutionenabler [-local *sid* **[-remote** *sid***]] -file** *replication_file* **[-rhost** *storage_mgr_ip***]**

Description

The rcxrepdef command creates a replication definition file from the configuration information for the replication software in the high-availability storage machine.

Subcommands

Specify the replication software. Specify the following values.

ccm : ACM-CCM (storage management software for ETERNUS)

snapmirror : SnapMirror (storage management software for NetApp)

navisphere : NaviSphere (storage management software for CLARiiON)

solutionenabler :Solution enabler (storage management software for SYMMETRIX)

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 folder name where the replication definition file will be output.

-localsecfile *local_secfile*

Specify the authentication file of the source storage device for replication.

-remotesecfile *remote_secfile*

Specify the authentication file of the destination storage device for replication.

-localsid *local_sid*

Specify the identifier of the source storage device for replication.

-remotesid *remote_sid*

Specify the identifier of the destination storage device for replication.

-rhost storage_mgr_ip

Specify the server IP address of storage management software that is deployed on a server other than that of Resource Orchestrator.

This option can be specified only when either navisphere or solutionsenabler is specified as subcommand.

📋 **Example**

· ·

> **rcxrepdef ccm -file** file1<RETURN>

· ·

5.22 rcxstorage

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxstorage** - Switchover script for operating or standby storage, or creation of disk resource comparison tables for Disaster Recovery

[Linux Manager]
/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.

Use rcxrepdef command to create the replication definition file. For details on rcxrepdef command, refer to "5.21 rcxrepdef".

-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.

5.23 rcxvmdisk

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxvmdisk** - Output of disk resource configuration information (partial) for virtual L-Servers

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxvmdisk - Output of disk resource configuration information (partial) for virtual L-Servers

Format

```
rcxvmdisk -dir The_name_of_the_folder_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 5.10 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 folder for storing output information of the rcxvmdiskagt command executed on each VM host.

🔋 **Note**

- Create the folder to specify for the -dir option in advance. It is necessary to use this folder 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 folder 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 folder.

    - Redirect the standard output of this command to the directory specified in the -dir option.

- The folder 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 folder 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-3600000e00d000000001321300010000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300020000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300030000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300040000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300050000"
size="10.0"/>
      </Disks>
    </VmHost>
    <VmHost ip="192.168.23.154">
      <Disks>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300010000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300020000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300030000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300040000"
size="10.0"/>
        <Disk name="*" path="/dev/disk/by-id/scsi-3600000e00d000000001321300050000"
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".

. . . .

5.24 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 5.11 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.

Chapter 6 Backup and Restoration Operations for Configuration Definition Information

This chapter explains how to use the commands to backup and restore the configuration of Resource Orchestrator.

6.1 rcxbackup [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxbackup** - Backup of configuration definition information

[Linux Manager]
/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 in case the configuration definition information is 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 use for backup of 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 Manager]
Installation_folder**SVROR\Manager\etc\customize_data\Manager_backup.rcxprop**

[Linux Manager]
/var/opt/FJSVrcrmr/customize_data/manager_backup.rcxprop

Storage Location of Backup Files

[Windows Manager]
Installation_folder**SVROR\Manager\var\backup**

[Linux Manager]
/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 values:

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 Manager]
    "/"

    [Linux Manager]
    "\"

  - The folder path or directory path can be specified using 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.

6.2 rcxchkmismatch [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR\Manager\sys\lserver_repair\rcxchkmismatch** - Deletion of resource folders and L-Servers

[Linux Manager]
/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
...
```

6.3 rcxkeydefbackup [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxkeydefbackup** - Backup of other definition and management information

[Linux Manager]
/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 6.1 List of Items for Backup/Restore [Windows Manager]

No	Overview	Item
1	Certificates	*Installation_folder*\SVROR\Manager\etc\opt\FJSVssmgr\current\certificate (*1)
		Installation_folder\SVROR\Manager\etc\opt\FJSVrcxdm\certificate (*1)
		Installation_folder\SVROR\Manager\sys\apache\conf\ssl.crt
		Installation_folder\SVROR\Manager\sys\apache\conf\ssl.key
2	Session encryption keys	*Installation_folder*\SVROR\Manager\rails\config\rcx_secret.key
3	Definition files	*Installation_folder*\SVROR\Manager\etc\customize_data (*1)
		Installation_folder\SVROR\Manager\etc\vm (*1)
4	Image management information (*2)	The number of system image versions
		The number of cloning images versions
		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 6.2 List of Items for Backup/Restore [Linux Manager]

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 executing the command while the manager is running, backup will be performed after the operations are completed.

When this command is executed while the manager is 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 Manager]
Installation_folder\SVROR\Manager\etc\customize_data\Manager_backup.rcxprop

[Linux Manager]
/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 Manager]
Installation_folder\SVROR\Manager\var\backup

[Linux Manager]
/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 values:

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 Manager]
        "/"

        [Linux Manager]
        "\"

    - 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, "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 after collecting the troubleshooting data.

. . . .

6.4 rcxkeydefrestore [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR****Manager****bin****rcxkeydefrestore** - Restoration of other definition and management information

[Linux Manager]
/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 values:

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 Manager]
      "/"

      [Linux Manager]
      "\"

    - 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.

6.5 rcxlogtruncate [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR\Manager\sys\lserver_repair\rcxlogtruncate** - Deletion of L-Server restoration logs

[Linux Manager]
/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>

6.6 rcxmgrbackup

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxmgrbackup** - backup the Manager

[Linux Manager]
/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 "10.3 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 values:

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 Manager]
    Slashes ("/")

    [Linux Manager]
    Backslashes ("\")

- 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.

  For details on the command, refer to "ctmg_resetbackuperror (Reset Base Backup Error)".

  > *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>

6.7 rcxmgrrestore

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxmgrrestore** - restore the Manager

[Linux Manager]
/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 values:

0

The command executed successfully.

non-zero

An error has occurred.

 Note
. . . .

Do not specify the following characters for the -dir option.

[Windows Manager]
Slashes ("/")

[Linux Manager]
Backslashes ("\")
. . . .

6.8 rcxrepair [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR\Manager\sys\lserver_repair\rcxrepair** - Checking configuration definition information to restore

[Linux Manager]
/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>
```

6.9 rcxreserveid

Name

[Windows Manager]
Installation_folder**SVROR\Manager\sys\lserver_repair\rcxreserveid** - Reservation of resource IDs

[Linux Manager]
/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 values:

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.

. . . .

6.10 rcxrestore [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxrestore** - Restoration of configuration definition information

[Linux Manager]
/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 values:

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 Manager]
>   "/"
>
>   [Linux Manager]
>   "\"
>
>   - The file path can be specified using up to 100 characters.
>
>   - For 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.
> ....

6.11 scwbackup [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR\\Manager\\bin\\scwbackup** - Backup of image file information

[Linux Manager]
/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 6.3 List of Items for Backup/Restore [Windows Manager]

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 6.4 List of Items for Backup/Restore [Linux Manager]

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 6.5 List of Items for Backup/Restore [Windows Manager]

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
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 6.6 List of Items for Backup/Restore [Linux Manager]

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 executing the command while the manager is running, backup will be performed after the operations are completed.

When this command is executed while the manager is 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 previous backup information will be reused in 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 Manager]
Installation_folder\SVROR\Manager\etc\customize_data\Manager_backup.rcxprop

[Linux Manager]
/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 Manager]
Installation_folder\SVROR\Manager\var\backup

[Linux Manager]
/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 values:

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 Manager]
        "/"

        [Linux Manager]
        "\"

    - The folder path or directory path can be specified up to 100 characters.

    - For 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.

. . . .

6.12 scwrestore [for Basic Mode]

Name

[Windows Manager]
Installation_folder**SVROR****Manager****bin****scwrestore** - Restoration of image file information

[Linux Manager]
/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 values:

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 Manager]
>   "/"
>
>   [Linux Manager]
>   "\"
>
>   - 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.

Chapter 7 User Operations

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

7.1 rcxadm user

Name

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

[Linux Manager]
/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 "13.8 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 "8.6.1 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 7.1 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 7.2 User Information (the XML format at the tenant management roles and the tenant user role)

Item Name	Description
User name	User ID
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 7.3 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 7.4 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 "13.8 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 "13.8 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
```

7.2 rcxadm usergroup

Name

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

[Linux Manager]
/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 "13.9 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 7.5 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 7.6 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

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 "13.9 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 "13.9 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
```

7.3 rcxadm user [for Basic Mode]

Name

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

[Linux Manager]
/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 7.7 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 7.8 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 "13.16 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
```

7.4 rcxadm usergroup [for Basic Mode]

Name

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

[Linux Manager]
/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 7.9 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 7.10 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 "13.9 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
```

Chapter 8 L-Server Template Operations

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

8.1 rcxadm template

Name

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

[Linux Manager]
/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 8.1 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)

- For virtual L-Servers

Table 8.2 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 8.3 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 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

Item Name	Description
	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 8.4 Detailed Information for L-Server Templates of Virtual L-Servers

Item Name	Description
Name	L-Server template name
Label	Label
Comment	Comment

DeployDisk	Disk deployment settings during image specification
	  - When configuring the settings in the same configurations as for images
	    "all" is displayed.

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

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

Item Name	Description
	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
```

Chapter 9 L-Platform Template Management Commands

This chapter explains L-Platform Template Management Commands.

9.1 cfmg_addimageinfo (Registering Image Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_addimageinfo -Registering Image Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_addimageinfo -Registering Image Information

Synopsis

cfmg_addimageinfo -xml *<image information file path>* [-n]

Functional Description

This command registers image information.
This command also registers image information if there is no cloning image for the L-Server to be imported.
To manage software and patches on the server that will be imported, use this command to register image information before importing the L-Server.
If a cloning image exists, either register it as per normal using the 9.1 cfmg_addimageinfo (Registering Image Information)command without specifying the "-n" option, or register it from the Manager View.

The image information registered by this command will not be displayed in the template manager View.

Options

-xml

This option specifies the absolute or relative path to the image information file, using a string of printable ASCII characters.
If the path includes spaces, enclose the path in double quotes.

-n (optional)

This option is only enabled for Windows Manager versions.
Even if the target cloning image does not exist in Resource Management, this option registers the image information without an error.

Note

When specifying the -n option, specify arbitrary character strings in "resourceId" and "imageName".

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_addimageinfo
 -xml c:\tmp\template_test\images\sample.xml
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_addimageinfo -xml /tmp/template_test/images/sample.xml
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.2 cfmg_addnetinfo (Registering Segment Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_addnetinfo -Registering Segment Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_addnetinfo -Registering Segment Information

Synopsis

cfmg_addnetinfo -xml **

Functional Description

This command registers segment information.

Options

-xml

This option specifies the absolute or relative path to the segment information file, using a string of printable ASCII characters.
If the path includes spaces, enclose the path in double quotes.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_addnetinfo
 -xml c:\tmp\template_test\networks\sample.xml
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_addnetinfo -xml /tmp/template_test/networks/sample.xml
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.3 cfmg_addsoft (Registering Software Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_addsoft -Registering Software Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_addsoft -Registering Software Information

Synopsis

cfmg_addsoft [-name <*software name*>] -xml <*software information file path*>

Functional Description

This command registers software information.

The software ID that has been allocated is output using the following XML format.

```
<?xml version="1.0" encoding="UTF-8"?>
<result>
    <id>[software ID]</id>
</result>
```

Options

-name (optional)

This option specifies the name of the software to be registered in the software information file, using a string of up to 85 printable ASCII characters.
If the software name includes spaces, enclose the name in double quotes.
If this option is specified, it takes priority over information in the software information file.

If this option is omitted, the software name in the software information is enabled.

If this option is omitted and there is no software name written in the software information, an error will occur.

-xml

This option specifies the absolute or relative path to the software information file, using a string of printable ASCII characters. If the path includes spaces, enclose the path in double quotes.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_addsoft -xml c:\tmp\template_test\software
\software.xml
<?xml version="1.0" encoding="Windows-31J"?>
<result>
    <id>SW00000112</id>
</result>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_addsoft -xml /tmp/template_test/software/software.xml
<?xml version="1.0" encoding="UTF-8"?>
<result>
    <id>SW00000112</id>
</result>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.4 cfmg_addtemplate (Registering Template Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_addtemplate -Registering Template Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_addtemplate -Registering Template Information

Synopsis

cfmg_addtemplate [-id <*Template ID*>] [-name <*Template name*>] -xml <*Template information file path*>

Functional Description

This command registers template information.

The template ID that has been allocated is output using the following XML format:

```
<?xml version="1.0" encoding="UTF-8"?>
<result>
    <id>[Template ID]</id>
</result>
```

Options

-id (optional)

This option specifies the template ID using a string of up to 32 printable ASCII.

A registration error will occur if the template ID is already being used.
If this option is specified, it takes priority over information in the template information file.

If this option is omitted, an ID will be automatically created.

-name (optional)

This option specifies the name of the template using a string of up to 85 printable ASCII characters.
If the software name includes spaces, enclose the name in double quotes.
If this option is specified, it takes priority over information in the template information file.

If this option is omitted, the template name in the template information is enabled.

If this option is omitted and there is no template name written in the template information, an error will occur.

-xml

This option specifies the absolute or relative path to the template information file, using a string of printable ASCII characters.
If the path includes spaces, enclose the path in double quotes.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_addtemplate -xml c:\tmp\template_test
\sample1.xml
<?xml version="1.0" encoding="Windows-31J"?>
<result>
    <id>template-12c95768de8</id>
</result>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_addtemplate -xml /tmp/template_test/sample1.xml
<?xml version="1.0" encoding="UTF-8"?>
<result>
```

```
    <id>template-12c95768de8</id>
</result>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.5 cfmg_deleteimageinfo (Deleting Image Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_deleteimageinfo -Deleting Image Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_deleteimageinfo -Deleting Image Information

Synopsis

cfmg_deleteimageinfo [-f] -id <*cloning Image id*>

Functional Description

This command deletes image information.

Options

-f (optional)

This option executes the deletion without confirmation.
If this option is omitted, a confirmation prompt will be output before the deletion takes place.

-id

This option specifies the cloning image id of the image information file to be deleted.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_deleteimageinfo -id image-1372772cae66
Do you want to delete the image information? (Y/N) y
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_deleteimageinfo -id image-1372772cae66
Do you want to delete the image information? (Y/N) y
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.6 cfmg_deletenetinfo (Deleting Segment Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_deletenetinfo -Deleting Segment Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_deletenetinfo -Deleting Segment Information

Synopsis

cfmg_deletenetinfo [-f] -id <*Resource ID*>

Functional Description

This command deletes segment information.

Options

-f (optional)

This option executes the deletion without confirmation.
If this option is omitted, a confirmation message will be output before the deletion takes place.

-id

This option specifies the resource ID to be deleted.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_deletenetinfo -id ST01-M_1446
Do you want to delete the segment? (Y/N) y
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_deletenetinfo -id ST01-M_1446
Do you want to delete the segment? (Y/N) y
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.7 cfmg_deletesoft (Deleting Software Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_deletesoft -Deleting Software Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_deletesoft -Deleting Software Information

Synopsis

cfmg_deletesoft [-f] -id <*software ID*>

Functional Description

This command deletes software information.

Options

-f (optional)

This option executes the deletion without confirmation.
If this option is omitted, a confirmation prompt will be output before the deletion takes place.

-id

This option specifies the software ID for the software information file to be deleted.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_deletesoft -id SW00000112
Do you want to delete the software information? (Y/N) y
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_deletesoft -id SW00000112
Do you want to delete the software information? (Y/N) y
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.8 cfmg_deletetemplate (Deleting Template Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_deletetemplate -Deleting Template Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_deletetemplate -Deleting Template Information

Synopsis

cfmg_deletetemplate [-f] -id <*Template ID*>

Functional Description

This command deletes template information.

Options

-f (optional)

This option executes the deletion without confirmation.
If this option is omitted, a confirmation prompt will be output before the deletion takes place.

-id

This option specifies the template ID of the template information to be deleted.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_deletetemplate -id template-12c95768de8
Do you want to delete the template? (Y/N) y
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_deletetemplate -id template-12c95768de8
Do you want to delete the template? (Y/N) y
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.9 cfmg_listimageinfo (Displaying Image Information List)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_listimageinfo -Displaying Image Information List

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_listimageinfo -Displaying Image Information List

Synopsis

Cfmg_listimageinfo [-v] [-utf8] [-a]

Functional Description

This command outputs an XML list of registered image information.

All of the image information that has been registered is output in the following format:

Detailed format	Simple format	Output format
Yes	Yes	`<?xml version="1.0" encoding="UTF-8"?>`
Yes	Yes	`<images>`
Yes	Yes	`    <image>`
Yes	Yes	`        <id>[Cloning image ID]</id>`

Detailed format	Simple format	Output format
Yes	Yes	`<name>[image information name]</name>`
Yes	Yes	`<resourceId>[Resource ID]</resourceId>`
Yes	Yes	`<imageName>[Cloning image name]</imageName>`
Yes	No	`<ownerOrg>[Owner (tenant)]</ownerOrg>`
Yes	No	`<ownerUser>[Owner (user)]</ownerUser>`
Yes	No	`<useFlag>[Use flag]</useFlag>`
Yes	No	`<publicFlag>[Public flag]</publicFlag>`
Yes	No	`<publicCategory>[Public category]</publicCategory>`
Yes	Yes	`<serverCategory>[Sever category]</serverCategory>`
Yes	No	`<serverApplication>[Server application]</serverApplication>`
Yes	No	`<serverType>[Default server type]</serverType>`
Yes	No	`<cpuBit>[CPU bit number]</cpuBit>`
Yes	No	`<sysvolSize>[System disk size]</sysvolSize>`
Yes	No	`<maxCpuPerf>[Maximum CPU performance]</maxCpuPerf>`
Yes	No	`<numOfMaxCpu>[Maximum number of CPUs]</numOfMaxCpu>`
Yes	No	`<maxMemorySize>[Maximum memory size]</maxMemorySize>`
Yes	No	`<numOfMaxDisk>[Maximum number of disks]</numOfMaxDisk>`
Yes	No	`<maxDiskSize>[Maximum disk size]</maxDiskSize>`
Yes	No	`<numOfMaxNic>[Maximum number of NICs]</numOfMaxNic>`
Yes	No	`<initialPassword>[Initial password]</initialPassword>`
Yes	No	`<icon>[Icon type]</icon>`
Yes	No	`<virtualization>[Virtualization method]</virtualization>`
Yes	Yes	`<filterPool>[Filter string]</filterPool>`
Yes	No	`<showFlag>[Show flag]</showFlag>`
Yes	No	`<productName>[Product name]</productName>`
Yes	No	`<price>[Unit price]</price>`
Yes	No	`<chargeType>[Billing method]<chargeType>`
Yes	No	`<unitName>[Charge unit]<unitName>`
Yes	No	`<currencyUnit>[Currency code]<currencyUnit>`
Yes	No	`<currencySign>[Currency symbol]<currencySign>`
Yes	No	`<numOfDecimals>[Number of decimal places]<numOfDecimals>`
Yes	Yes	`<dataDiskFlag>[Data disk use]</dataDiskFlag>`
Yes	No	`<softwares>`
Yes	No	`...`
Yes	No	`</softwares>`
Yes	No	`<patches>`
Yes	No	`<patch>`
Yes	No	`<softwareid>[Software ID]</softwareid>`
Yes	No	`<patchid>[Patch ID]</patchid>`
Yes	No	`<componentName>[Component name]</componentName>`
Yes	No	`<description>[Description]</description>`
Yes	No	`</patch>`
Yes	No	`...`
Yes	No	`</patches>`
Yes	No	`<vdisks>`
Yes	No	`<vdisk>`
Yes	No	`<no>[Disk number]</no>`
Yes	No	`<diskSize>[Disk capacity]</diskSize>`
Yes	No	`</vdisks>`
Yes	No	`...`
Yes	No	`</vdisks>`
Yes	Yes	`</image>`
Yes	Yes	`</images>`

Yes: Indicates that the information is output.

No: Indicates that the information is not output.

If registered image information does not exist, information will be output in the following format:

```
<?xml version="1.0" encoding="UTF-8"?>
<images />
```

Options

-v (optional)

This option outputs the list in detailed format.
If this option is omitted, the list is output in the simple format.

-utf8 (optional)

This option outputs the list in UTF-8 format.
This option is only enabled for Windows Manager versions.
If this option is omitted, the list is output in ISO-8859-1 format.
For Linux Manager versions, the list is output in UTF-8 irrespective of this option.

-a (optional)

This option is only enabled for Windows Manager versions.
This option displays a list of the image information as well as the image information that has been automatically generated by the 12.4 cfmg_importlserver (Import L-Server) command.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_listimageinfo -v
<?xml version="1.0" encoding="Windows-31J"?>
<images>
    <image>
        <id>ST01-M_896</id>
        <name>RHELx64_IMG</name>
        <resourceId>[Resource ID]</resourceId>
        <imageName>[Cloning image ID]</imageName>
        <ownerOrg>cfmgadm</ownerOrg>
        <ownerUser>cfmgadm</ownerUser>
        <publicCategory>PUBLIC</publicCategory>
        <serverCategory>GENERAL</serverCategory>
        <serverApplication>AP</serverApplication>
        <serverType>extra_small</serverType>
        <cpuBit>32</cpuBit>
        <sysvolSize>15.0</sysvolSize>
        <maxCpuPerf>10.0</maxCpuPerf>
        <numOfMaxCpu>1</numOfMaxCpu>
        <maxMemorySize>10.0</maxMemorySize>
```

```
            <numOfMaxDisk>10</numOfMaxDisk>
            <maxDiskSize>30.0</maxDiskSize>
            <numOfMaxNic>1</numOfMaxNic>
            <icon>unit_tag_web.png</icon>
            <virtualization>hvm</virtualization>
            <filterPool>web</filterPool>
            <dataDiskFlag>true</dataDiskFlag>
            <showFlag>0</showFlag>
            <softwares>
                <software>
                    <name>Red Hat Enterprise Linux 5 (for Intel64)</name>
                    <id>SW00000011</id>
                    <ownerOrg>Unyou_Org</ownerOrg>
                    <ownerUser>UO_User01</ownerUser>
                    <category>OS</category>
                    <osCategory>linux64</osCategory>
                    <version>5.5</version>
                    <officialVersion />
                    <patch />
                    <license />
                    <support />
                    <productId />
                    <productName />
                    <price />
                    <chargeType />
                    <expectedUsage />
                </software>
            </softwares>
            <vdisks>
                <vdisk>
                    <no>1</no>
                    <diskSize>40.0</diskSize>
                </vdisk>
            </vdisks>
        </image>
    </images>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_listimageinfo -v
<?xml version="1.0" encoding="UTF-8"?>
<images>
    <image>
        <id>ST01-M_896</id>
        <name>RHELx64_IMG</name>
        <resourceId>[Resource ID]</resourceId>
        <imageName>[Cloning image ID]</imageName>
        <ownerOrg>cfmgadm</ownerOrg>
        <ownerUser>cfmgadm</ownerUser>
        <publicCategory>PUBLIC</publicCategory>
        <serverCategory>GENERAL</serverCategory>
        <serverApplication>AP</serverApplication>
        <serverType>extra_small</serverType>
        <cpuBit>32</cpuBit>
        <sysvolSize>15.0</sysvolSize>
        <numOfNIC>2</numOfNIC>
        <maxCpuPerf>10.0</maxCpuPerf>
        <numOfMaxCpu>1</numOfMaxCpu>
        <maxMemorySize>10.0</maxMemorySize>
        <numOfMaxDisk>10</numOfMaxDisk>
        <maxDiskSize>30.0</maxDiskSize>
        <numOfMaxNic>1</numOfMaxNic>
        <icon>unit_tag_web.png</icon>
```

```
                <virtualization>hvm</virtualization>
                <filterPool>web</filterPool>
                <dataDiskFlag>true</dataDiskFlag>
                <showFlag>0</showFlag>
                <softwares>
                    <software>
                        <name>Red Hat Enterprise Linux 5 (for Intel64)</name>
                        <id>SW00000011</id>
                        <ownerOrg>Unyou_Org</ownerOrg>
                        <ownerUser>UO_User01</ownerUser>
                        <category>OS</category>
                        <osCategory>linux64</osCategory>
                        <version>5.5</version>
                        <officialVersion />
                        <patch />
                        <license />
                        <support />
                        <productId />
                        <productName />
                        <price />
                        <chargeType />
                        <expectedUsage />
                    </software>
                </softwares>
                <vdisks>
                    <vdisk>
                        <no>1</no>
                        <diskSize>40.0</diskSize>
                    </vdisk>
                </vdisks>
        </image>
</images>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.10 cfmg_listnetinfo (Displaying Segment Information List)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_listnetinfo -Displaying Segment Information List

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_listnetinfo -Displaying Segment Information List

Synopsis

fmg_listnetinfo [-utf8]

Functional Description

This command outputs an XML list of registered segment information.

This command outputs all of the registered segment information in the following format:

```
<?xml version="1.0" encoding="UTF-8"?>
<networkCategories>
    <category>
        <ownerOrg>[Owner (tenant)]</ownerOrg>
        <ownerUser>[Owner (user)]</ownerUser>
        <resourceId>[Resource ID]</resourceId>
        <type>[Network type]</type>
        <segmentType>[Segment type information]</segmentType>
    </category>
    ...
</networkCategories>
```

�ℹ️ **Note**

If registered segments do not exist, information will be output in the following format:

```
<?xml version="1.0" encoding="UTF-8"?>
<networkCategories />
```

Options

-utf8 (optional)

This option outputs the list in UTF-8 format.
This option is only enabled for Windows Manager versions.
If this option is omitted, the list is output in ISO-8859-1 format.
For Linux Manager versions, the list is output in UTF-8 irrespective of this option.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_listnetinfo -v
<?xml version="1.0" encoding="Windows-31J"?>
<networkCategories>
    <category>
        <resourceId>ST01-M_1446</resourceId>
        <type>BUSINESS</type>
        <segmentType>DMZ</segmentType>
        <ownerOrg>cfmgadm</ownerOrg>
        <ownerUser>cfmgadm</ownerUser>
    </category>
</networkCategories>
```

```
# /opt/FJSVcfmg/bin/cfmg_listnetinfo -v
<?xml version="1.0" encoding="UTF-8"?>
<networkCategories>
    <category>
        <resourceId>ST01-M_1446</resourceId>
        <type>BUSINESS</type>
        <segmentType>DMZ</segmentType>
        <ownerOrg>cfmgadm</ownerOrg>
        <ownerUser>cfmgadm</ownerUser>
    </category>
</networkCategories>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.11 cfmg_listsoft (Displaying Software Information List)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_listsoft -Displaying Software Information List

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_listsoft -Displaying Software Information List

Synopsis

cfmg_listsoft [-v] [-utf8]

Functional Description

This command lists registered software information in XML format.

This command outputs all of the registered software information in the following format:

Detailed format	Simple format	Output format
Yes	Yes	`<?xml version="1.0" encoding="UTF-8"?>`
Yes	Yes	`<softwares>`
Yes	Yes	`    <software>`
Yes	Yes	`        <id>[Software ID]</id>`
Yes	Yes	`        <name>[Software name]</name>`
Yes	Yes	`        <ownerOrg>[Owner (tenant)]</ownerOrg>`
Yes	Yes	`        <ownerUser>[Owner (user)]</ownerUser>`
Yes	Yes	`        <useFlag>[Use flag]</useFlag>`
Yes	Yes	`        <publicFlag>[Public flag]</publicFlag>`
Yes	Yes	`        <category>[Software category]</category>`
Yes	No	`        <osCategory>[Operating system category]</osCategory>`

Detailed format	Simple format	Output format
Yes	No	`<version>[Version]</version>`
Yes	No	`<officialVersion>[Official version]</officialVersion>`
Yes	No	`<patch>[Patch version number]</patch>`
Yes	No	`<license>[License]</license>`
Yes	No	`<support>[Support]</support>`
Yes	No	`<productId>[Model number]</productId>`
Yes	No	`<productName>[Product name]</productName>`
Yes	No	`<price>[Unit price]</price>`
Yes	No	`<chargeType>[Billing method]</chargeType>`
Yes	No	`<expectedUsage>[Expected monthly usage]</expectedUsage>`
Yes	Yes	`</software>`
Yes	No	`...`
Yes	Yes	`</softwares>`

Yes: Indicates that the information is output.

No: Indicates that the information is not output.

📒 Note

- If registered software information does not exist, information will be output in the following format.

```
<?xml version="1.0" encoding="UTF-8"?>
<softwares />
```

Options

-v (optional)

This option outputs the list in detailed format.
If this option is omitted, the list is output in the simple format.

-utf8 (optional)

This option outputs the list in UTF-8 format.
This option is only enabled for Windows Manager versions.
If this option is omitted, the list is output in ISO-8859-1 format.
For Linux Manager versions, the list is output in UTF-8 irrespective of this option.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_listsoft
<?xml version="1.0" encoding="Windows-31J"?>
<softwares>
```

```
        <software>
            <id>SW00000112</id>
            <category>OS</category>
            <name>Red Hat Enterprise Linux 5 (for Intel64)</name>
            <ownerOrg>Unyou_Org</ownerOrg>
            <ownerUser>UO_User01</ownerUser>
        </software>
</softwares>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_listsoft
<?xml version="1.0" encoding="UTF-8"?>
<softwares>
    <software>
        <id>SW00000112</id>
        <category>OS</category>
        <name>Red Hat Enterprise Linux 5 (for Intel64)</name>
        <ownerOrg>Unyou_Org</ownerOrg>
        <ownerUser>UO_User01</ownerUser>
    </software>
</softwares>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.12 cfmg_listtemplate (Displaying Template Information List)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_listtemplate -Displaying Template Information List

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_listtemplate -Displaying Template Information List

Synopsis

cfmg_listtemplate [-v] [-utf8] [-a]

Functional Description

This command outputs an XML list of registered template information.

All of the template information that has been registered is output in the following format:

Detailed format	Simple format	Output format
Yes	Yes	`<?xml version="1.0" encoding="UTF-8"?>`
Yes	Yes	`<templates>`
Yes	Yes	`    <template>`
Yes	Yes	`        <id>[Template ID]</id>`
Yes	Yes	`        <name>[Template name]</name>`
Yes	No	`        <baseTemplateId>[Base template ID]</baseTemplateId>`
Yes	No	`        <baseTemplateName>[Base template name]</baseTemplateName>`
Yes	Yes	`        <ownerOrg>[Owner (tenant)]</ownerOrg>`
Yes	Yes	`        <ownerUser>[Owner (user)]</ownerUser>`
Yes	Yes	`        <useFlag>[Use flag]</useFlag>`
Yes	Yes	`        <publicCategory>[Public category]</publicCategory>`
Yes	No	`        <designSheetPath>[Path to the design sheet]</designSheetPath>`
Yes	No	`        <releaseDate>[Release date]</releaseDate>`
Yes	No	`        <numOfMaxVnet>[Maximum number of VNETs]</numOfMaxVnet>`
Yes	No	`        <numOfMaxVm>[Maximum number of VMs]</numOfMaxVm>`
Yes	Yes	`        <description>[Description]</description>`
Yes	No	`        <keyword>[Search keyword]</keyword>`
Yes	Yes	`        <estimate>[Rough cost estimate]</estimate>`
Yes	Yes	`        <license>[License]</license>`
Yes	Yes	`        <support>[Support]</support>`
Yes	Yes	`        <productId>[Model number]</productId>`
Yes	Yes	`        <productName>[Product name]</productName>`
Yes	Yes	`        <price>[Unit price]</price>`
Yes	Yes	`        <chargeType>[Billing method]</chargeType>`
Yes	Yes	`        <expectedUsage>[Expected monthly usage]</expectedUsage>`
Yes	Yes	`        <showFlag>[Show flag]</showFlag>`
Yes	Yes	`        <productName>[Product name]</productName>`
Yes	Yes	`        <price>[Unit price]</price>`
Yes	Yes	`        <chargeType>[Billing method]<chargeType>`
Yes	Yes	`        <unitName>[Charge unit]<unitName>`
Yes	Yes	`        <currencyUnit>[Currency code]<currencyUnit>`
Yes	Yes	`        <currencySign>[Currency symbol]<currencySign>`
Yes	No	`        <numOfDecimals>[Number of decimal places]<numOfDecimals>`
Yes	No	`        <vnets>`
Yes	No	`            <vnet>`
Yes	No	`                <id>[Network ID]</id>`
Yes	No	`                <name>[Name]</name>`
Yes	No	`                <numOfMaxVm>[Maximum number of VMs]</numOfMaxVm>`
Yes	No	`                <resourceId>[Resource ID]</resourceId>`
Yes	No	`                <category>[Network category]</category>`
Yes	No	`                <segmentType>[Segment type information]</segmentType>`
Yes	No	`            </vnet>`
Yes	No	`            ...`
Yes	No	`        </vnets>`
Yes	No	`        <lnetdevs>`
Yes	No	`            <lnetdev>`
Yes	No	`                <name>[LNetDev name]</name>`
Yes	No	`                <type>[LNetDev type]</type>`
Yes	No	`                <lnetdevIfs>`
Yes	No	`                    <lnetdevIf>`
Yes	No	`                        <name>[Interface name]</name>`
Yes	No	`                        <networkId>[Network ID]</networkId>`
Yes	No	`                    </lnetdevIf>`
Yes	No	`                    ...`
Yes	No	`                <lnetdevIfs>`
Yes	No	`                <ruleset>`
Yes	No	`                    <name>[Rule set name]</name>`
Yes	No	`                    <description>[Rule set description]</description>`
Yes	No	`                    <parameters>`
Yes	No	`                        <parameter>`

Detailed format	Simple format	Output format
Yes	No	`                        <name>[Parameter name]</name>`
Yes	No	`                        <label>[Tenant Display Name]</label>`
Yes	No	`                      <segmentlabel>[Segment Display Name]</segmentlabel>`
Yes	No	`                        <serverlabel>[Server Display Name]</serverlabel>`
Yes	No	`                        <view>[Display flag]</view>`
Yes	No	`                        <value>[Parameter value]</value>`
Yes	No	`                        <summary>[Parameter Overview]</summary>`
Yes	No	`                      <description>[Parameter description]</description>`
Yes	No	`                    </parameter>`
Yes	No	`                    ...`
Yes	No	`                  </parameters>`
Yes	No	`              </ruleset>`
Yes	No	`          </lnetdev>`
Yes	No	`        </lnetdevs>`
Yes	No	`        <servers>`
Yes	No	`          <server>`
Yes	No	`              <no>[Server serial number]</no>`
Yes	No	`              <imageId>[Cloning image ID]</imageId>`
Yes	No	`              <useDataDisk>[Data disk use]</useDataDisk>`
Yes	No	`              <name>[Server name]</name>`
Yes	No	`              <serverType>[Server type]</serverType>`
Yes	No	`              <pool>[Deployment destination pool resource name]</pool>`
Yes	No	`              <sparePool>[Spare pool resource name]</sparePool>`
Yes	No	`              <storagePool>[Storage pool resource name]</storagePool>`
Yes	No	`              <powerPriority>[Startup priority level]</powerPriority>`
Yes	No	`              <nicgroups>`
Yes	No	`                  <nicgroup>`
Yes	No	`                      <index>[NIC group index]</index>`
Yes	No	`                      <networkId>[IP Address network ID]</networkId>`
Yes	No	`                      <management>[Management NIC]</management>`
Yes	No	`                  </nicgroup>`
Yes	No	`                  ...`
Yes	No	`              </nicgroups>`
Yes	No	`              <vnics>`
Yes	No	`                  <vnic>`
Yes	No	`                      <no>[NIC serial number]</no>`
Yes	No	`                      <networkId>[IP address network ID]</networkId>`
Yes	No	`                      <management>[Control NIC]</management>`
Yes	No	`                      <group>[NIC group index]</group>`
Yes	No	`                  </vnic>`
Yes	No	`                  ...`
Yes	No	`              </vnics>`
Yes	No	`              <vdisks>`
Yes	No	`                  <vdisk>`
Yes	No	`                      <no>[Disk serial number]</no>`
Yes	No	`                      <diskSize>[Disk capacity]</diskSize>`
Yes	No	`                      <resourceId>[Resource ID]</resourceId>`
Yes	No	`                      <resourceName>[Disc Resource Name]<resourceName>`
Yes	No	`                     <storagePool>[Storage pool resource name]</storagePool>`
Yes	No	`                      <contained>[Disk contained in image]<contained>`
Yes	No	`                  </vdisk>`
Yes	No	`                  ...`
Yes	No	`              </vdisks>`
Yes	No	`              <image>`
Yes	No	`                  [Image Information]`
Yes	No	`              </image>`
Yes	Yes	`          </server>`
Yes	Yes	`          ...`
Yes	Yes	`        </servers>`
Yes	Yes	`    </template>`

Detailed format	Simple format	Output format
		`...` `</templates>`

Yes: Indicates that the information is output.

No: Indicates that the information is not output.

Note

If template information does not exist, information will be output in the following format.

```
<?xml version="1.0" encoding="UTF-8"?>
<templates />
```

Options

-v (optional)

This option outputs the list in detailed format.
If this option is omitted, the list is output in the simple format.

-utf8 (optional)

This option outputs the list in UTF-8 format.
This option is only enabled for Windows Manager versions.
If this option is omitted, the list is output in ISO-8859-1 format.
For Linux Manager versions, the list is output in UTF-8 irrespective of this option.

-a (optional)

This option is only enabled for Windows Manager versions.
This option displays a list of the templates that have been generated automatically by the 12.4 cfmg_importlserver (Import L-Server) command.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_listtemplate
<?xml version="1.0" encoding="Windows-31J"?>
<templates>
    <template>
        <id>template-12c95768de8</id>
        <name>TEMPLATE_SAMPLE1</name>
        <ownerOrg>cfmgadm</ownerOrg>
        <ownerUser>cfmgadm</ownerUser>
        <useFlag>true</useFlag>
        <publicCategory>PUBLIC</publicCategory>
```

```
        <description>Web/AP/DB 1 Server model</description>
        <estimate>0.0000</estimate>
        <license>0</license>
        <support>0</support>
        <productId />
        <productName />
        <price />
        <chargeType />
        <expectedUsage />
        <showFlag>1</showFlag>
    </template>
</templates>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_listtemplate
<?xml version="1.0" encoding="UTF-8"?>
<templates>
    <template>
        <id>template-12c95768de8</id>
        <name>TEMPLATE_SAMPLE1</name>
        <ownerOrg>cfmgadm</ownerOrg>
        <ownerUser>cfmgadm</ownerUser>
        <useFlag>true</useFlag>
        <publicCategory>PUBLIC</publicCategory>
        <description>Web/AP/DB 1 Server model</description>
        <estimate>0.0000</estimate>
        <license>0</license>
        <support>0</support>
        <productId />
        <productName />
        <price />
        <chargeType />
        <expectedUsage />
        <showFlag>1</showFlag>
    </template>
</templates>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.13 cfmg_listvmimage (Displaying a Cloning Image List)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_listvmimage -Displaying a Cloning Image List

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_listvmimage -Displaying a Cloning Image List

Synopsis

cfmg_listvmimage [-utf8]

Functional Description

This command outputs an XML list of the cloning images that have been registered with Resource Management.

All cloning images that have been registered with Resource Management will be output in the following format:

```
<?xml version="1.0" encoding="UTF-8"?>
<images>
    <image>
        <id>[Resource ID]</id>
        <name>[Cloning image name]</name>
        <comment>[Comment]</comment>
        <type>[Cloning image type]</type>
        <version>[Cloning image version]</version>
        <time>[Date and time when the cloning image was created]</time>
        <serverType>[Server type]</serverType>
        <dataDiskFlag>[Data disk use]</dataDiskFlag>
        <vdisks>
            <vdisk>
                <no>[Disk number]</no>
                <diskSize>[Disk capacity]</diskSize>
                <diskAttributes>[Disk format]</diskAttributes>
            </vdisk>
            ...
        </vdisks>
    </image>
    ...
</images>
```

📒 **Note**

If image information registered with Resource Management does not exist, information will be output in the following format:

```
<?xml version="1.0" encoding="UTF-8"?>
<images />
```

Options

-utf8 (optional)

This option outputs the list in UTF-8 format.
This option is only enabled for Windows Manager versions.
If this option is omitted, the list is output in ISO-8859-1 format.
For Linux Manager versions, the list is output in UTF-8 irrespective of this option.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_listvmimage
<?xml version="1.0" encoding="Windows-31J"?>
<images>
    <image>
        <id>ST01-M_896</id>
        <name>RHELx64_IMG</name>
        <comment />
        <type>cloning</type>
        <version>1</version>
        <time>2010-11-17-15:20:17+09:00</time>
        <serverType>extra_small</serverType>
        <dataDiskFlag>true</dataDiskFlag>
        <vdisks>
            <vdisk>
                <no>0</no>
                <diskSize>20.0</diskSize>
                <diskAttributes>thin</diskAttributes>
            </vdisk>
            <vdisk>
                <no>1</no>
                <diskSize>40.0</diskSize>
                <diskAttributes>thin</diskAttributes>
            </vdisk>
        </vdisks>
    </image>
</images>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_listvmimage
<?xml version="1.0" encoding="UTF-8"?>
<images>
    <image>
        <id>ST01-M_896</id>
        <name>RHELx64_IMG</name>
        <comment />
        <type>cloning</type>
        <version>1</version>
        <time>2010-11-17-15:20:17+09:00</time>
        <serverType>extra_small</serverType>
        <dataDiskFlag>true</dataDiskFlag>
        <vdisks>
            <vdisk>
                <no>0</no>
                <diskSize>20.0</diskSize>
                <diskAttributes>thin</diskAttributes>
            </vdisk>
            <vdisk>
                <no>1</no>
                <diskSize>40.0</diskSize>
                <diskAttributes>thin</diskAttributes>
            </vdisk>
        </vdisks>
    </image>
</images>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.14 cfmg_listvnet (Displaying a Virtual Network List)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_listvnet -Displaying a Virtual Network List

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_listvnet -Displaying a Virtual Network List

Synopsis

cfmg_listvnet [-utf8]

Functional Description

This command outputs in XML format a list of the network resources that have been registered with Resource Management.

All of the network resources that have been registered with Resource Management are output in the following format:

```
<?xml version="1.0" encoding="UTF-8"?>
<networks>
    <network>
        <id>[Resouce ID]</id>
        <name>[Resource name]</name>
        <tenantName>[Tenant name]</tenantName>
        <category>[Network category]</category>
        <extid>[VLAN ID]</extid>
        <type>[Network type]</type>
        <segmentType>[Segment type information]</segmentType>
        <comment>[Comment]</comment>
        <addrset>
            <name>[Address set name]</name>
            <subnet>[Subnet address]</subnet>
            <mask>[Subnet mask]</mask>
            <start>[Start address]</start>
            <end>[End address]</end>
        </addrset>
        <exclude>
            <range>
                <start>[Start address]</start>
                <end>[End address]</end>
            </range>
            <range>
                <start>[Start address]</start>
                <end>[End address]</end>
            </range>
        </exclude>
        <status>
```

```
            <num>[Total number of addresses]</num>
            <used>[Number of used addresses]</used>
            <avail>[Number of available addresses]</avail>
        </status>
    </network>
</networks>
```

Note

If network resources registered with Resource Management do not exist, information is output in the following format:

```
<?xml version="1.0" encoding="UTF-8"?>
<networks />
```

Options

-utf8 (optional)

This option outputs the list in UTF-8 format.

This option is only enabled for Windows Manager versions.

If this option is omitted, the list is output in ISO-8859-1 format.

For Linux Manager versions, the list is output in UTF-8 irrespective of this option.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_listvnet
<?xml version="1.0" encoding="Windows-31J"?>
<networks>
    <network>
        <id>ST01-M_1446</id>
        <name>gyomu-3</name>
        <tenantName>tenant1</tenantName>
        <category>BUSINESS</category>
        <extid>10</extid>
        <type />
        <segmentType>DMZ</segmentType>
        <comment>DMZ LAN</comment>
        <addrset>
            <name>192.168.xxx.xxx</name>
            <subnet>192.168.xxx.xxx</subnet>
            <mask>255.255.xxx.xxx</mask>
            <start>192.168.xxx.xxx</start>
            <end>192.168.xxx.xxx</end>
        </addrset>
        <exclude>
            <range>
                <start>192.168.xxx.xxx</start>
```

```
                <end>192.168.xxx.xxx</end>
            </range>
            <range>
                <start>192.168.xxx.xxx</start>
                <end>192.168.xxx.xxx</end>
            </range>
        </exclude>
        <status>
            <num>20</num>
            <used>3</used>
            <avail>17</avail>
        </status>
    /network>
</networks>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_listvnet
<?xml version="1.0" encoding="UTF-8"?>
<networks>
    <network>
        <id>ST01-M_1446</id>
        <name>gyomu-3</name>
        <tenantName>tenant1</tenantName>
        <category>BUSINESS</category>
        <extid>10</extid>
        <type />
        <segmentType>DMZ</segmentType>
        <comment>DMZ LAN</comment>
        <addrset>
            <name>192.168.xxx.xxx</name>
            <subnet>192.168.xxx.xxx</subnet>
            <mask>255.255.xxx.xxx</mask>
            <start>192.168.xxx.xxx</start>
            <end>192.168.xxx.xxx</end>
        </addrset>
        <exclude>
            <range>
                <start>192.168.xxx.xxx</start>
                <end>192.168.xxx.xxx</end>
            </range>
            <range>
                <start>192.168.xxx.xxx</start>
                <end>192.168.xxx.xxx</end>
            </range>
        </exclude>
        <status>
            <num>20</num>
            <used>3</used>
            <avail>17</avail>
        </status>
    </network>
</networks>
```

Exit Status

This command returns the following values:

0

　　The command executed successfully.

non-zero

    An error has occurred.

9.15 cfmg_showtemplate (Changing L-Platform Access Setting)

Name

[Windows Manager]

    Installation_folder\RCXCFMG\bin\cfmg_showtemplate - Changing L-Platform Access Setting

[Linux Manager]

    /opt/FJSVcfmg/bin/cfmg_showtemplate - Changing L-Platform Access Setting

Synopsis

cfmg_showtemplate -id <*Template ID*> -on | off

Functional Description

    This command makes L-Platform template public or private.

Options

-id

    This option specifies the template ID that makes the L-Platform template public or private.

-on

    This option makes the L-Platform template public.

-off

    This option makes the L-Platform template private.

Requirements

Permissions

    Infrastructure administrator with OS administrator privilege

Location

    Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_showtemplate -id template-12c95768de8 -on
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_showtemplate -id template-12c95768de8 -on
```

Exit Status

    This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

9.16 cfmg_updateimageinfo (Updating Image Information)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_updateimageinfo -Updating Image Information

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_updateimageinfo -Updating Image Information

Synopsis

cfmg_updateimageinfo -xml <*image information file path*>

Functional Description

This command updates image information.

![Note icon] **Note**

To update image information, first use the 9.15 cfmg_showtemplate (Changing L-Platform Access Setting)command to set any system templates that are using that image information to "Private" and then update the image information.

Options

-xml

This option specifies the absolute or relative path to the image information file, using a string of printable ASCII characters.
If the path includes spaces, enclose the path in double quotes.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_updateimageinfo
 -xml c:\tmp\template_test\images\sample.xml
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_updateimageinfo -xml /tmp/template_test/images/sample.xml
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

Chapter 10 Accounting Commands

This chapter explains the commands related to accounting.

10.1 ctchg_chgschedule (Change Periodic Log Schedule Settings)

Name

[Windows Manager]

Installation_folder\RCXCTMG\Charging\bin\ctchg_chgschedule - Change Periodic Log Schedule Settings

[Linux Manager]

/opt/FJSVctchg/bin/ctchg_chgschedule.sh - Change Periodic Log Schedule Settings

Synopsis

[Windows Manager]

ctchg_chgschedule [-l]

[Linux Manager]

ctchg_chgschedule.sh [-l]

Function description

This command changes the time and the frequency at which the periodic log is obtained.

Execute this command after setting the time and the frequency to be changed in the operational settings file for metering.

Refer to "8.7.3 Metering Log Settings" in the "Operation Guide CE" for details.

Options

-l (optional)

Specify this option to reference the current settings.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\ctchg_chgschedule
INFO: ctchg0102:Command succeeded.
```

[Linux Manager]

```
# /opt/FJSVctchg/bin/ctchg_chgschedule.sh
INFO: ctchg0102:Command succeeded.
```

Exit Status

This command returns the following values:

0

The command executed successfully.

1

An error has occurred.

2

A warning error has occurred.

📎 **Note**

. . . .

If the exit status is 0, the normal end message is as follows:

- When changing the schedule settings

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\ctchg_chgschedule
INFO: ctchg0102:Command succeeded.
```

- When referencing the schedule settings

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\ctchg_chgschedule -l
periodic_log_schesule_time=00:00
periodic_log_schedule_type=DAILY
INFO: ctchg0102:Command succeeded.
```

. . . .

10.2 ctchg_getmeterlog (Output Metering Logs)

Name

[Windows Manager]

Installation_folder\RCXCTMG\Charging\bin\ctchg_getmeterlog -Output Metering Logs

[Linux Manager]

/opt/FJSVctchg/bin/ctchg_getmeterlog.sh -Output Metering Logs

Synopsis

[Windows Manager]

ctchg_getmeterlog [-start <*YYYY-MM-DD*> -end <*YYYY-MM-DD*>] [-event | -period] -outputfile <*metering log file*> [-overwrite] [-format <*format*>]

[Linux Manager]

ctchg_getmeterlog.sh [-start <*YYYY-MM-DD*> -end <*YYYY-MM-DD*>] [-event | -period] -outputfile <*metering log file*> [-overwrite] [-format <*format*>]

Function description

- This command outputs metering logs as CSV files or XML files.

- It is recommended to backup the metering log regularly. Backup to other locations regularly using the task scheduler (Windows) or cron (Linux), etc.

- Determining the metering log may take some time, so execute the metering log output command at 01:00 or later on the day after the end day of the obtaining period.

Options

-start (optional)

Specifies the start day of the obtaining period

If the two parameters -start and -end are omitted, the metering log of the previous day will be output.

-end (optional)

Specifies the end day of the obtaining period

-event (optional)

Obtains the event log only

If -event and -period are omitted, both logs will be output.

-period (optional)

Obtains the periodic log only

-outputfile

Specifies the output file name

If a directory path is not included, the file will be created in the current directory.

-overwrite (optional)

If an output file with the same name already exists, it will be overwritten.

When this parameter is omitted, an error will be output if a file with the same name already exists.

-format (optional)

Specify csv or xml.

When this parameter is omitted, the metering log will be output as a csv file.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

🛈 Note

. . . .

- To execute the command by the user other than the Infrastructure administrator with OS administrator privilege, change the OS file system permissions manually.
  The required permissions are shown below.

[Windows Manager]

No	Target file/directory	Required permissions
1	*Installation_folder*\RCXCTMG\Charging\bin	Read and execute
2	*Installation_folder*\RCXCTMG\Charging\bin\ctchg_getmeterlog.bat	Read and execute
3	*Installation_folder*\RCXCTMG\Charging\bin\meterlog.jar	Read
4	*Installation_folder*\RCXCTMG\Charging\conf	Read and execute
5	*Installation_folder*\RCXCTMG\Charging\conf\metering.properties	Read
6	*Installation_folder*\RCXCTMG\Charging\lib	Read and execute
7	*Installation_folder*\RCXCTMG\Charging\lib\log4j-1.2.15.jar	Read
8	*Installation_folder*\RCXCTMG\Charging\log	Read and execute
9	*Installation_folder*\RCXCTMG\Charging\log\ctchg_command.log	Read and write
10	*Installation_folder*\RCXCTMG\Charging\log\ctchg_command_debug.log	Read and write

[Linux Manager]

No	Target file/directory	Required permissions
1	/opt/FJSVctchg/bin	Read and execute
2	/opt/FJSVctchg/bin/ctchg_getmeterlog.sh	Read and execute
3	/opt/FJSVctchg/bin/meterlog.jar	Read
4	/opt/FJSVctchg/lib	Read and execute
5	/opt/FJSVctchg/lib/log4j-1.2.15.jar	Read
6	/etc/opt/FJSVctchg/conf	Read and execute
7	/etc/opt/FJSVctchg/conf/metering.properties	Read
8	/var/opt/FJSVctchg/log	Read and execute
9	/var/opt/FJSVctchg/log/ctchg_command.log	Read and write
10	/var/opt/FJSVctchg/log/ctchg_command_debug.log	Read and write

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\ctchg_getmeterlog
 -outputfile workfile
      (Output the metaring log of the previous day)
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\ctchg_getmeterlog
 -start 2010-04-01 -end 2010-04-01 -period -outputfile periodfile
      (Output the periodic log for April 1, 2010)
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\ctchg_getmeterlog
 -start 2010-04-01 -end 2011-03-31 -event -outputfile eventfile
      (Output the event log for the financial year 2011)
```

[Linux Manager]

```
# /opt/FJSVctchg/bin/ctchg_getmeterlog.sh -outputfile workfile
      (Output the metaring log of the previous day)
# /opt/FJSVctchg/bin/ctchg_getmeterlog.sh -start 2011-04-01 -end 2011-04-01 -period -outputfile
periodfile
        (Output the periodic log for April 1, 2011)
```

```
# /opt/FJSVctchg/bin/ctchg_getmeterlog.sh -start 2011-04-01 -end 2012-03-31 -event -outputfile
eventfile
        (Output the event log for the financial year 2011)
```

Exit Status

This command returns the following values:

0

    The command executed successfully.

1

    An error has occurred.

2

    A warning error has occurred.

10.3 currencyset (Change Currency Information Setting)

Name

[Windows Manager]

    Installation_folder\RCXCTMG\Charging\bin\currencyset -Change Currency Information Setting

[Linux Manager]

    /opt/FJSVctchg/bin/currencyset.sh -Change Currency Information Setting

Synopsis

[Windows Manager]

    currencyset { USD | JPY | EUR | SGD }

[Linux Manager]

    currencyset.sh { USD | JPY | EUR | SGD }

Function description

This command changes currency information. Default setting is USD ($).

📝 **Note**

....

- Stop the manager software before executing this command.

- Do not change the currency information once you start the charging operation.

- For details on how to stop the manager, refer to "2.1 Starting and Stopping the Manager" in the "Operation Guide CE".

....

Options

{ USD | JPY | EUR | SGD }

    Specify the three-letter currency code.

Currency code	Currency	Currency sign	Number of decimal places
USD	United States Dollar	$	2
JPY	Japanese Yen	¥	0
EUR	Euro	EUR	2
SGD	Singapore dollar	S$	2

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\currencyset EUR
```

[Linux Manager]

```
# /opt/FJSVctchg/bin/currencyset.sh EUR
```

Exit Status

This command returns the following values:

0

The command executed successfully.

1

An error has occurred.

10.4 productmaintain (Product Master Maintenance)

Name

[Windows Manager]

Installation_folder\RCXCTMG\Charging\bin\productmaintain -Product Master Maintenance

[Linux Manager]

/opt/FJSVctchg/bin/productmaintain.sh -Product Master Maintenance

Synopsis

[Windows Manager]

productmaintain {import | export} <accounting information file name>

[Linux Manager]

productmaintain.sh {import | export} <accounting information file name>

Function description

The following functions are provided for the management of product master accounting information.

- A function to register L-Platform template accounting information in the product master

- A function to output L-Platform template accounting information that has already been registered in the product master to the accounting information file

📝 Note

....

- [Product Master Registration]

  - The product master contents will be replaced with the contents of the accounting information file.

  - Specifying a size 0 file will delete the entire contents of the product master.

  - If an error occurs, all registration processes will be rendered invalid and the master will revert to its former state.

  - Any amounts for elements that make up the composition of an L-Platform that is not registered in the product master will be treated as \0.

- [Product Master Output]

  - If a file name that already exists is specified as the accounting information file name, it will be overwritten.

  - In the event that the product master contains no information, a file with size 0 will be output.

- [Information in common]

  - Refer to "Appendix B Metering Log" in the "Operation Guide CE" for accounting information file.

- Manually set the OS file system authorizations in the event that a user other than a system administrator wishes to execute registration. The necessary authorizations are as listed below.

[Windows Manager]

No	Target file/directory	Required permissions
1	*Installation_folder*\RCXCTMG\Charging\bin	Read and execute
2	*Installation_folder*\RCXCTMG\Charging\bin\productmaintain.bat	Read and execute
3	*Installation_folder*\RCXCTMG\Charging\bin\productmaintain.jar	Read
4	*Installation_folder*\RCXCTMG\Charging\lib	Read and execute
5	*Installation_folder*\RCXCTMG\Charging\lib\log4j-1.2.15.jar	Read
6	*Installation_folder*\RCXCTMG\Charging\conf	Read and execute
7	*Installation_folder*\RCXCTMG\Charging\conf\productmaintain.properties	Read
8	*Installation_folder*\RCXCTMG\Charging\log	Read and execute
9	*Installation_folder*\RCXCTMG\Charging\log\Productmaintain.log	Read and write
10	*Installation_folder*\RCXCTMG\Charging\log\Productmaintain_debug.log	Read and write

[Linux Manager]

No	Target file/directory	Required permissions
1	/opt/FJSVctchg/bin	Read and execute
2	/opt/FJSVctchg/bin/productmaintain.sh	Read and execute
3	/opt/FJSVctchg/bin/productmaintain.jar	Read
4	/opt/FJSVctchg/lib	Read and execute
5	/opt/FJSVctchg/lib/log4j-1.2.15.jar	Read

No	Target file/directory	Required permissions
6	/etc/opt/FJSVctchg/conf	Read and execute
7	/etc/opt/FJSVctchg/conf/productmaintain.properties	Read
8	/var/opt/FJSVctchg/log	Read and execute
9	/var/opt/FJSVctchg/log/Productmaintain.log	Read and write
10	/var/opt/FJSVctchg/log/Productmaintain_debug.log	Read and write

Options

{import | export}

Specify the accounting information file name.

Accounting information file data is registered in the product master when import is specified.

Product master data is output to the accounting information file when export is specified.

The accounting information file name must be specified using the absolute path.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\productmaintain import C:\mmt.csv
   (Product Master Registration)
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Charging\bin\productmaintain export C:\mmt.csv
   (Product Master Output)
```

[Linux Manager]

```
# /opt/FJSVctchg/bin/productmaintain.sh import ~/mmt.csv
   (Product Master Registration)
# /opt/FJSVctchg/bin/productmaintain.sh export ~/mmt.csv
   (Product Master Output)
```

Exit Status

This command returns the following values:

0

The command executed successfully.

1

An error has occurred.

Chapter 11 Access Authority Customize Commands

This chapter explains about commands relating to the customization of access authority.

11.1 ctac_getauthority (Acquiring Information about Access Authority)

Name

[Windows Manager]

Installation_folder\RCXCTMG\SecurityManagement\bin\ctac_getauthority -Acquiring Information about Access Authority

[Linux Manager]

/opt/FJSVctsec/bin/ctac_getauthority.sh -Acquiring Information about Access Authority

Synopsis

[Windows Manager]

ctac_getauthority -r <*role name*> -f <*output file name*> [-o]

[Linux Manager]

ctac_getauthority.sh -r <*role name*> -f <*output file name*> [-o]

Function description

Information about L-Platform access authority for tenant users and tenant administrators is output as XML files.

The file format for access authority information is as indicated below.

- The character code is UTF-8.

- Files are output in XML format.

The output format for access authority information files is indicated below.

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<AccessAuthoritySet>
    <AccessAuthority>
        <RoleName>Rolll Name</RoleName>
        <ActionSet>
            <Allow>
                <Action>Action ID</Action>
                ...
            </Allow>
            <NotAllow>
                <Action>Action ID</Action>
                ...
            </NotAllow>
        </ActionSet>
    </AccessAuthority>
</AccessAuthoritySet>
```

A description of each tag is provided below.

Tag name	Description
RoleName	Outputs the role name of the acquisition target.
Allow	Outputs the allowed action ID to the lower tag.
NotAllow	Outputs the disallowed action ID to the lower tag.

Tag name	Description
Action	Outputs the action ID.

Refer to "Table 11.1 Default values of the Action IDs versus each Role" of the action IDs.

Options

-r

Specify one of the following two role names for the acquisition target:

- tenant_admin

- tenant_user

-f

Specify the output file name.

If the directory path is not included, this will be created in the current directory.

-o (optional)

If an output file with the same name already exists, it will be overwritten.

An error will be output if this parameter is omitted and a file with the same name already exists.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

This is the coding for acquiring access authority information for tenant users.

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\SecurityManagement\bin\ctac_getauthority
 -r tenant_user -f out.xml
```

[Linux Manager]

```
# /opt/FJSVctsec/bin/ctac_getauthority.sh -r tenant_user -f out.xml
```

Exit Status

This command returns the following values:

0

The command executed successfully.

2

An error has occurred.

11.2 ctac_updauthority (Access Authority Modification)

Name

[Windows Manager]

Installation_folder\RCXCTMG\SecurityManagement\bin\ctac_updauthority -Access Authority Modification

[Linux Manager]

/opt/FJSVctsec/bin/ctac_updauthority.sh -Access Authority Modification

Synopsis

[Windows Manager]

ctac_updauthority -f <access authority information file>

ctac_updauthority -r <*Role name*> -a <action ID of modification target> -p <Allow/deny status of specified operation>

[Linux Manager]

ctac_updauthority.sh -f <access authority information file>

ctac_updauthority.sh -r <*Role name*> -a <action ID of modification target> -p <Allow/deny status of specified operation>

Function description

Modifies L-Platform access authority for tenant users and tenant administrators.

Note

Before executing the command, perform one of following procedure to prevent operations be done from L-Platform Management page.

- Separate the admin server from the external networks.

- Stop following Web servers.

- RCXCT-ext

- RCXCT-ext2

If not, the authorities of the users will be updated immediately, and the behavior of some operations on the L-Platform Management page may change during its procedure.

Options

-f

Specify the access authority information file. Customize the access authority for access authority information files acquired using the access authority information acquisition command and specify.

Note

Action IDs in access authority information file cannot be omitted.

-r

Specify target role from one of the following two roles:

- tenant_admin

- tenant_user

-a

Specify the action ID of the modification target.

Default values of the Action IDs versus each Role are defined in the "Table 11.1 Default values of the Action IDs versus each Role".

Table 11.1 Default values of the Action IDs versus each Role

Action ID	Details	Default Access Setting	
		Tenant administrator	Tenant user
SystemDesign	L-Platform subscription operation in L-Platform management. The L-Platform subscription menu will display if this operation is allowed.	Yes	Yes
ResourceDesign	Reconfiguration operation in L-Platform management. The Reconfiguration page can be displayed by clicking the Reconfiguration button on the L-Platform details page if this operation is allowed.	Yes	Yes
ResourceDelete	Cancel operation in L-Platform management. The Check L-Platform page can be displayed by clicking the Cancel L-Platform button on the L-Platform details page if this operation is allowed.	Yes	Yes
InstanceStart	Operation for single server startup and batch server power supply startup in L-Platform management. Single or batch startup of servers can be performed if this operation is allowed.	Yes	Yes
InstanceStop	Operation for single server shutdown or batch server power supply shutdown in L-Platform management. Single or batch shutdown of servers can be performed if this operation is allowed.	Yes	Yes
ImageExec	Operation to extract virtual server snapshot in L-Platform management. Virtual server snapshots can be extracted if this operation is allowed.	Yes	Yes
	Operation to backup physical servers in L-Platform management. Physical server backups can be extracted if this operation is allowed.	Yes	Yes
	Operation to extract server images in L-Platform management. Server images can be extracted if this operation is allowed.	Yes	No
ImageRestore	Operation to restore virtual server snapshot in L-Platform management.	Yes	Yes

Action ID	Details	Default Access Setting	
		Tenant administrator	Tenant user
	The virtual server snapshot can be restored if this operation is allowed.		
	Operation to restore physical server backup in L-Platform management. Physical server backup can be restored if this operation is allowed.	Yes	Yes
ImageDelete	Operation to delete virtual server snapshot in L-Platform management. The virtual server snapshot can be deleted if this operation is allowed.	Yes	Yes
	Operation to delete physical server backups in L-Platform management. Physical server backups can be deleted if this operation is allowed.	Yes	Yes
FirewallDesign	Operation to modify parameter values for the firewall rule set. Firewall settings can be performed if this operation is allowed.	Yes	Yes
TimeSeriesAnalysis_EventLogDisplay	Operation to refer event log in the L-Platform Management page. Event Log menu will be displayed if this operation is allowed.	Yes	Yes

Yes: Default authority "on" and can be updated by command.

No: Default authority "off" and cannot be updated.

-p

Specifies whether the specified operation is allowed or denied.

- on: Allowed

- off: Denied

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

- This is the coding to specify an access authority information file and modify the authority.

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\SecurityManagement\bin\ctac_updauthority
 -f in.xml
```

[Linux Manager]

```
# /opt/FJSVctsec/bin/ctac_updauthority.sh -f in.xml
```

- This is the coding to invalidate L-Platform reconfiguration operations and event log reference operations for tenant users.

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\SecurityManagement\bin\ctac_updauthority
 -r tenant_user -a ResourceDesign -p off
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\SecurityManagement\bin\ctac_updauthority
 -r tenant_user -a TimeSeriesAnalysis_EventLogDisplay -p off
```

[Linux Manager]

```
# /opt/FJSVctsec/bin/ctac_updauthority.sh -r tenant_user -a ResourceDesign -p off
# /opt/FJSVctsec/bin/ctac_updauthority.sh -r tenant_user -a TimeSeriesAnalysis_EventLogDisplay
-p off
```

Exit Status

This command returns the following values:

0

The command executed successfully.

2

An error has occurred.

Chapter 12 Maintenance Commands

This chapter describes the commands for maintenance.

12.1 cfmg_deletelplatform (Delete L-Platform)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_deletelplatform - Delete L-Platform

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_deletelplatform - Delete L-Platform

Synopsis

cfmg_deletelplatform [-f] -id L-Platform ID

Functional Description

This command deletes an L-Platform whose cancellation has resulted in an error.

Because the operation is conducted without waiting for returns to be completed, errors that occur during the operation will not be output to the event log and the log file.

Check the **Resource** window to confirm if returns were completed normally.

Options

-f (optional)

Do not perform an inquiry.

-id

Specify the L-Platform ID for deletion.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege.

Location

Admin server.

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_deletelplatform -id div1-7NN3BLVA4
Are you sure to delete the L-Platform? (Y/N) y
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_deletelplatform -id div1-7NN3BLVA4
Are you sure to delete the L-Platform? (Y/N) y
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

12.2 cfmg_deletelserver (Release L-Server)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_deletelserver - Release L-Server

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_deletelserver - Release L-Server

Synopsis

cfmg_deletelserver -id L-Platform ID [-server Server name] [-f]

Functional Description

Release the server from the L-Platform.

The servers can be released from each L-Platform in batches.

The L-Server corresponding to the released servers are moved directly under the tenant folder in the resource window of the ROR console.

Options

-id

Specify the L-Platform ID of the L-Platform where the server to be released is.

-server (Optional)

Specify the server name of the server to be released.

All servers in the L-Platform will be released in a batch if this is omitted.

This option cannot be specified if there is only one server in the L-Platform. Omit this item and release by each L-Platform.

-f (Optional)

Enquiries are not made.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege.

Location

Admin server.

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_deletelserver -id tenant1-123456789 -
server server1 -f
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_deletelserver -id tenant1-123456789 -server server1 -f
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

12.3 cfmg_deletesysdata (Unnecessary Data Deletion)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_deletesysdata -Unnecessary Data Deletion

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_deletesysdata -Unnecessary Data Deletion

Synopsis

cfmg_deletesysdata [-f] [-n] -id *<L-Platform ID>*
cfmg_deletesysdata [-f] [-n] -id *< L-Platform ID >* -sid *<server ID>*

Functional Description

This command can delete unnecessary data of L-Platform or server remaining on the L-Platform management function in the event that an L-Platform or server(s) deployed on the L-Platform management window is erroneously deleted using the ROR console or virtualization software such as VMware.

Options

-f (optional)

No enquiry is performed.

-n (optional)

No existence check is performed.

-id

Specifies the L-Platform ID of the deletion target.

-sid

Specifies the server ID of the deletion target.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_deletesysdata -id div1-7NN3BLVA4 -sid WEB1
Do you want to delete the L-Platform ? (Y/N) y
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_deletesysdata -id div1-7NN3BLVA4 -sid WEB1
Do you want to delete the L-Platform ? (Y/N) y
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

12.4 cfmg_importlserver (Import L-Server)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_importlserver -Import L-Server

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_importlserver -Import L-Server

Synopsis

cfmg_importlserver -user <*user ID*> -org <*tenant name*> -lserver <*L-Server name*>
[-image <*cloning image ID*>] [-os <*software ID*>] [-vmpool <*VM pool name*>] [-storagepool <*storage pool name*>] [-host <*host name*>]

Functional Description

This command imports the L-Server with the specified L-Server name as an L-Platform.

 Note

. . . .

- Only one server can be imported for one L-Platform.

- An L-Platform template that has been generated by this command will not be displayed in the **Template Management** window.

- Specifying the -a option in the 9.12 cfmg_listtemplate (Displaying Template Information List) command or the 9.9 cfmg_listimageinfo (Displaying Image Information List) command will allow an L-Platform template that has been generated by this command to be displayed.

- L-Servers without network interface cards (NICs) cannot be imported.

- An L-Server that exists under a tenant cannot be imported to another tenant.

- If an L-Server exists in a location other than under a tenant folder is to be imported, the power of the L-Server to be imported must be switched off.

⋯⋯⋯

Options

-user

Specifies the user ID to be set in the L-Platform to be imported.

-org

Specifies the tenant ID to be set in the L-Platform to be imported.

-lserver

Specifies the L-Server name of the L-Server targeted to be imported.

If the L-Server exists under a folder, it must be specified using an absolute path.

Only L-Servers that are under folders up to the first level can be imported.

If an L-Server that is under a folder that is second level or higher is to be imported, use the ROR Console in Resource Management to move the L-Server to a position that is at first level or lower in advance.

If the L-Server is to exist directly under the root directory, the first "/" can be omitted.

-image (optional)

Specifies the image ID if image information is to be set in the L-Server to be imported.

If this option has not been specified, default image information will be used.

To manage software information or patch information, use the 9.1 cfmg_addimageinfo (Registering Image Information) command to register the image information in advance, and then specify it in this command.

If a cloning image does not exist, specify the -n option in the 9.1 cfmg_addimageinfo (Registering Image Information) command to register image information.
If ordinary image information has been specified, to delete it, the L-Platform that has been imported must be returned.

-os (optional)

Specifies the software ID of the software information of the operating system to be set in the L-Server to be imported.

If the -image option has been specified, this option will be ignored even if it is specified.

Software information other than that of the operating system cannot be specified.

If both this option and the -image option have been omitted, the software ID [SW00000001] information will be set.

The default will be the following operating system information:

[Windows Server 2008 Standard (32bit)]

The 9.11 cfmg_listsoft (Displaying Software Information List) command can be used to reference the software IDs.

-vmpool (optional)

Specifies the VM pool name to be set in the L-Server to be imported.

The VM pool name must be specified using an absolute path.

Example: /VMPool

If this option has not been specified, a VM pool name will not be set.

If the metering function is being used and this option has not been specified, metering calculations cannot be performed for CPU and memory in relation to the VM pool.

-storagepool (optional)

Specifies the storage pool name to be set in the L-Server to be imported.

The storage pool name must be specified using an absolute path.

Example: /StoragePool

If there are a number of disks, specify the storage pool names in order of disk number, with each delimited by a comma.

If the number of disks is larger than that of the specified storage pool names, the storage pool name specified at the end will be set for the excess disks.

If this option has not been specified, a storage pool name will not be set.

If the metering function is being used and this option has not been specified, metering calculations cannot be performed for disks in relation to the storage pool.

-host (optional)

Specifies the host name to be set in the L-Server to be imported.

If this option has not been specified, a host name will be generated automatically according to the host name generation method.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_importlserver -user user3 -org div3 -
lserver lsv3
<?xml version="1.0" encoding="Windows-31J"?>
<result>
        <templateId>template-12fe41c4b58</templateId>
        <vsysId>div3-WCJHJJO0R</vsysId>
</result>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_importlserver -user user3 -org div3 -lserver lsv3
<?xml version="1.0" encoding="UTF-8"?>
<result>
        <templateId>template-12fe41c4b58</templateId>
        <vsysId>div3-WCJHJJO0R</vsysId>
</result>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

12.5 cfmg_listhostnamecounter (Display List of Serial Numbers for Host Name Settings)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_listhostnamecounter -Display List of Serial Numbers for Host Name Settings

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_listhostnamecounter -Display List of Serial Numbers for Host Name Settings

Synopsis

cfmg_listhostnamecounter

Functional Description

This command displays a list of serial numbers for the host names that are being managed.

The serial numbers that are displayed will be the next numbers to be added.

If the serial numbers exceed this, "---" will be displayed.

Refer to "19.4 Setting the Host Names for Virtual Servers" in the "Setup Guide CE" for details.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_listhostnamecounter
<?xml version="1.0" encoding="Windows-31J"?>
<result>
        <counter>
                <key>div01</key>
                <count>2</count>
        </counter>
</result>
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_listhostnamecounter
<?xml version="1.0" encoding="UTF-8"?>
<result>
        <counter>
                <key>div01</key>
                <count>2</count>
        </counter>
</result>
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

12.6 cfmg_resethostnamecounter (Reset Serial Numbers for Host Name Settings)

Name

[Windows Manager]

Installation_folder\RCXCFMG\bin\cfmg_resethostnamecounter -Reset Serial Numbers for Host Name Settings

[Linux Manager]

/opt/FJSVcfmg/bin/cfmg_resethostnamecounter -Reset Serial Numbers for Host Name Settings

Synopsis

cfmg_resethostnamecounter -key <*key name*> | -all

Functional Description

This command resets the serial numbers for the host names that are being managed.

Refer to "19.4 Setting the Host Names for Virtual Servers" in the "Setup Guide CE" for details.

📑 Note

. . . .

- If a reset is executed, the serial numbers will return to 1.

- If the serial numbers have been reset, even if a serial number has already been used, server deployment will be performed using the same host name.

. . . .

Options

-key

Specifies the key name to be reset. The 12.5 cfmg_listhostnamecounter (Display List of Serial Numbers for Host Name Settings) command can be used to display the key names.

-all

Resets all of the serial numbers.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

    Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_resethostnamecounter
```

[Linux Manager]

```
# opt/FJSVcfmg/bin/cfmg_resethostnamecounter
```

Exit Status

This command returns the following values:

0

    The command executed successfully.

non-zero

    An error has occurred.

12.7 cfmg_syncdiskinfo (Synchronize Disk Information)

Name

[Windows Manager]

    Installation_folder\RCXCFMG\bin\cfmg_syncdiskinfo -Synchronize Disk Information

[Linux Manager]

    /opt/FJSVcfmg/bin/cfmg_syncdiskinfo -Synchronize Disk Information

Synopsis

cfmg_syncdiskinfo

Functional Description

When a disk attached to a physical L-Server has been changed by a switchover of operating or standby status of storage, this command adjusts the L-Platform configuration information to the changed disk information.

Requirements

Permissions

    Infrastructure administrator with OS administrator privilege

Location

    Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCFMG\bin\cfmg_syncdiskinfo
Completed synchronization.
```

[Linux Manager]

```
# /opt/FJSVcfmg/bin/cfmg_syncdiskinfo
Completed synchronization.
```

Exit Status

This command returns the following values:

0

　　The command executed successfully.

non-zero

　　An error has occurred.

12.8 cmdbrefresh (Refresh Configuration Information of System Condition)

Name

[Windows Manager]

　　Installation_folder\SWRBAM\CMDB\FJSVcmdbm\bin\cmdbrefresh -Refresh Configuration Information of System Condition

[Linux Manager]

　　/opt/FJSVcmdbm/bin/cmdbrefresh.sh -Refresh Configuration Information of System Condition

Synopsis

[Windows Manager]

　　cmdbrefresh -a -q

[Linux Manager]

　　cmdbrefresh.sh -a -q

Functional Description

This command refreshes the configuration information displayed in system condition view.

This command is used for disaster recovery procedure or restoring of backup data.

The configuration information that was managed on the backup site before the recovery data is imported is kept.

Options

-a

　　Update all.

-q

　　Update configuration information.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\SWRBAM\CMDB\FJSVcmdbm\bin\cmdbrefresh -a -q
```

[Linux Manager]

```
# /opt/FJSVcmdbm/bin/cmdbrefresh.sh -a -q
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

The command returns immediately when the update begins and does not wait for the asynchronous update to complete.

The end of update can be seen in event log or system log with the following six messages.

The time for the update depends on the number of VMs and it takes tens of minutes or less to complete the update.

[Windows Manager]

event log

Level	Source	Event ID	Message
information	FCMDB	10004	Update check processing has started. 'MDR Service for Software Configuration Manager'
information	FCMDB	10004	Update check processing has started. 'MDR Service for SQC'
information	FCMDB	10004	Update check processing has started. 'MDR Service for ROR'
information	FCMDB	10005	Update check processing has completed. 'MDR Service for Software Configuration Manager'
information	FCMDB	10005	Update check processing has completed. 'MDR Service for SQC'
information	FCMDB	10005	Update check processing has completed. 'MDR Service for ROR'

[Linux Manager]

system log

Message
Update check processing has started. 'MDR Service for Software Configuration Manager'
Update check processing has started. 'MDR Service for SQC'
Update check processing has started. 'MDR Service for ROR'
Update check processing has completed. 'MDR Service for Software Configuration Manager'
Update check processing has completed. 'MDR Service for SQC'
Update check processing has completed. 'MDR Service for ROR'

12.9 ctmg_collectinfo (Collection of Investigation Data)

Name

[Windows Manager]

Installation_folder\RCXCTMG\bin\ctmg_collectinfo -Collection of Investigation Data

[Linux Manager]

/opt/FJSVctmg/bin/ctmg_collectinfo.sh -Collection of Investigation Data

Synopsis

[Windows Manager]

ctmg_collectinfo [-noperf] directory

[Linux Manager]

ctmg_collectinfo.sh [-noperf] directory

Functional Description

ctmg_collectinfo collects investigation data for the management server of this product.

Before requesting a problem investigation, collect investigation data with this command.

📋 **Note**

- When the settings have not changed from initial values, the disk space needed to collect data is about 300M bytes. Because changes in system configuration and settings may require more disk space, prepare enough space on the disk to store the data.

- When you specify a folder or a directory, keep the following point in mind.

    - Specify the name of the directory to store data in not more than 46 bytes. If a name more than 46 bytes was specified, some information could be inaccurate.

- When the file was changed during collection, collection may fail with the message "file changed as we read it". In that case, re-execute the command.

Options

-noperf (optional)

Specify when omitting investigation information of dashboard function and activity status function to decrease the total amount of the output.

directory

Specify the directory name to store investigation data of this product for directory.

A directory path that includes spaces cannot be specified.

If the specified directory does not exist, it will be created automatically.

If the specified directory contains a file or a subdirectory that has the same name with one of the investigation data files, it will be overwritten.

Requirements

Permissions

System administrator

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\bin\ctmg_collectinfo c:\info
```

[Linux Manager]

```
# /opt/FJSVctmg/bin/ctmg_collectinfo.sh /tmp/info
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

12.10 ctmg_resetbackuperror (Recover Base Backup Error)

Name

[Windows Manager]

Installation_folder\RCXCTMG\bin\ctmg_resetbackuperror -Recover Base Backup Error

[Linux Manager]

/opt/FJSVctmg/bin/ctmg_resetbackuperror.sh -Recover Base Backup Error

Synopsis

[Windows Manager]

ctmg_resetbackuperror

[Linux Manager]

ctmg_resetbackuperror.sh

Functional Description

This command recovers base backup error, when following operation is done during taking base backup by online backup of the management server.

- Force-quit by Ctrl+C during backup command

- Shutdown of the manager during backup command

Requirements

Permissions

System administrator

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\bin\ctmg_resetbackuperror
Successfully reset the base-backup error.
```

[Linux Manager]

```
# /opt/FJSVctmg/bin/ctmg_resetbackuperror.sh
Successfully reset the base-backup error.
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

> **Note**
> ....
>
> - This command will end successfully even if there is no error to recover.
>
> - If the exit status is 0, a message notifying normal end is displayed.
>
> ```
> Successfully reset the base-backup error.
> ```

- If the exit status is not 0, a message notifying abnormal end is displayed.

```
Failed to reset the base-backup error.
```

12.11 recoverAllService (Disable L-Platform Application)

Name

[Windows Manager]

Installation_folder\RCXCTMG\MyPortal\bin\ recoverAllService -Disable L-Platform Application

[Linux Manager]

/opt/FJSVctmyp/bin/recoverAllService.sh -Disable L-Platform Application

Synopsis

[Windows Manager]

recoverAllService

[Linux Manager]

recoverAllService.sh

Functional Description

When resources are restored from data created by online backup, some unneeded L-Platform applications may remain.
In that case, use this command to nullify these applications.
This command will nullify all the pending L-Platform applications.
Using such as Information in the Home window, notify the tenant administrator and tenant users to submit their pending L-Platform applications again because they have been nullified.
Refer to "8.4 Editing Information in the Home Window" in the "Operation Guide CE" for details.
This operation is not needed if only offline backup has been performed.
To use this command, the manager software must be running.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Myportal\bin\recoverAllService
SUBSCRIPTION,SE0C92RW,admin01,SE0C92RW-R7CMAALFU,RHEL5_x86_SimpleType test01
SUBSCRIPTION,SE0C92RW,user01,SE0C92RW-Q6CVNE3XQ,user01 direct application
SUBSCRIPTION,RKUVRN9I,ctuser01,RKUVRN9I-4KOI076TF,st_recover5_forChangeSpec_2_10_dentest2
SUBSCRIPTION,TSM0X72G,user03,TSM0X72G-7NS07C0M5,windows2008
SUBSCRIPTION,0JFIHRXO,user04,0JFIHRXO-T9E4JHHXU,RHEL55x64_NIC4
SUBSCRIPTION,TSM0X72G,user03,TSM0X72G-VBG4XA7E2,service1
SUBSCRIPTION,TSM0X72G,user03,TSM0X72G-XDHP35MWX,service2
RECONFIGURATION,0JFIHRXO,admin01,0JFIHRXO-S8EA4MQU0,RHEL5_x86_SimpleType3
SUBSCRIPTION,0JFIHRXO,user02,0JFIHRXO-1HN6VXPEV,user02 application
```

```
UNSUBSCRIPTION,SE0C92RW,user04,SE0C92RW-Q6CVOYK9J,no specifications change
recovered service : 10
```

[Linux Manager]

```
# /opt/FJSVctmyp/bin/recoverAllService.sh
SUBSCRIPTION,SE0C92RW,admin01,SE0C92RW-R7CMAALFU,RHEL5_x86_SimpleType test01
SUBSCRIPTION,SE0C92RW,user01,SE0C92RW-Q6CVNE3XQ,user01 direct application
SUBSCRIPTION,RKUVRN9I,ctuser01,RKUVRN9I-4KOI076TF,st_recover5_forChangeSpec_2_10_dentest2
SUBSCRIPTION,TSM0X72G,user03,TSM0X72G-7NS07C0M5,windows2008
SUBSCRIPTION,0JFIHRXO,user04,0JFIHRXO-T9E4JHHXU,RHEL55x64_NIC4
SUBSCRIPTION,TSM0X72G,user03,TSM0X72G-VBG4XA7E2,service1
SUBSCRIPTION,TSM0X72G,user03,TSM0X72G-XDHP35MWX,service2
RECONFIGURATION,0JFIHRXO,admin01,0JFIHRXO-S8EA4MQU0,RHEL5_x86_SimpleType3
SUBSCRIPTION,0JFIHRXO,user02,0JFIHRXO-1HN6VXPEV,user02 application
UNSUBSCRIPTION,SE0C92RW,user04,SE0C92RW-Q6CVOYK9J,no specifications change
recovered service : 10
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

📖 **Note**

. . . .

- If the exit status is 0, a message notifying normal end is displayed.

```
<Application type>, <tenant name>, <owner (user)>, <VSYS-ID>, <L-Platform name>
recovered service : <Number of restored L-Platforms>
```

The application types are as follows:

SUBSCRIPTION (Application to use)

RECONFIGURATION (Specification change)

UNSUBSCRIPTION (Cancellation)

- If the exit status is 1, a message notifying abnormal end is displayed.

    - If connection with the L-Platform Management function failed

    ```
    VSYS error:
    VSYS connection failed.
    ```

- If an error was returned from the L-Platform Management function

    ```
    VSYS error:
    <Contents of L-Platform Management function error>
    ```

. . . .

12.12 recoverService (Disable L-Platform Application)

Name

[Windows Manager]

Installation_folder\RCXCTMG\MyPortal\bin\recoverService -Disable L-Platform Application

[Linux Manager]

/opt/FJSVctmyp/bin/recoverService.sh -Disable L-Platform Application

Synopsis

[Windows Manager]

recoverService L-Platform ID

[Linux Manager]

recoverService.sh L-Platform ID

Function explanation

This command allows the L-Platform specified using the L-Platform ID to be canceled again.

This command can only be executed for an L-Platform that resulted in an error while cancelling it or is currently undergoing an application to cancel it.

If the L-Platform ID of an L-Platform template undergoing a configuration saves has been specified, the relevant L-Platform template undergoing a configuration save will be deleted.

If other than the L-Platform ID of an L-Platform template undergoing a configuration save or of an L-Platform undergoing an application to cancel L-Platform has been specified, an L-Platform Management function error will be returned.

Options

L-Platform-ID

Specifies the L-Platform ID of the L-Platform that is to be allowed to be canceled again.

Requirements

Permissions

Infrastructure administrator with OS administrator privilege

Location

Admin server

Example

[Windows Manager]

```
C:\Users\Administrator> C:\Fujitsu\ROR\RCXCTMG\Myportal\bin\recoverService <L-Platform ID>
```


[Linux Manager]

```
/opt/FJSVctmyp/bin/recoverService.sh <L-Platform ID>
```


Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

📌 **Note**

. . . .

- If <L-Platform ID> is not specified or if two or more are specified, the following error message will be displayed. The exit status will be 1:

  [Windows Manager]

  ```
  [recoverService] ctmyp1005: Required parameter is missing.
  Usage: recoverService.bat L-Platform-ID
  ```

  [Linux Manager]

  ```
  [recoverService] ctmyp1005: Required parameter is missing.
  Usage: recoverService.sh L-Platform-ID
  ```

- If the exit status is 0, a message notifying normal end is displayed.

  ```
  Command succeeded.
  ```

- If the exit status is not 0, a message notifying abnormal end is displayed.

  - If connection with the L-Platform Management function failed

    ```
    VSYS error:
    VSYS connection failed.
    ```

  - If an error was returned from the L-Platform Management function

    ```
    VSYS error:
    <Contents of L-Platform Management function error>
    ```

. . . .

Part 2　File Reference

Chapter 13 XML Files

This chapter explains resource configuration information and user definition information (XML files).

13.1 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.

13.2 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 "13.2.1 Physical L-Server Templates".
For virtual L-Servers, refer to "13.2.2 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.

13.2.1 Physical L-Server Templates

The L-Server template for physical 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>
    <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 13.1 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 on the FC connection pattern file, refer to "B.1 Creating Definition Files" in the "Setup Guide CE" [Windows Manager] *Installation_folder*\SVROR\Manager\etc\customize_data\fc_connection_pattern [Linux Manager] /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

Element Name	Description	Remarks (Possible Values, Examples)
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 "16.2.2 [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 (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 "16.2.2 [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 "16.2.2 [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. <pre>\<Disks\>\n \<DiskIndex\>0\</DiskIndex\>\n \<DiskSize\>10.0\</DiskSize\>\n\</Disks\></pre>

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 "13.3.1 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 "16.2.3 [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	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.

Element Name	Description	Remarks (Possible Values, Examples)
	allocate to the L-Server (Optional, but required when specifying the NIC 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 "9.3.5 Pre-configuring Managed Servers" in the "Design 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". •
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 "9.3.5 Pre-configuring Managed Servers" in the "Design 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". •

Element Name	Description	Remarks (Possible Values, Examples)

Redundancy
 	
(Redundancy)
	Server redundancy to allocate to L-Servers
	
	(optional)
		- None
		
		  None
		
		- HA
		
		  Specify when performing redundancy.
		
		If omitted and not specified when creating the L-Server, "None" is set.
		For details on the redundancy, refer to "16.2.2 [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 "17.8.1 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
<?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 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>
```

13.2.2 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>
    <ServerImageLink disk="Disk Deployment Settings during Image Specification(all)"/>
    <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 13.2 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.
Disk deployment settings during image specification (disk)	Disk deployment settings held by images (optional)	"all" Create an L-Server with the same disk configuration as an image. When omitted, only system disks for images are deployed.
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 "16.3.2 [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 "16.3.2 [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.

Element Name	Description	Remarks (Possible Values, Examples)
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.
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 "16.3.2 [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.

Element Name	Description	Remarks (Possible Values, Examples)
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 (*1) (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 "13.3.2 Definition Information for Virtual L-Servers (XML)". 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 (*5) (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 "16.3.3 [Disk] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE". When all is specified in "ServerImageLink", and an image is specified, priority is given to the disk capacity of the image, and a disk is created.
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 "16.3.2 [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 "16.3.2 [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".

Element Name	Description	Remarks (Possible Values, Examples)
		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 "17.8.1 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 (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.

*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/jp/support/support-resources/pubs/

*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.

*5: The disk elements can be omitted when automatically selecting the destination to store disks during L-Server creation. When creating an L-Server by specifying a template on the ROR console, configure the relevant disk elements for the template when specifying the destination to store disks.

📌 Example

- When specifying VMware for the VM type, create an L-Server template (two NICs)

```xml
<?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 VMware for the VM type and creating an L-Server template with the same disk configuration as that of an image (with 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>
  <ServerImageLink disk="all"/>
  <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>10</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>
```

13.3 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 "13.3.1 Definition Information for Physical L-Servers (XML)".
For virtual L-Servers, refer to "13.3.2 Definition Information for Virtual L-Servers (XML)".

13.3.1 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>
```

```xml
      <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 13.3 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 "16.1 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.
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 on the FC connection pattern file, refer to "B.1 Creating Definition Files" in the "Setup Guide CE" [Windows Manager] *Installation_folder*\SVROR\Manager\etc\customize_data\fc_connection_pattern [Linux Manager] /etc/opt/FJSVrcvmr/customize_data/fc_connection_pattern

Element Name	Description	Remarks (Possible Values, Examples)
		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 "3.6 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 "16.2.2 [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 "16.2.2 [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. For details on the scope which can be specified, refer to "16.2.2 [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 "3.6 rcxadm lserver".
Disk name (*2) (Disk name)	The disk name to allocate to L-Servers	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.

Element Name	Description	Remarks (Possible Values, Examples)
	(optional)	

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 Resource Orchestrator to allocate to the L-Server (optional)	Specify the disk name to allocate.
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 "16.2.3 [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	Specify the resource name of an existing virtual storage.

Element Name	Description	Remarks (Possible Values, Examples)
	If specified at the same time as storage pool, priority is given to this attribute. (optional)	
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 (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.
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 "9.3.5 Pre-configuring Managed Servers" in the "Design 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". ···
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 "9.3.5 Pre-configuring Managed Servers" in the "Design 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"
		
		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 MAC address 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.

Element Name	Description	Remarks (Possible Values, Examples)
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, *7)
(Redundancy)
	Server redundancy to allocate to L-Servers
	
	(optional)
		- None
		
		    None
		
		  - HA
		
		    Specify when performing redundancy.
		
		If omitted, "None" is set.
		For details on the redundancy, refer to "16.2.2 [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

Element Name	Description	Remarks (Possible Values, Examples)
		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 "17.8.1 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 "3.6 rcxadm lserver".

Alive monitoring settings (*1, *2, *4, *7)
 	
(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 If specified at the same time as server pool, priority is given to the specifications of the physical server.	Specify the physical server to allocate to the L-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)	Server pool for reserve settings	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*

Element Name	Description	Remarks (Possible Values, Examples)
(Pool name)	(optional)	

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 "17.8.1 Installation" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".

Computer name, hostname (*2, *6) (ComputerName)	Computer name and hostname	[Physical Servers] For specifiable values, refer to "B.7 [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.

*7: The values for an L-Server deployed from an L-Platform can be changed by changing the configuration. In this case, use an XML file which only contains the elements for alive monitoring settings and redundancy.

📝 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 13.4 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>
```

··

13.3.2 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 version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server Name" label="Label">
```

```xml
    <Comment>Comment</Comment>
    <TemplateLink name="L-Server Template Name"/>
    <ServerImageLink name="Image Name" version="Image Version" disk="Disk Deployment Settings
during Image Specifications(all)"/>
    <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 13.5 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 "16.3.1 [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.
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 "16.1 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.
Disk deployment settings during image specification (ServerImageLink disk)	Disk deployment settings held by images (optional)	Specify "all". Create an L-Server with the same disk configuration as an image. When omitted, only system disks are deployed for images . Enabled when VM type is set to "VMware" or "Hyper-V".

Element Name	Description	Remarks (Possible Values, Examples)
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 "16.3.2 [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.
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 "16.3.2 [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.

Element Name	Description	Remarks (Possible Values, Examples)

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) (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 "16.3.2 [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.

Element Name	Description	Remarks (Possible Values, Examples)

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.
		
		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

Element Name	Description	Remarks (Possible Values, Examples)
		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.
		
		 - 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.

Element Name	Description	Remarks (Possible Values, Examples)

Disk name (*2, *15, *16)
 	
(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, *15, *16) (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.
		    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"

Element Name	Description	Remarks (Possible Values, Examples)
		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 "16.3.3 [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.
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.

Element Name	Description	Remarks (Possible Values, Examples)
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.
		
		  - 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

Element Name	Description	Remarks (Possible Values, Examples)
		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, *14)
 (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 "16.3.2 [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 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".

Element Name	Description	Remarks (Possible Values, Examples)
		- 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 "17.8.1 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, *14)
 	
(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 as resource pool, priority is given to this attribute. (optional)	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.
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*

Element Name	Description	Remarks (Possible Values, Examples)
		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 "17.8.1 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 "C.2.9 [OS] Tab Configuration" in the "Setup Guide CE". [Hyper-V] For specifiable values, refer to "C.3.10 [OS] Tab Configuration" 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	[VMware] For specifiable values, refer to "C.2.9 [OS] Tab Configuration" in the "Setup Guide CE". [Hyper-V] For specifiable values, refer to "C.3.10 [OS] Tab Configuration" in the "Setup Guide CE".
License mode (*2, *11) (CAL)	Client access license set for Windows	
Maximum number of connections (*2, *11) (CALMaxConnection)	Number of client connections set for Windows	
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> \<DNSSearchPath>DNS Search Path2\</DNSSearchPath> \</DNSSearchPaths> [VMware] For specifiable values, refer to "C.2.9 [OS] Tab Configuration" in the "Setup Guide CE".

Element Name	Description	Remarks (Possible Values, Examples)
		[Hyper-V] For specifiable values, refer to "C.3.10 [OS] Tab Configuration" 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 "C.2.9 [OS] Tab Configuration" in the "Setup Guide CE". [Hyper-V] For specifiable values, refer to "C.3.10 [OS] Tab Configuration" 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.

> URL:
> http://www.vmware.com/support/developer/vc-sdk/visdk400pubs/ReferenceGuide/vim.vm.GuestOsDescriptor.GuestOsIdentifier.html

*5: The value can be modified using the rcxadm lserver modify command. For details on the rcxadm lserver modify command, refer to "3.6 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/

*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/

*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.

*14: The values for an L-Server deployed from an L-Platform can be changed by changing the configuration. In this case, use an XML file which only contains the elements for alive monitoring settings and redundancy.

*15: When specifying "all" for disk deployment settings during image specification, it is recommended to omit the specifications for disks with numbers other than "0". When specifying disks with numbers other than "0", specify the appropriate disk numbers.

*16: When specifying "all" for disk deployment settings during image specifications, all disks are created in the same storage destination as the boot disks. When specifying the destination for storage of disks, define only the disk with the number "0".

📝 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>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 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 with the same disk configuration as the cloning image using an L-Server template (pre-configured OS property definition file)

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server_with_datadisk">
    <TemplateLink name="small_with_datadisk"/>
    <ServerType>Virtual</ServerType>
    <ServerImageLink name="/ImagePool/
master_image_with_datadisk" disk="all"/>
    <NICs>
      <NIC>
        <NICIndex>0</NICIndex>
          <NetworkLinks>
            <NetworkLink name="net01"/>
          </NetworkLinks>
      </NIC>
    </NICs>
    <OSSetting>
      <ComputerName>host2</ComputerName>
    </OSSetting>
</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 with the same disk configuration as the cloning image without using an L-Server template (specifying the storage destination and pre-configured OS property definition file)

```
<?xml version="1.0" encoding="utf-8"?>
<Resources>
  <LServer name="L-Server">
    <ServerImageLink name="/ImagePool/
master_image_with_datadisk" disk="all"/>
    <ServerType>Virtual</ServerType>
    <CPU>
      <CPUPerf>1.0</CPUPerf>
      <NumOfCPU>1</NumOfCPU>
    </CPU>
    <Memory>
      <MemorySize>2</MemorySize>
    </Memory>
    <Disks>
      <Disk>
        <DiskIndex>0</DiskIndex>
        <From>
          <VirtualStorage name="/StoragePool/SAN001">
        </From>
      </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 13.6 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>
```

13.4 Storage Resources

This section explains the XML definitions of storage resources.

13.4.1 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 13.7 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 ("-").

Element Name	Description	Remarks (Possible Values, Examples)
		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. 📝 **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 "16.3.3 [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>
```

. . . .

13.4.2 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 13.8 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 "16.2.3 [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)	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.

Element Name	Description	Remarks (Possible Values, Examples)
(Nic portindex)		
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.
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>
```

13.5 Network Resources

This section explains the creation and modification of network resources.

13.5.1 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 13.9 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 ("-").

Element Name	Description	Remarks (Possible Values, Examples)
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. - 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.

Element Name	Description	Remarks (Possible Values, Examples)
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
 	
(ExternalPorts vlanautosetting)
	Specify whether or not to automatically perform VLAN setting for external connection ports.
	
	(optional)
		Specify whether or not to automatically perform VLAN setting for external connection ports of a LAN switch blade.
		
		  - true
		
		   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 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.

Element Name	Description	Remarks (Possible Values, Examples)
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) (AddressRange start)	Starting point of exclusion range of IP addresses	Specify the IP address in IPv4 format.
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 13.10 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>
```

13.5.2 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

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 bx600-lan2 bx900-lan1 bx900-lan2 bx400-lan1 bx400-lan2	40 40 41 41 linkaggregation1 linkaggregation2	bx900-lan1 bx900-lan2	41 41

- 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 bx900-lan2 bx400-lan1 bx400-lan2	41 41 linkaggregation1 linkaggregation2	bx900-lan1 bx900-lan2 bx400-lan1 bx400-lan2	40 40 linkaggregation11 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>
```

13.6 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 rcxnetworkservice register (*1)
	Batch creation	rcxadm netconfig import rcxnetworkservice register (*1)
Modification		rcxadm netdevice modify

*1: This command is used to register NS Appliances as network devices.

For details on the rcxnetworkservice command, refer to "Appendix A Commands" in the "NS Option Instruction".

13.6.1 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" subnetmask="Admin LAN Subnet Mask" vlanid="Admin LAN VLAN
ID" name="Device Name">
  <Location>Location</Location>
  <Types>
    <Type>Type</Type>
  </Types>
  <ApplianceType>Appliance Type</ApplianceType>
  <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" subnetmask="Admin LAN Subnet Mask" vlanid="Admin LAN VLAN
ID" name="Device Name">
    <Location>Location</Location>
    <Types>
      <Type>Type</Type>
    </Types>
    <ApplianceType>Appliance Type</ApplianceType>
    <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>
    <Mode>Link Information Registration Mode</Mode>
    <Link>
      <Devices>
        <Device ip="Admin IP Address of Device 1" name="Resource Name 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" name="Resource Name of Device 2" kind="Type
of Device 2">
          <Port>Connection Port Name of Device 2</Port>
        </Device>
      </Devices>
    </Link>
  </Links>
</NetConfig>
```

Table 13.11 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.	Not possible	Not possible	Optional	-

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	
		- 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 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
Admin LAN subnet mask (Netdevice subnetmask)	Admin LAN subnet mask (optional)	Specify the subnet mask for the admin LAN in the IPv4 format. Be sure to specify this when registering an NS Appliance.	Optional	Optional	Optional	Yes (*2)
VLAN ID for admin LAN (Netdevice vlanid)	VLAN ID for admin LAN (optional)	Specify an integer between 1 and 4094. When registering NS Appliances. only specify this when using a VLAN that is different from the admin LAN for physical L-Servers where NS Appliances are deployed.	Optional	Optional	Optional	Yes (*2)
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. Be sure to specify this when registering an NS Appliance. However, when registering NS Appliances, underscores ("_") cannot be used in device names.	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	A collection of type information	Specify one or more Type elements.	Optional	Optional	Optional	Yes (*1)

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
(Types)	(optional)					
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. When registering NS Appliances, specify "Firewall".	Optional	Optional	Optional	Yes (*2)

Appliance type (ApplianceType)	Appliance type (optional)	Specify the type of the appliance. Specify one of following items.
		 - physical
		   Physical appliance
		 - virtual
		   Virtual appliance
		 If left blank, "physical" is specified.
		 When registering NS Appliances, specify "virtual".
			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
		 - false
		   Not the target of auto-configuration
		 If left blank, "true" is specified.
			Optional	Optional	Optional	-

Device information (DeviceInfo)	Device information	Information that is automatically collected by network device model definition and SNMP.	Optional	-	Optional	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
		Specify the device information when directly specifying the vendor name, unit name or model name.				
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 (optional)	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 (*8) where the rulesets for L-Platform templates are registered. When omitted, the vendor name obtained from the Network Device Model Definitions is specified. When registering NS Appliances, specify "Fujitsu".	Optional	-	Optional	Yes
Device name (ProductName)	Device name (product name) (optional)	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 (*8) where the rulesets for L-Platform templates are registered. When omitted, the unit name obtained from the Network Device Model Definitions is specified.	Optional	-	Optional	Yes
Model Name (ModelName)	Model name (optional)	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 (*8) where the rulesets for L-Platform templates are registered. When omitted, the model name obtained from the Network Device Model Definitions is specified. When registering NS Appliances, specify "NSAppliance".	Optional	-	Optional	Yes
Firmware	Firmware or IOS version	A character string is specified.	-	-	-	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
(Firmware)		Specification is unnecessary as it is automatically collected by SNMP.				
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 (optional)	Specify the ReadCommunity element once.	Optional	Optional	Optional	Yes
Community name (ReadCommunity)	Community name (This cannot be omitted when specifying SNMP information)	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). Be sure to specify this when registering an NS Appliance.	Optional	Optional	Optional	Yes
Login information (LoginInfos)	A collection of login information (optional)	Specify one or more LoginInfo elements.	Optional	Optional	Optional	Yes (*1)
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 or not to check the account information when the registration or modification is performed. Specify one of following items. - true Checking is performed. (*4)	Optional	Optional	Optional	-

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
		- false Checking is not performed. If left blank, "false" is specified.				
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)
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 ("-"). When registering NS Appliances, specify a password using from 6 to 32 characters.	Required	Optional	Required	Yes (*3)
Administrator password	Administrator password (optional)	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").	Optional	Optional	Optional	Yes (*3)

Element Name	Description	Remarks (Possible Values, Examples)	Specification Individual Registration	Individual Modification	Batch Registration	Output Using Export
(PrivilegedPassword)		When registering NS Appliances, be sure to specify a password using from 6 to 32 characters.				
Password encryption (PasswordEncryption)	Presence or absence of password encryption (optional)	Specify whether or not 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. - 0: Not monitored - 1: SNMP monitoring - 2: ping monitoring - 3: ping and SNMP monitoring If left blank, "1" is set.	Optional	Optional	Optional	Yes
Monitoring interval (Interval) (*5)	Monitoring interval (seconds) (This cannot be omitted when modifying the monitoring method)	Specify an integer between 1 and 86400. 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

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	
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: - F Represents full duplex. - H Represents half duplex. - - Represents unknown. Specification is unnecessary as it is automatically collected by SNMP.	-	-	-	Yes
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)

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
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 information registration mode
 	
(Mode)
	Link information registration mode
	
	(optional)
		Specify the registration mode of the link information.
		
		Specify one of following items.
		
		- add
		
		  New registration
		
		  When the information is the same as that of an already registered link, the link information will not be overwritten.
		
		- modify
		
		  Modification
		
		  After deleting all already registered link information, register the new link information.
		
		If left blank, "modify" is specified.
			Optional	Optional	Optional	-

Link (Link)	Link definition (This cannot be omitted when specifying link information)	Specify the Devices element once.	Not possible	Not possible	Optional	Yes (*1)

Element Name	Description	Remarks (Possible Values, Examples)	Specification			Output Using Export
			Individual Registration	Individual Modification	Batch Registration	
Device information (Devices)	Definition of device information (This cannot be omitted when specifying links)	Specify the Device element twice.	Not possible	Not possible	Optional	Yes (*1)
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 name (Device name)	Device name (Specification is not necessary)	The network device name registered from the admin IP address for devices is specified. When using devices other than network devices, the device name that is the connection destination set by auto-configuration functions is supplemented.	-	-	-	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 "9.3.5 Pre-configuring Managed Servers" in the "Design 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>
	Nexus	Login prompt	login:
		Password prompt	Password:
		Command prompt	*Arbitrary_character_string*#
			Arbitrary_character_string>
Brocade	VDX	Login prompt	Login:
		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>

*8: For details on folders for registration of rulesets for L-Platform templates, refer to "9.4.9 When Automatically Configuring Network Devices" in the "Design Guide CE".

📝 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 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>
```

13.6.2 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.

13.7 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 13.12 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	Resource folder label	Specify a character string of up to 32 alphanumeric characters or symbols.

Element Name	Description	Remarks (Possible Values, Examples)
(Folder label)	(optional)	
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 "13.3 L-Servers".

📝 **Example**

. . . .

```xml
<?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>
```

. . . .

13.8 User

This section explains the XML definitions of Users.

13.8.1 Tenant Management Roles and Tenant User Role

The XML definition for users with tenant management roles and tenant user roles is shown below.

```xml
<?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 13.13 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 1 and 32 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
		
		  - 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	User's middle name	Specify a character string up to 15 characters.

Element Name	Description	Remarks (Possible Values, Examples)
(MiddleName)		

*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>
```

. . . .

13.8.2 Infrastructure Administrative Roles and Multiple Roles

```
<?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 13.14 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 1 and 32 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.
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
<?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>
```

13.9 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 13.15 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 "5.1 Restricting Access Using Roles" in the "Design 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".

```
<?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>
```

13.10 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>
    <CutOffDate>Cut off date</CutOffDate>
    <AccountingMailAddress>Accounting mail address</
AccountingMailAddress>
    <Pools>
      <Pool name="Resource pool name" type="Resource pool type"
label="Label">
        <Comment>Comment</Comment>
        <Priority>Priority</Priority>
        <Attributes>
          <OverCommit>Overcommit attributes</OverCommit>
          <CalculatedUsing>Calculation methods for free space</
CalculatedUsing>
          <Thin>Thin Provisioning attributes</Thin>
        </Attributes>
      </Pool>
    </Pools>
    <GlobalPoolLinks>
      <GlobalPoolLink>Global Pool Name</GlobalPoolLink>
      ...
    </GlobalPoolLinks>
  </Tenant>
</Tenants>
```

Table 13.16 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.

Element Name	Description	Remarks (Possible Values, Examples)
E-mail address (MailAddress)	Mail address of the tenant administrator	Specify a character string of up to 64 alphanumeric characters or symbols.
Cut off date (CutOffDate)	Cut off date for accounting information	2-digit number to represent the date (1 to 31)
Accounting mail address (AccountingMailAddress)	Mail address to send the usage fee information to	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.
Overcommit attributes (*2) (OverCommit)	Setting for overcommit (optional)	Set enabling/disabling of overcommit for a VM pool. If omitted, "false" is set. - When enabling overcommit Specify "true". - When disabling overcommit Specify "false".
Calculation methods for free space (*2) (CalculatedUsing)	Settings for calculation methods for the free space of resources (optional)	Set the calculation methods for free space for VM pools that have overcommit enabled. If omitted, "limit" is set. - When calculating the free space using a reservation value Specify "reserve".

Element Name	Description	Remarks (Possible Values, Examples)
		- When calculating the free space using the upper limit value Specify "limit".
Thin Provisioning attributes (*2) (Thin)	Settings for Thin Provisioning attributes (optional)	Set Provisioning attributes for storage pools. If omitted, "false" is set. - When configuring Thin Provisioning attributes Specify "true". - When configuring Thick Provisioning attributes Specify "false".
Global pool name (GlobalPoolLink)	Name of the global pool (optional)	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 ("/").

*1: User group of the same name as the specified name of the tenant is created.

*2: When upgrading an admin server from ROR V2.3.0 to V3.0.0, if the migration procedure is not performed according to the configuration methods for the overcommit functions, this element cannot be configured. Edit the definition files separately. For details, refer to "G.1.1 Overcommit Definition File" in the "Setup Guide CE".

13.11 Server NIC Definition

To register the server NIC definition, create the following files:

[Windows Manager]
Installation_folder**SVROR\Manager\etc\customize_data\nicdefctl\model***Chassis_model_name_product_name.xml* (*1)
Installation_folder**SVROR\Manager\etc\customize_data\nicdefctl\host***VM_host_name.xml* (*2)

[Linux Manager]
/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 13.17 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 "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)

Element Name	Description	Remarks (Possible Values, Examples)

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 server virtualization software is VMware. When the server virtualization software is not VMware, this specification is disabled.
		When using the element with teaming configurations, specify active or standby.
		
		- Active
		
		  Indicates active.
		
		- Standby
		
		  Indicates standby.

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

The sample XML files for server NIC definitions are stored in the following folders:

The configuration used by default is described in the sample file.

[Windows Manager]

Installation_folder**Manager\etc\customize_data\nicdefctl\sample\model**

[Linux Manager]
/etc/opt/FJSVrcvmr/customize_data/nicdefctl/sample/model

For bx900_d2952.xml

```
<?xml version="1.0" encoding="utf-8"?>
<Server chassis_model="BX900" model="D2952">
```

```
    <NICGroups>
      <NICGroup>
        <NICs>
          <NIC index="1" redundant="Active" />
          <NIC index="2" redundant="Standby" />
        </NICs>
        <PhysicalLANSegments>
          <PhysicalLANSegment name="BX900_BX924S2_PGSW111_CB1CB2" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW112_CB1CB2" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW109_CB1CB2" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW201_CB1CB2" />
        </PhysicalLANSegments>
      </NICGroup>
      <NICGroup>
        <NICs>
          <NIC index="3" redundant="Active" />
          <NIC index="4" redundant="Standby" />
        </NICs>
        <PhysicalLANSegments>
          <PhysicalLANSegment name="BX900_BX924S2_PGSW111_CB3CB4" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW112_CB3CB4" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW109_CB3CB4" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW201_CB3CB4" />
        </PhysicalLANSegments>
      </NICGroup>
      <NICGroup>
        <NICs>
          <NIC index="7" redundant="Active" />
          <NIC index="8" redundant="Standby" />
        </NICs>
        <PhysicalLANSegments>
          <PhysicalLANSegment name="BX900_BX924S2_PGSW109_CB5CB6" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW201_CB7CB8" />
        </PhysicalLANSegments>
      </NICGroup>
      <NICGroup>
        <NICs>
          <NIC index="9" redundant="Active" />
          <NIC index="10" redundant="Standby" />
        </NICs>
        <PhysicalLANSegments>
          <PhysicalLANSegment name="BX900_BX924S2_PGSW111_CB7CB8" />
          <PhysicalLANSegment name="BX900_BX924S2_PGSW112_CB7CB8" />
        </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.

13.12 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 Manager]
Installation_folder**SVROR\Manager\etc\customize_data\vnetwork_excluded_vmware.rcxprop**

[Linux Manager]
/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
```

13.13 Network Device Model Definition

Create the model definition file for network devices in the following folders:

[Windows Manager]
Installation_folder**SVROR\Manager\etc\customize_data\network_device_model.xml**

[Linux Manager]
/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 13.18 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 (*2) 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 (*2) 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 enterprise_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 "9.4.9 When Automatically Configuring Network Devices" in the "Design 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 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.

. . . .

13.14 Parameter Files (for Scripts)

The changeable XML definition to be used by the ruleset script is shown below.

```
<?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 13.19 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.

13.15 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 Manager]
Installation_folder**SVROR\Manager\etc\scripts\network_resource\Unm_network_setting.xml**

[Linux Manager]
/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 13.20 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.

13.16 User (for Basic mode)

The XML definition for users is shown below.

```xml
<?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 13.21 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 "5.1 Restricting Access Using Roles" in the "Design 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>
```

∙∙

13.17 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 13.22 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 "13.9 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 "13.8 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
<?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>
```

· ·

13.18 Software Information

This section explains the software information manipulation commands.

You can use already registered software information.

Refer to "Appendix C Registered Software IDs" for details.

13.18.1 Overview of Software Information

Software information files are XML documents that list configuration information for the software (operating system) included in a cloning image.

Create and register one software information file for each item of software.

Software information for operating systems is included with the products, so infrastructure administrators will not usually need to create software information.

Refer to "Appendix C Registered Software IDs" for information on the software information included with this product.

If information such as license information is required, the infrastructure administrator must modify the file contents.

Refer to "13.18.2 File Information Details" for a description of items (tags).

New software information will need to be created when registering software such as OSS.

Infrastructure administrators must take this model into account when performing creation.

The software information model is stored in the following folder:

[Windows Manager]

```
Storage folder: Installation_folder\templates\softwares\
```

[Linux Manager]

```
Storage directory: /opt/FJSVcfmg/templates/softwares/
```

13.18.2 File Information Details

Software information files use the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?>
<software version="2.0">
    <id>[Software ID]</id>
    <lcid>[Locale ID]</lcid>
    <name>[Software name]</name>
    <ownerOrg>[Owner (tenant)]</ownerOrg>
```

```
        <ownerUser>[Owner (user)]</ownerUser>
        <category>[Software category]</category>
        <osCategory>[Operating system category]</osCategory>
        <version>[Version]</version>
        <officialVersion>[Official version]</officialVersion>
        <patch>[Patch version number]</patch>
        <license>[License]</license>
        <support>[Support]</support>
        <productId>[Model number]</productId>
</software>
```

The following table shows descriptions of each of these items (tags), as well as their settings:

Modify software information files if necessary, by referring to the information in this table.

Tag names in square brackets [ ] can be omitted.

Tag name	Format	Setting range	Description	Mand atory	Settings
[id]	-	-	The ID allocated when the software information was registered.	No	No value is specified at new creation.
[lcid]	string ASCII	Fixed value	The locale for the software information.	Yes	The value is fixed as "en"
[name]	string UTF-8	Up to 85 characters	The name of the software. Specify this item when registering software information.	Opti onal	
ownerOrg	String ASCII	Fixed value	The tenant name to which the software belongs.	Yes	The value is fixed as "cfmgadm".
ownerUser	String ASCII	Fixed value	The user ID of the user registering the software.	Yes	The value is fixed as "cfmgadm".
category	string ASCII	Select an option	The category of the software.	Yes	Select one of the following options: - "OS": Operating system - "MIDDLE": Middleware - "APP": Application
osCategory	string ASCII	Select an option	The category of the software.	Yes	Select one of the following options: - "windows": Windows - "linux": Linux - "windows64": Windows (64 bit) - "linux64": Linux (64 bit) - "solaris":Solaris
version	string ASCII	1 to 10 Bytes	The software version.	Yes	Specify the version. (Example) 9.2.0
officialVersion	-	-	The official version.	No	
patch	-	-	Patch information.	No	Specify information about the patches that have been applied in the image information files.
license	string UTF-8	Up to 85 characters	License information for the software.	Opti onal	If "OS" was selected for the category item, specify the product key for the Windows operating system. Specification cannot be done if the OS is Linux or Solaris. - When the virtualization software is VMware

Tag name	Format	Setting range	Description	Mand atory	Settings
					For Windows Server 2003, specify the product key for the Windows operating system. (Example) XXXXX-XXXXX-XXXXX-XXXXX-XXXXX If the operating system is one other than Windows Server 2003, specify an empty string. - When the virtualization software is Hyper-V Specify the product key for the Windows operating system. (Example) XXXXX-XXXXX-XXXXX-XXXXX-XXXXX When the virtualization software is RHEL-KVM, specification cannot be done. - This cannot be specified when the virtualization software is Solaris Container.
support	string UTF-8	Up to 85 characters	Support information for the software.	Opti onal	
productId	-	-	The software product ID.	No	

The meanings of the symbols in the Mandatory column are as follows:

Yes: If a tag was specified, you must specify the value.

Optional: Value can be omitted.

No: A value setting is not required. Tag only specification.

13.19 Image Information

This section explains the image information in detail.

13.19.1 Overview of Image Information

Image information files are XML documents that list the configuration information for cloning images.

Create and register a separate image information file for each cloning image.

Infrastructure administrators must take this model into account when performing creation.

A model image information file is stored in the following folder:

[Windows Manager]

```
Storage folder: Installation_folder\templates\images\
```

[Linux Manager]

```
Storage directory: /opt/FJSVcfmg/templates/images/
```

Refer to "13.19.2 File Information Details" for a description of cloning items (tags).

The software ID (which was assigned when the software information was registered) must be entered as the software ID in the image information.

13.19.2 File Information Details

Image information files use the following XML format:

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<image version="2.0">
    <id>[Cloning image ID]</id>
    <name>[Cloning image name]</name>
    <resourceId>[Resource ID]</resourceId>
    <imageName>[Cloning image name]</imageName>
    <ownerOrg>[Owner (tenant)]</ownerOrg>
    <ownerUser>[Owner (user)]</ownerUser>
    <publicCategory>[Public category]</publicCategory>
    <serverCategory>[Sever category]</serverCategory>
    <serverApplication>[Server application]</serverApplication>
    <serverType>[Default server type]</serverType>
    <cpuBit>[CPU bit number]</cpuBit>
    <sysvolSize>[System disk size]</sysvolSize>
    <maxCpuPerf>[Maximum CPU performance]</maxCpuPerf>
    <numOfMaxCpu>[Maximum number of CPUs]</numOfMaxCpu>
    <maxMemorySize>[Maximum memory size]</maxMemorySize>
    <numOfMaxDisk>[Maximum number of disks]</numOfMaxDisk>
    <maxDiskSize>[Maximum disk size]</maxDiskSize>
    <numOfMaxNic>[Maximum number of NICs]</numOfMaxNic>
    <initialPassword>[Initial password]</initialPassword>
    <icon>[Icon type]</icon>
    <virtualization>[Virtualization method]</virtualization>
    <filterPool>[Filter string]</filterPool>
    <dataDiskFlag>[Data disk use]</dataDiskFlag>
    <softwares>
        <software>
            <id>[Software ID]</id>
            <order>[Display order]</order>
            <patches>
                <patch>
                    <id>[Patch ID]</id>
                    <locale>
                        <lcid>[Locale ID]</lcid>
                        <componentName>[Component name]</componentName>
                        <description>[Description]</description>
                    </locale>
                    ...
                </patch>
                ...
            </patches>
        </software>
        ...
    </softwares>
    <vdisks>
        <vdisk>
            <no>[Disk number]</no>
            <diskSize>[Disk capacity]</diskSize>
        <vdisk>
        ...
    </vdisks>
</image>
```

The following table shows descriptions of each of these items (tags), as well as their settings:

Modify image information files if necessary, by referring to the information in this table.

Tag cloning names in square brackets [ ] can be omitted.

Tag name	Format	Setting range	Description	Mandatory	Settings
id	string ASCII	1 to 32 Bytes	The cloning image ID.	Yes	When image information is updated, cloning image ID to be updated is specified. When newly making it, it doesn't specify it.
name	string ASCII	Up to 85 characters	The cloning image name.	Yes	The name of image information is specified.
resourceId	String ASCII	1 to 256Bytes	The resource ID.	Yes	Specify the resource ID that was confirmed using the "9.13 cfmg_listvmimage (Displaying a Cloning Image List)" command.
imageName	String ASCII	1 to 32Bytes	The cloning image name.	Yes	Specify the cloning image ID that was confirmed using the "9.13 cfmg_listvmimage (Displaying a Cloning Image List)" command.
ownerOrg	string ASCII	Fixed value	The tenant name to which the cloning image belongs.	Yes	The value is fixed as "cfmgadm".
ownerUser	string ASCII	Fixed value	The user ID of the user registering the cloning image.	Yes	The value is fixed as "cfmgadm".
publicCategory	string ASCII	Select an option	This item selects the cloning image category.	Yes	Select one of the following options: "PUBLIC": Show the cloning image to all users. "PRIVATE": Show the cloning image to the owner (user) only. This can only be specified if the replication function is being used. It cannot be specified at template creation.
serverCategory	string ASCII	Fixed value	This item selects the category of the server included in the cloning image.	Yes	The value is fixed as "GENERAL". The server is a generic server.
serverApplication	string ASCII	Select an option	The usage of the server included in the cloning image.	Yes	One or more of the following options can be selected: - "WEB": Web server - "AP": Application server - "DB": DB server If multiple options are specified, separate each option with a forward slash ("/"). Options can be specified in any order. (Example) WEB/AP, AP/WEB/DB, etc.
serverType	string ASCII	0 to 32 Bytes	The server type.	Optional	If this cloning image has been used, specify the name of the L-Server template that is to be selected as the default from amongst the L-Server templates that have been set using Resource Management.

Tag name	Format	Setting range	Description	Mandatory	Settings
cpuBit	integer	Select an option	The CPU bit count of the server included in the cloning image.	Yes	Select one of the following options: - "32": 32 bit - "64": 64 bit
sysvolSize	decimal	In decimal notation, to one decimal place	The size of the system disk for a server included in the cloning image.	Yes	Specify this value in GB.
[maxCpuPerf]	decimal	In decimal notation, to one decimal place (0.1 to 99999.9)	The maximum specifiable CPU performance for the server.	Yes	Specify the maximum CPU performance in GHz that can be specified for the server in Manager View.
[numOfMaxCpu]	integer	1 to 99	The maximum specifiable number of CPUs for the server.	Yes	Specify a value up to the maximum number of CPUs that the user can specify in Manager View.
[maxMemorySize]	decimal	In decimal notation, to one decimal place (0.1 to 99999.9)	The maximum specifiable memory size for the server.	Yes	Specify in GB the maximum memory size that can be specified for the server in Manager View.
numOfMaxDisk	integer	0 to 99	The maximum number of extension disks that can be added to the server.	Yes	Specify a value up to the maximum number of disks that can be specified.
[maxDiskSize]	decimal	In decimal notation, to one decimal place (0.1 to 99999.9)	The maximum specifiable disk size for extension disks.	Yes	Specify a value in GB, up to the maximum disk size that can be specified for extended disks.
numOfMaxNic	integer	1 to 99	The maximum number of network interface cards (NICs) that can be added to the server.	Yes	Specify a value up to the maximum number of NICs that can be specified.
initialPassword	string UTF-8	Up to 85 characters	The initial password for the operating system.	Yes	Specify the password for the following user. [Windows] - If the virtualization software is VMware, the password of 'Administrator' is set to the specified string. - If the virtualization software is Hyper-V, specify the password of the Administrator account of the locale used in the L-Server being created. - If the virtualization software is RHEL-KVM, specify the password of the 'Administrator'. The password specified here is not set to

Tag name	Format	Setting range	Description	Mandatory	Settings
					OS. Please specify the same password as the one that has been set in the cloning image. [Linux] Specify the super user password. The password specified here is not set to OS. Please specify the same password as the one that has been set in the cloning image. [Solaris] Specify the superuser password. The password specified here is not set in the OS. Please specify the same password as the one that has been set in the cloning image.
icon	string UTF-8	Select an option	The icon of the server included in the cloning image.	Yes	Select an icon from the following list that corresponds to serverApplication: - unit_tag_web.png: WEB - unit_tag_ap.png: AP - unit_tag_db.png: DB - unit_tag_webap.png: WEB/AP - unit_tag_webdb.png: WEB/DB - unit_tag_apdb.png: AP/DB - unit_tag_webapdb.png: WEB/AP/DB - unit_tag_blank.png: Other
virtualization	string ASCII	Select an option	The virtual or physical cloning image type.	Yes	Select one of the following options: "hvm": Virtual "pv": Physical
[filterPool]	String UTF-8	1 to 85 Bytes	The string for filtering the VM pool choices for the cloning image.	Optional	
[dataDiskFlag]	string ASCII	Select an option	Specify true if a data disk is included in the image.	Yes	Select one of the following: "true": Data disk exists "false": Data disk absent If nothing was specified, the setting will be "false".
softwares	-	-	The software installed on the server.	No	This tag is required.
software	-	1 or more	Specify as many <software> tags as there are software programs installed on the server.	No	
id	string ASCII	1 to 32 Bytes	The software ID of the software.	Yes	Specify the software ID that was displayed in the registration results obtained using the "9.3 cfmg_addsoft (Registering Software Information)" command or in the output results obtained using the "9.11 cfmg_listsoft

Tag name	Format	Setting range	Description	Mandatory	Settings
					(Displaying Software Information List)" command.
order	integer	0 or more	The order in which software programs are displayed.	Yes	Specify the software in order, starting from "0". Make sure that the operating system is listed first.
patches	-	-	Patch information for the software.	No	
[patch]	-	0 or more	Specify as many <patch> tags as there are patches or updates that need to be applied.	No	These tags are required only when patch information exists.
id	string ASCII	1 to 32 Bytes	The patch ID for the patch.	Yes	Specify the update number, etc. The same patch ID cannot be specified multiple times for one software ID.
locale	-	1 or more	Patch information for each locale.	No	
lcid	string ASCII	Fixed value	The locale for patch information.	Yes	The value is fixed as "en"
componentName	string UTF-8	Up to 85 characters	The name of the component to which the patch is applied.	Optional	Specify an empty string if the patch specification does not include the concept of components. If patch information that matches all of the software ID, patch ID, and locale is already registered, it will be updated by information that is registered later.
description	string UTF-8	Up to 85 characters	A description for the patch.	Optional	If patch information that matches all of the software ID, patch ID, and locale is already registered, it will be updated by information that is registered later.
[vdisks]	-	-	Specify the data disk that is included in the image.	No	
vdisk	-	1 or more	Specify for each of the data disks included in the image.	Yes	
no	integer	1-99	Specify the number of the disk to be connected to the L-Server.	Yes	Specify the same value as is output to the <no> tag with the Displaying a cloning image list (9.13 cfmg_listvmimage (Displaying a Cloning Image List)) command.
diskSize	decimal	In decimal notation, to one decimal place	Specify the size of the disk.	Yes	Specify the same value as is output to the <diskSize> tag with the Displaying a cloning image list (9.13 cfmg_listvmimage (Displaying a Cloning Image List)) command.

The meanings of the symbols in the Mandatory column are as follows:

Yes: If a tag was specified, you must specify the value.

Optional: Value can be omitted.

No: A value setting is not required. Tag only specification.

13.20 Segment Information

This section explains the segment information in detail.

13.20.1 Overview of Segment Information

Network resource information is an XML document listing the configuration information for networks.

Create and register a separate segment information file for each segment.

Refer to "13.20.2 File Information Details" for an explanation of items (tags).

Infrastructure administrators must take this model into account when performing creation.

A model segment information file is stored in the following folder:

[Windows Manager]

```
Storage folder: Installation_folder\templates\networks\
```

[Linux Manager]

```
Storage directory: /opt/FJSVcfmg/templates/networks/
```

13.20.2 File Information Details

Segment information files use the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?>
<category version="1.0">
    <ownerOrg>[Owner (tenant)]</ownerOrg>
    <ownerUser>[Owner (user)]</ownerUser>
    <resourceId>[Resource ID]</resourceId>
    <type>[Network type]</type>
    <segmentType>[Segment type information]</segmentType>
</category>
```

The following table shows descriptions of each of these items (tags), as well as their settings:

Modify segment information files if necessary, by referring to the information in this table.

Tag name	Format	Setting range	Description	Mandatory	Settings
category	-	1 or more		No	
ownerOrg	String ASCII	Fixed value	The tenant name to which the network belongs.	Yes	The value is fixed as "cfmgadm".
ownerUser	String ASCII	Fixed value	The user ID of the user registering the network.	Yes	The value is fixed as "cfmgadm".
resourceId	String ASCII	1 to 32 Bytes	The resource ID.	Yes	Specify the resource ID of the ROR network resource that was obtained using the "9.14 cfmg_listvnet (Displaying a Virtual Network List)" command.

Tag name	Format	Setting range	Description	Mandatory	Settings
type	String ASCII	Select an option	The network type.	No	Select one of the following options: "MANAGEMENT": Management segment "BUSINESS": Business segment
segmentType	String ASCII	1 to 32 Bytes	The format identifying the segment.	No	Specify an arbitrary string for identifying the segment (maximum of 32 ASCII characters, excluding <, >, &, ", and `).

The meanings of the symbols in the Mandatory column are as follows:

Yes: If a tag was specified, you must specify the value.

No: A value setting is not required. Tag only specification.

13.21 Template Information

This section explains the template information in detail.

13.21.1 Overview of Template Information

Template information is defined in XML documents that list the configuration information for L-Platform templates.

Create and register one template information file for each L-Platform template.

Infrastructure administrators must take this model into account when performing creation.

A model template information file is stored in the following folder:

[Windows Manager]

```
Storage folder: Installation_folder\templates\templates\
The following models are stored:
    sample1.xml(Single server configuration)
    sample2.xml(Two-layer configuration)
    sample3.xml(Three-layer configuration)
```

[Linux Manager]

```
Storage directory: /opt/FJSVcfmg/templates/templates/
The following models are stored:
    sample1.xml(Single server configuration)
    sample2.xml(Two-layer configuration)
    sample3.xml(Three-layer configuration)
```

Refer to "13.21.2 File Information Details" for a description of items (tags).

The cloning image ID of the cloning image registered with Resource Management is entered for the cloning image ID in the template information.

13.21.2 File Information Details

Template information files use the following XML format:

```
<?xml version="1.0" encoding="UTF-8" ?>
<template version="1.1">
    <id>[Template ID]</id>
    <lcid>[Locale ID]</lcid>
    <name>[Template name]</name>
```

```
<baseTemplateId>[Base template ID]</baseTemplateId>
<ownerOrg>[Owner (tenant)]</ownerOrg>
<ownerUser>[Owner (user)]</ownerUser>
<publicCategory>[Public category]</publicCategory>
<designSheetPath>[Path to the design sheet]</designSheetPath>
<releaseDate>[Release date]</releaseDate>
<numOfMaxVnet>[Maximum number of VNETs]</numOfMaxVnet>
<numOfMaxVm>[Maximum number of VMs]</numOfMaxVm>
<productId>[Model number]</productId>
<description>[Description]</description>
<keyword>[Search keyword]</keyword>
<estimate>[Rough cost estimate]</estimate>
<license>[License]</license>
<support>[Support]</support>
<vnets>
    <vnet>
        <id>[Network ID]</id>
        <name>[Name]</name>
        <numOfMaxVm>[Maximum number of VMs]</numOfMaxVm>
        <resourceId>[Network resource ID]</resourceId>
        <category>[Network type]</category>
        <segmentType>[Segment type information]</segmentType>
    </vnet>
    ...
</vnets>
<lnetdevs>
    <lnetdev>
        <name>[LNetDev name]</name>
        <type>[LNetDev type]</type>
        <lnetdevIfs>
            <lnetdevIf>
                <name>[Interface name]</name>
                <networkId>[Network ID]</networkId>
            </lnetdevIf>
            ...
        </lnetdevIfs>
        <ruleset>
            <name>[Rule set name]</name>
            <description>[Rule set description]</description>
            <parameters>
                <parameter>
                    <name>[Parameter name]</name>
                    <label>[Tenant Display Name]</label>
                    <view>[Display flag]</view>
                    <value>[Parameter value]</value>
                    <description>[Parameter description]</description>
                </parameter>
                ...
            </parameters>
        </ruleset>
    </lnetdev>
</lnetdevs>
<servers>
    <server>
        <no>[Server serial number]</no>
        <imageId>[Cloning image ID]</imageId>
        <name>[Server name]</name>
        <serverType>[Server type]</serverType>
        <pool>[Deployment destination pool resource name]</pool>
        <sparePool>[Spare pool resource name]</sparePool>
        <storagePool>[Storage pool resource name]</storagePool>
        <powerPriority>[Startup priority level]</powerPriority>
        <useDataDisk>[Data disk use]</useDataDisk>
```

```
            <nicgroups>
                <management>[Control NIC]</management>
                <nicgroup>
                    <index>[NIC group index]</index>
                    <networkId>[Connection destination network ID]</networkId>
                </nicgroup>
                ...
            </nicgroups>
            <vnics>
                <management>[Control NIC]</management>
                <vnic>
                    <no>[NIC serial number]</no>
                    <networkId>[Connection destination network ID]</networkId>
                    <group>[NIC group index]</group>
                </vnic>
                ...
            </vnics>
            <vdisks>
                <vdisk>
                    <no>[Disk serial number]</no>
                    <diskSize>[Disk capacity]</diskSize>
                    <resourceId>[Resource ID]</resourceId>
                    <resourceName>[Disk recource name]</resourceName>
                    <storagePool>[Storage pool resource name]</storagePool>
                    <contained>[Disk contained in image]</contained>
                </vdisk>
                ...
            </vdisks>
        </server>
        ...
    </servers>
</template>
```

The following table shows descriptions of each of these items (tags), as well as their settings:

Modify template information files if necessary, by referring to the information in this table.

Tag names in square brackets [ ] can be omitted.

Tag name	Format	Setting range	Description	Mandatory	Settings
[id]	string ASCII	0 to 32 Bytes	The ID assigned to the template.	Optional	If this template ID is omitted, one is automatically assigned.
[lcid]	string ASCII	Fixed value	The locale for template information.	Yes	The value is fixed as "en"
[name]	string UTF-8	Up to 85 characters	The template name. The template name specified here is used for the default system name for the L-Platform system. For the system name, the characters that can be used and the length of the name vary depending on the method for setting resource names. It is recommended that template names be specified within the following range, which is effective for any method for setting resource names: - Names containing no more than	Optional	

Tag name	Format	Setting range	Description	Mand atory	Settings
			23 alphanumeric characters, underscores ("_") and hyphens ("-") Refer to "19.5 Setting the Method for Setting Resource Names" in the "Setup Guide CE" for information on the method for setting resource names.		
baseTemplatId	-	-	The name of the base template.	No	
ownerOrg	string ASCII	Fixed value	The tenant name to which the template belongs.	Yes	The value is fixed as "cfmgadm".
ownerUser	string ASCII	Fixed value	The user ID of the user registering the template.	Yes	The value is fixed as "cfmgadm".
publicCategory	string ASCII	Fixed value	The category of the template.	Yes	The value is fixed as"PUBLIC". The template is available to all users.
designSheetPath	-	-	The storage folder for the design sheet.	No	
releaseDate	string ASCII	0 to 10 Bytes	The date when the template is made available.	Opti onal	The format is "yyyy/mm/dd".
numOfMaxVnet	integer	1 to 99	The maximum number of segments that can be used by the system in the template.	Yes	
numOfMaxVm	integer	0 to 30	The maximum number of servers that can be used by the template's system.	Yes	
productId	-	-	The product ID of the template that will be used for billing purposes.	No	
description	string UTF-8	Up to 85 characters	A description of the template, explaining the system that the template produces, the content of the template, and so on.	Opti onal	
keyword	string UTF-8	Up to 85 characters	The search keyword for the template.	Opti onal	The template search function finds templates that use this keyword.
estimate	decimal	Fixed value	The price of the template.	Yes	The value is fixed as "0".
license	string ASCII	Select an option	Specifies whether a license has been assigned to the template.	Yes	Select one of the following options: - 0: No license assigned - 1: License assigned
support	string ASCII	Select an option	Specifies whether support has been assigned to the template.	Yes	Select one of the following options: - 0: No support assigned - 1: Support assigned
vnets	-	-	The details of the system segments.	No	
[vnet]	-	1 or more	As many segment information files as there are segments.	No	Not required if there is no segment information.
id	string ASCII	1 to 20 Bytes	The ID that identifies the segments within the template.	Yes	Specify any ID within the template. Specify the value specified in this

Tag name	Format	Setting range	Description	Mand atory	Settings
					designated value, in the vnic networkID.
name	string ASCII	0 to 20 Bytes	The segment name.	Opti onal	
numOfMaxVm	integer	0 to 30	The maximum number of servers that can be added to the segment and used.	Yes	
[resourceId]	string ASCII	1 to 256 Bytes	The resource ID of the virtual network assigned to the segment.	Yes	Confirm the resource ID using the "9.14 cfmg_listvnet (Displaying a Virtual Network List) " command. If omitted, the selection is automatic. To omit this, also omit the tag.
[category]	String ASCII	1 to 10Bytes	The segment type for filtering the network resources that can be selected.	Opti onal	Select one of the following options: "BUSINESS": Business segment "MANAGEMENT": Management segment If this is omitted, "BUSINESS" will be used. To omit this, also omit the tag.
[segmentType]	String ASCII	1 to 32Bytes	The segment type information for filtering the network resources that can be selected.	Opti onal	If this is omitted, no filtering will be performed. To omit this, also omit the tag.
lnetdevs	-	-	The system LNetDevs.	No	
lnetdev	-	1 or more	Specify as many <lnetdev> tags as there are LNetDevs.	Yes	
name	String ASCII	1 to 32Bytes	The LNetDev name.	Yes	
type	String ASCII	Fixed value	The LNetDev type.	Yes	The value is fixed as "fw": Firewall".
lnetdevIfs	-	-	The LNetDev virtual interface definition.	Yes	
lnetdevIf	-	1 or more	Specify as many <lnetdevlf> tags as there are virtual interfaces.	Yes	
name	String ASCII	1 Byte or more	The name of the network ID parameter corresponding to the LNetDev virtual interface.	Yes	
networkId	String ASCII	1 to 20Bytes	The corresponding VNET segment ID.	Yes	
ruleset	-	-	The rule set.	Yes	
name	String ASCII	1 to 32Bytes	The rule set name.	Yes	
description	String UTF-8	1 to 256Bytes	The rule set description.	Yes	
parameters	-	-	The rule set parameters.	Yes	
parameter	-	1 or more	Specify as many <parameter> tags as there are parameters.	Yes	

Tag name	Format	Setting range	Description	Mandatory	Settings
name	String ASCII	1 Byte or more	The parameter name.	Yes	
label	String ASCII	1 to 32Bytes	The parameter name to be displayed on the GUI.	Yes	
view	String ASCII	Select an option	The parameter display flag.	Yes	Select one of the following options: "true": Display "false": No display
value	String ASCII	1 Byte or more	The parameter value.	Yes	
description	String UTF-8	0 to 256Bytes	The parameter description.	Yes	
servers	-	-	The number of servers in the system.	No	
server	-	1 or more	Server information for the number of servers that exist.	Yes	
no	integer	0 to 29	The server number.	Yes	This item specifies a serial number for the server that is unique within the template.
imageId	String ASCII	1 to 32 Bytes	The image ID of an image to be deployed on the server.	No	It is necessary to register the image information in advance and check the image ID.
[useDataDisk]	string ASCII	Select an option	Specify true if a data disk is included in the image.	Yes	Select one of the following values: "true": Data disk used "false": Data disk not used If nothing was specified, the setting will be "false".
name	string UTF-8	Up to 85 characters	The name of the server.	Yes	This is a name that is used to distinguish servers within the template, and is not the host name.
serverType	string ASCII	1 to 32 Bytes	The name of the L-Server template to be selected as the default template from amongst the L-Server templates that have been set up using Resource Management.	Yes	Specify the same value as was specified in the image information file.
[Pool]	string ASCII	1 Byte or more	The resource name (resource name in Resource Management) of the deployment destination pool of the server. Specify the resource name of the VM pool for virtual, and of the server pool for physical. Specify resource names starting with a forward slash "/". (Example) /vmPool_2	Optional	If this is omitted, the first pool registered with Resource Management will be selected. This can also be modified during deployment.
[sparePool]	String ASCII	1 Byte or more	The resource name (resource name in Resource Management)	No	

Tag name	Format	Setting range	Description	Mand atory	Settings
			of the spare server pool for when a physical server fails.		
[storagePool]	string ASCII	1 Byte or more	The resource name (resource name in Resource Management) of the storage pool at the server deployment destination. Specify resource names starting with a forward slash "/". (Example) /StoragePool_2	Opti onal	If omitted, the first storage pool registered with Resource Management will be selected. This can also be modified during deployment.
[powerPriority]	integer	1 to 256	This setting indicates the priority level when performing batch power supply operations within either the L-Platform or within the tenant.	Opti onal	The smaller the value, the higher the priority level. When omitted, the value is set to 128.
nicgroups	-	-	The redundant network interface card (NIC) groups.	Yes	
management	integer	1 or more	The index of the NIC group to be specified in the control NIC.	Yes	This is mandatory if "management" under "vnics" has been omitted. "management" cannot be set in both "nicgroup" and "vnics".
nicgroup	-	-	Specify as many <nicgroup> tags as there are redundant network interface card (NIC) groups.	Yes	A nicgroup without an NIC cannot be defined.
index	integer	1 to 99	A number for the NIC group that is unique within the server.	Yes	
networkId	String ASCII	1 to 20Bytes	The network ID of the segment to which the NIC group is to connect.	Yes	
vnics	-	-	The network interface card (NIC).	No	
management	integer	1 or more	The NIC number specified in the control NIC.	Yes	Specify the value specified in <no> under <vnic>. When <nicgroups> is specified, this item is mandatory in the case of omitting <management> under <nicgroups>. One of the NIC/NIC Groups defined in either <nicgroup> or <vnic> must be specified. It is not possible to specify a NIC whose <group> is specified. It is not possible to assign management settings to both <nicgroup> and <vnics>.
[vnic]	-	1 or more	As many <vnic> tags as there are NICs.	No	

Tag name	Format	Setting range	Description	Mand atory	Settings
no	integer	1 to 99	The NIC number.	Yes	This item specifies a serial number for the NIC that is unique within the server.
networkId	string ASCII	1 to 20 Bytes	The segment ID for the segment that the NIC connects to.	Yes	Specify the value that was specified in the vnet id.
[group]	String ASCII	1 to 99	If grouping is performed for this NIC, the index number of the NIC group (value of "index" in "nicgroup").	Opti onal	If this is omitted, no grouping will be performed.
vdisks	-	-	The extension disk for the server.	No	
[vdisk]	-	0 or more	As many <vdisk> tags as there are disks.	No	These tags are required only when extension disks exist. When the virtualization software is RHEL-KVM or Solaris Container, only existing disks can be specified. [Windows] - If the virtualization software is Hyper-V, specify up to three.
[no]	integer	1 or more	A serial number for the disk that is unique within the server.	Yes	If it is a data disk included in the image, specify the same value as is output to the <no> tag with the Displaying a cloning image list (9.13 cfmg_listvmimage (Displaying a Cloning Image List)) command.
[diskSize]	decimal	In decimal notation, to one decimal place	The size of the disk.	Yes	Specify this value in GB. If it is a data disk included in the image, specify the same value as is output to the <diskSize> tag with the Displaying a cloning image list (9.13 cfmg_listvmimage (Displaying a Cloning Image List)) command.
[resourceId]	String ASCII	1 to 256Bytes	The resource ID of an existing disk if an existing disk is to be connected.	Yes	Make sure to specify it when the virtualization software is RHEL-KVM or Solaris Container.
[resouceName]	String ASCII	1 to 32Bytes	The disk resource name of an existing disk if an existing disk is to be connected.	Yes	Make sure to specify it when the virtualization software is RHEL-KVM or Solaris Container.
[storagePool]	string ASCII	1 Byte or more	The resource name (resource name in Resource Management) of the storage pool at the extension disk deployment destination. Specify resource names starting with a forward slash "/". (Example) /StoragePool_2	Opti onal	If omitted, the first storage pool registered with Resource Management will be selected. This can also be modified during deployment.
[contained]	string ASCII	Select an option	Specify true if the data disk is included in the image.	Yes	Select one of the following values: "true": Disk contained in image "false": New disk

Tag name	Format	Setting range	Description	Mand atory	Settings
			- 382 -		If nothing was specified, the setting will be "false".

The meanings of the symbols in the Mandatory column are as follows:

Yes: If a tag was specified, you must specify the value.

Optional: Value can be omitted.

No: A value setting is not required. Tag only specification.

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	"16.1 Creation Using an L-Server Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" create
Deleting an L-Server	"17.4 Deleting an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" delete
Modifying basic information	"17.2.2 Modifying the Basic Information" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" modify
Modifying specifications	"17.2.1 Modifying Specifications" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" modify
Viewing lists	"A.1 ROR Console" 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.	"3.6 rcxadm lserver" list
Viewing detailed information	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the orchestration tree.	"3.6 rcxadm lserver" show
Attaching or detaching disks	"17.2.3 Attaching and Detaching Disks" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" attach "3.6 rcxadm lserver" detach
Starting an L-Server	"17.1.1 Starting an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" start
Stopping an L-Server	"17.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" stop
Restarting an L-Server	"17.1.3 Restarting an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" restart
Migration of L-Servers between servers	"17.7 Migration of VM Hosts between Servers" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.6 rcxadm lserver" migrate
Snapshot collection (Virtual servers only)	"17.6.1 Snapshot" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" snapshot

Function	Operations	
	GUI	CLI
Snapshot restoration (Virtual servers only)	"17.6.1 Snapshot" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" restore
Snapshot deletion (Virtual servers only)	"17.6.1 Snapshot" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" delete
System image backup (Physical servers)	"17.6.2 Backup and Restore" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" backup
System image restoration (Physical servers)	"17.6.2 Backup and Restore" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" restore
Changing physical server usage	"17.9 Changing Physical Server Usage" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" **When only the configuration definition is created** - Settings "16.1 Creation Using an L-Server Template" or "16.2.1 [General] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" - Operations "17.1.1 Starting an L-Server" and "17.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" **When resources are already allocated** - Settings - First L-Server "16.1 Creation Using an L-Server Template" or "16.2.1 [General] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" - Modifications "16.1 Creation Using an L-Server Template" or "16.2.1 [General] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" "17.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" - Operations "17.1.1 Starting an L-Server" and "17.1.2 Stopping an L-Server" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	**When only the configuration definition is created** - Settings "3.6 rcxadm lserver" create - Operations "3.6 rcxadm lserver" start "3.6 rcxadm lserver" stop **When resources are already allocated** - Settings - First L-Server "3.6 rcxadm lserver" create - Modifications "3.6 rcxadm lserver" create "3.6 rcxadm lserver" stop - Operations "3.6 rcxadm lserver" start "3.6 rcxadm lserver" stop

Function	Operations	
	GUI	CLI
Server redundancy (HA) (Server switchover for physical servers)	"16.2.2 [Server] Tab" or "16.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"13.2 L-Server Template" and "13.3 L-Servers"
Positioning (Virtual servers only)	"16.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"13.2 L-Server Template" and "13.3 L-Servers"
Exclusion (Virtual servers only)	"16.3.2 [Server] Tab" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"13.3 L-Servers"
Collecting cloning images	"17.5.1 Collecting and Registering Cloning Images" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" create
Deleting cloning images	"17.5.4 Deleting a Cloning Image" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" delete
Viewing cloning images	"17.5.2 Viewing a Cloning Image" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"4.1 rcxadm image" list

Table A.2 Resource Pool

Function	Operations	
	GUI	CLI
Creating resource pools	"Chapter 20 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.10 rcxadm pool" create
Viewing lists	"20.6 Viewing a Resource Pool" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab.	"3.10 rcxadm pool" list
Viewing detailed information	"20.6 Viewing a Resource Pool" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab.	"3.10 rcxadm pool" show
Registering resources	"Chapter 19 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.10 rcxadm pool" register
Releasing resource registration	"Chapter 19 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.10 rcxadm pool" unregister
Modification - Name - Label - Comment - Priority	"Chapter 20 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.10 rcxadm pool" modify

Function	Operations	
	GUI	CLI
Moving resource pools	"Chapter 20 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.10 rcxadm pool" move
Deleting resource pools	"Chapter 20 Resource Pool Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.10 rcxadm pool" delete
Viewing available pools	"20.6 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 "3.10 rcxadm pool" list - Resource lists under resource pools "3.10 rcxadm pool" list -name *name*
Max. number of possible L-Servers View	"20.6 Viewing a Resource Pool" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.10 rcxadm pool" list -name *name* -template *template_name*

Table A.3 Resource Folder

Function	Operations	
	GUI	CLI
Creating resource folders	"21.2 Creating a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.5 rcxadm folder" create
Viewing lists	"21.3 Viewing a Resource Folder" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab.	"3.5 rcxadm folder" list
Viewing detailed information	"21.3 Viewing a Resource Folder" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab.	"3.5 rcxadm folder" show
Modifying - Name - Label - Comment - Priority	"21.4 Modifying the Basic Information" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.5 rcxadm folder" modify
Moving resource folders	"21.6 Moving Resource Folders" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.5 rcxadm folder" move
Deleting resource folders	"21.5 Deleting Resource Folders" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.5 rcxadm folder" delete

Table A.4 Physical Storage Unit Resources

Function	Operations	
	GUI	CLI
Viewing lists	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab in the storage tree.	"3.12 rcxadm storage" list
Viewing detailed information	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the storage tree.	"3.12 rcxadm storage" show

Modifying
  - Label
  - Comment
	-	"3.12 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 "20.6 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE", or the [Resource List] tab of the storage tree.	"3.14 rcxadm vstorage" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "20.6 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE", or the [Resource Details] tab of the storage tree.	"3.14 rcxadm vstorage" show
Moving virtual storage resources to specified resource pools	"Chapter 19 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.14 rcxadm vstorage" move

Modifying
  - Label
  - Comment
	"Chapter 19 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.14 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 "20.6 Viewing a Resource Pool" of the "User's Guide	"3.3 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 "20.6 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE", or the [Resource Details] tab of the storage tree.	"3.3 rcxadm disk" show

Modifying
 	
  - Label
 	
  - Comment
	"Chapter 19 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.3 rcxadm disk" modify

Deleting an L-Server	-	-

-: Not supported

Table A.7 Storage Management Software

Function	Operations	
	GUI	CLI
Registration	-	"5.16 rcxadm storagemgr" register
Viewing lists	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab in the storage tree.	"5.16 rcxadm storagemgr" list
Viewing detailed information	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the storage tree.	"5.16 rcxadm storagemgr" show
Unregistration	-	"5.16 rcxadm storagemgr" unregister

Modifying
 	
  - Label
 	
  - Comment
 	
  - IP address
 	
  - Port number
 	
  - User name
 	
  - Password
	-	"5.16 rcxadm storagemgr" modify

-: Not supported

Table A.8 VM Management Software

Function	Operations	
	GUI	CLI
Registration	"5.2 Registering VM Management Software" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	-
Viewing lists	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource List] tab in the management software tree.	"5.17 rcxadm vmmgr" list
Viewing detailed information	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Resource Details] tab in the management software tree.	"5.17 rcxadm vmmgr" show
Deleting VM management software	"9.6 Deleting VM Management Software" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	-
Modifying - Positioning - IP address - User name - Password	"7.7 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 and registering resources in resource pools	"14.3 Network Resources" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.9 rcxadm network" create
Viewing lists	Operate using the [Resource List] tab explained in "20.6 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.9 rcxadm network" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "20.6 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.9 rcxadm network" show
Moving network resources to specified resource pools	"Chapter 19 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.9 rcxadm network" move
Deleting resource pools	"Chapter 19 Resource Operations" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"3.9 rcxadm network" delete

Table A.10 Address Set Resources

Function	Operations	
	GUI	CLI
Creating and registering resources in resource pools	-	"3.1 rcxadm addrset" create
Viewing lists	Operate using the [Resource List] tab explained in "20.6 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.1 rcxadm addrset" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "20.6 Viewing a Resource Pool" of the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.1 rcxadm addrset" show
Moving address pools to specified resource folders	-	"3.1 rcxadm addrset" move
Deleting resource folders	-	"3.1 rcxadm addrset" delete

-: Not supported

Table A.11 User Accounts

Function	Operations	
	GUI	CLI
Registration	"3.1 Registering User Accounts" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"7.1 rcxadm user" create
Viewing lists	"3.2 Viewing a User Account" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"7.1 rcxadm user" list
Viewing detailed information	"3.2 Viewing a User Account" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"7.1 rcxadm user" show
Modifying - User ID - Label - Comment - User groups - Password - Operations and access scope	"3.3 Modifying a User Group" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"7.1 rcxadm user" modify
Deleting user groups	"3.4 Deleting Resource Folders" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"7.1 rcxadm user" delete

Table A.12 User Groups

Function	Operations	
	GUI	CLI
Creating user groups	- (*1)	"7.2 rcxadm usergroup" create
Viewing lists	- (*1)	"7.2 rcxadm usergroup" list
Viewing detailed information	- (*1)	"7.2 rcxadm usergroup" show
Modifying - User ID - Label - Comment - User groups - Password - Operations and access scope	- (*1)	"7.2 rcxadm usergroup" modify
Deleting user groups	- (*1)	"7.2 rcxadm usergroup" delete

*1: This function is only available for Basic mode.

Table A.13 L-Server Template

Function	Operations	
	GUI	CLI
Import	"15.2.3 Importing a Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"8.1 rcxadm template" import
Edit	-	-
Export	"15.2.1 Exporting a Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"8.1 rcxadm template" export
Deleting L-Server templates	"15.1.5 Deleting a Template" in the "User's Guide for Infrastructure Administrators (Resource Management) CE"	"8.1 rcxadm template" delete
Modifying - Name - Label - Comment	-	"8.1 rcxadm template" modify
Viewing lists	"A.1 ROR Console" in the "User's Guide for Infrastructure Administrators (Resource Management) CE" Operate using the [Template List] tab in the orchestration tree.	"8.1 rcxadm template" list
Viewing detailed information	-	"8.1 rcxadm template" show

-: Not supported

Table A.14 Directory Service Operations for User Authentication

Function	Operations	
	GUI	CLI
Registration	-	"5.4 rcxadm authctl" register
Changing directory service connection information	-	"5.4 rcxadm authctl" modify
Viewing detailed information	-	"5.4 rcxadm authctl" show
Unregistration	-	"5.4 rcxadm authctl" unregister
Migrating the information from a directory service on upgrade	-	"5.4 rcxadm authctl" export

-: Not supported

Table A.15 Server NIC Definitions

Function	Operations	
	GUI	CLI
Viewing lists	-	"5.15 rcxadm nicdefctl" list
Viewing detailed information	-	"5.15 rcxadm nicdefctl" show
Reflecting server NIC definitions	-	"5.15 rcxadm nicdefctl" commit

-: Not supported

Table A.16 Network Devices

Function	Operations	
	GUI	CLI
Creating network devices	-	"3.8 rcxadm netdevice" create
Viewing lists	Operate using the [Resource List] tab explained in "A.5 Resource List" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.8 rcxadm netdevice" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "A.6 Resource Details" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.8 rcxadm netdevice" show
Modifying basic information	-	"3.8 rcxadm netdevice" modify
Deleting resource pools	-	"3.8 rcxadm netdevice" delete
Setting of maintenance mode and auto-configuration availability	-	"3.8 rcxadm netdevice" set
Import	-	"3.7 rcxadm netconfig" import
Export	-	"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 "A. 5 Resource List" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.4 rcxadm firewall" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "A.6 Resource Details" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".	"3.4 rcxadm firewall" show
Viewing ruleset detailed information	Operate using the [Resource Details] tab explained in "A.6 Resource Details" in the "User's Guide for Infrastructure Administrators (Resource Management) CE".	-

-: Not supported

Appendix B Script Execution when Operating L-Platforms or 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

B.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 "B.2 Script Format".

- Executing scripts describing details to execute before and after operations
  For details on advisory notes for script usage, refer to "B.3 Advisory Notes for Script Usage".

B.2 Script Format

Create scripts in the following format.

Storage Location of Scripts

[Windows Manager]
Installation_folder\SVROR\Manager\etc\user_script

[Linux Manager]
/etc/opt/FJSVrcvmr/user_scripts

Script Name

Execution_order_resource_name_execution_timing-arbitrary_line.extension

Script Format

Specify as follows:

Table B.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*

Items	Content of Description
	For details on operation names, refer to "Names of Resources and Operations which are the Targets of Script Startup before and after Operations".
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 Manager] A format which can be directly executed from the command line. [Linux Manager] 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_stop.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 B.2 Names of Resources and Operations which are the Targets of Script Startup before and after Operations

Resource Name	Operation Name		Remarks
lserver (common to physical L-Servers and virtual L-Servers)	Creating an L-Server	create	When executing rcxadm lserver create, or creating an L-Server using the [Resource] tab.
	Deleting an L-Server	delete	When executing rcxadm lserver create, or creating an L-Server using the [Resource] tab.
	Starting an L-Server	start	The operation is not executed during batch power on operations.
	Stopping an L-Server	stop	The operation is not executed during batch power off operations.

Exit Status

This command returns the following values:

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 Manager]
Installation_folder\Manager\var\script_log

[Linux Manager]
/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 B.3 Meanings and Values of Variables".

Storage Location of Temporary Files

[Windows Manager]
Installation_folder\Manager\var\tmp\rcxtempfile

[Linux Manager]
/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 Manager]
CR+LF

[Linux Manager]
LF

The meanings and values of variables are as follows:

Table B.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 which the user executed operations belongs to	Character string enclosed by double quotes (") - When the operation target is not a task: "" - When the user does not belong to a group: ""

B.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 C Registered Software IDs

Following the software information come with this product.

Please use as needed.

location

Location listed below.

[Windows Manager]

```
Installation_folder\RCXCFMG\templates\softwares\
```

[Linux Manager]

```
/opt/FJSVcfmg/templates/softwares/
```

Registered Software IDs

Registered Software IDs of this product listed below.

Registered Software IDs	Software Name	Version
SW00000001	Windows Server 2008 Standard (32bit)	6.0
SW00000002	Windows Server 2008 Standard (64bit)	6.0
SW00000003	Windows Server 2008 Enterprise (32bit)	6.0
SW00000004	Windows Server 2008 Enterprise (64bit)	6.0
SW00000005	Windows Server 2008 R2 Foundation	6.1
SW00000006	Windows Server 2008 R2 Standard	6.1
SW00000007	Windows Server 2008 R2 Enterprise	6.1
SW00000008	Windows Server 2008 R2 Datacenter	6.1
SW00000009	Red Hat Enterprise Linux 5 (for x86)	5
SW00000010	Red Hat Enterprise Linux 5 (for Intel64)	5
SW00000011	Red Hat Enterprise Linux 6 (for x86)	6
SW00000012	Red Hat Enterprise Linux 6 (for Intel64)	6
SW00000013	SUSE Linux Enterprise Server 11 (x86)	11
SW00000014	SUSE Linux Enterprise Server 11 (AMD64)	11
SW00000015	SUSE Linux Enterprise Server 11 (Intel64)	11
SW00000016	Oracle Solaris 10	5.10

The following OS, ID not registered. It offers format for registration. Please use <license> tag to fill the Windows OS Product Key, software information to register.

Software Name	Version	Software information file Name
Windows Server 2003 R2, Standard	5.2	WS2003R2_SE.xml
Windows Server 2003 R2, Enterprise	5.2	WS2003R2_EE.xml
Windows Server 2003 R2, Standard x64 Edition	5.2	WS2003R2_SE_x64.xml
Windows Server 2003 R2, Enterprise x64 Edition	5.2	WS2003R2_EE_x64.xml

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 ESXi 5.0 to servers using the PXE boot mechanism.

Automatic Storage Layering

A function that optimizes performance 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.

Basic Mode

A function that can be used by configuring a Cloud Edition license after installing ROR VE.

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.

global zone

The actual OS that is used for a Solaris container.

A Solaris environment that has been installed on a physical server.

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.

non-global zone

A virtual machine environment that has been prepared in a global zone. Its OS kernel is shared with the global zone. Non-global zones are completely separate from each other.

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 resource pool

The Solaris Containers resource pool used in the global zone and the non-global zone.

Solaris Containers

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 administrator

The administrator who manages the entire system. They perform pre-configuration and installation of Resource Orchestrator.

Administrator privileges for the operating system are required. Normally the roles of the infrastructure administrator and system administrator are performed concurrently.

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.

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