FUJITSU Software
ServerView Resource Orchestrator Virtual Edition V3.2.0

Reference Guide (Command)

Windows/Linux

Preface

Purpose of This Document

This manual explains the commands available in FUJITSU Software ServerView Resource Orchestrator Virtual Edition (hereinafter Resource Orchestrator).

Intended 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 VE" 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.

Structure of This Document

This manual is composed as follows:

Part 1 Command Reference

Explains each type of command.

Chapter 1 Overview

Provides an overview of the commands provided in Resource Orchestrator.

Chapter 2 Login

Explains the command used to log in to Resource Orchestrator.

Chapter 3 Resource Operations

Explains the commands used to manage resources in Resource Orchestrator.

Chapter 4 Image Operations

Explains the command used to perform image operations in Resource Orchestrator.

Chapter 5 Control and Environment Setup

Explains the commands used to control Resource Orchestrator managers and agents, and to configure environment settings.

Chapter 6 Backup and Restoration Operations for Configuration Definition Information

Explains the commands used to perform backup and restoration in Resource Orchestrator.

Chapter 7 Maintenance Commands

Explains the maintenance commands available in Resource Orchestrator.

Part 2 File Reference

Explains the input files for each type of command.

Chapter 8 XML Files

Explains XML files.

Appendix A GUI/CLI

Explains the GUI/CLI.

Web Site URLs

URLs provided as reference sources within the main text are correct as of December 2016.

Document Conventions

The notation in this manual conforms to the following conventions.

- When there is different information for the different versions of Resource Orchestrator, it is indicated as follows:

[All Editions]	Sections relevant for all editions
[Cloud Edition]	Sections related to Cloud Edition
[Virtual Edition]	Sections related to Virtual Edition

- 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
[Linux]	Sections related to Linux
[Red Hat Enterprise Linux]	Sections related to Red Hat Enterprise Linux
[Solaris]	Sections related to Solaris
[VMware]	Sections related to VMware
[Horizon View]	Sections related to VMware Horizon View
[Hyper-V]	Sections related to Hyper-V
[Xen]	Sections related to RHEL5-Xen
[KVM]	Sections related to RHEL-KVM
[Solaris Zones]	Sections related to Solaris Zones (Solaris 10) and Solaris Zones (Solaris 11)
[Solaris Zones (Solaris 10)]	Sections related to Solaris Zones with Solaris 10 VM hosts
[Solaris Zones (Solaris 11)]	Sections related to Solaris Zones with Solaris 11 VM hosts
[OVM for x86]	Sections related to Oracle VM Server for x86 2.2 and Oracle VM Server for x86 3.x
[OVM for x86 2.2]	Sections related to Oracle VM Server for x86 2.2
[OVM for x86 3.x]	Sections related to Oracle VM Server for x86 3.2 and Oracle VM Server for x86 3.3
[OVM for SPARC]	Sections related to Oracle VM Server for SPARC
[Citrix Xen]	Sections related to Citrix XenServer
[Physical Servers]	Sections related to physical servers

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

- Oracle Solaris may also be indicated as Solaris, Solaris Operating System, or Solaris OS.

- Oracle Solaris Zones may also be indicated as Solaris Containers or Solaris Container.

- Oracle VM Server for x86 may also be indicated as Oracle VM.

- In Resource Orchestrator, the following servers are referred to as SPARC Enterprise.

  - SPARC Enterprise M3000/M4000/M5000/M8000/M9000

  - SPARC Enterprise T5120/T5140/T5220/T5240/T5440

- In Resource Orchestrator, the following servers are referred to as SPARC M10.

  - SPARC M10-1/M10-4/M10-4S

- Fujitsu M10 is the product name used for SPARC M10 when they are sold outside Japan.

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

- GUI items are shown enclosed by 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 "#".

- When using Resource Orchestrator on Windows 8 and Windows Server 2012, please note the following.
  When OS operations are explained in this manual, the examples assume OSs up to Windows 7 and Windows Server 2008. When using Resource Orchestrator on Windows 8 or Windows Server 2012, take explanations regarding the [Start] menu as indicating the [Apps] screen.
  The [Apps] screen can be displayed by right-clicking on the [Start] screen and then right-clicking [All apps].

- When using Resource Orchestrator on Windows 8.1 and Windows Server 2012 R2, please note the following.
  When OS operations are explained in this manual, the examples assume OSs up to Windows 7 and Windows Server 2008. When using Resource Orchestrator on Windows 8.1 or Windows Server 2012 R2, take explanations regarding the [Start] menu as indicating the [Apps] screen.
  The [Apps] screen can be displayed by swiping the [Start] screen from bottom to top, or clicking the downward facing arrow on the lower-left of the [Start] screen.

- When using Resource Orchestrator on Windows Server 2003 or Windows Server 2003 x64 Edition, take explanations regarding [Programs and Features] on the Control Panel as indicating [Add or Remove Programs].

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.

Regarding Installation Folder Paths

The installation folder path may be given as C:\Fujitsu\ROR in this manual.

Replace it as shown below.

[Virtual Edition]

- When using Windows 64-bit (x64)

  C:\Program Files (x86)\Resource Orchestrator

- When using Windows 32-bit (x86)

  C:\Program Files\Resource Orchestrator

[Cloud Edition]

C:\Program Files (x86)\Resource Orchestrator

Command Examples

The paths used in command examples may be abbreviated. When using commands, execute them using the paths in the "Name" column in the "Reference Guide (Command) VE" and the "Reference Guide (Command/XML) CE".

Abbreviations

The following abbreviations are used in this manual:

Abbreviation	Products
Windows	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 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) 2012 Standard Microsoft(R) Windows Server(R) 2012 Datacenter Microsoft(R) Windows Server(R) 2012 R2 Essentials Microsoft(R) Windows Server(R) 2012 R2 Standard Microsoft(R) Windows Server(R) 2012 R2 Datacenter Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate Windows(R) 7 Professional Windows(R) 7 Ultimate Windows(R) 8 Pro Windows(R) 8 Enterprise Windows(R) 8.1 Pro Windows(R) 8.1 Enterprise
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 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 2012	Microsoft(R) Windows Server(R) 2012 Standard Microsoft(R) Windows Server(R) 2012 Datacenter Microsoft(R) Windows Server(R) 2012 R2 Essentials Microsoft(R) Windows Server(R) 2012 R2 Standard Microsoft(R) Windows Server(R) 2012 R2 Datacenter
Windows PE	Microsoft(R) Windows(R) Preinstallation Environment
Windows Vista	Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate
Windows 7	Windows(R) 7 Professional Windows(R) 7 Ultimate

Abbreviation	Products
Windows 8	Windows(R) 8 Pro Windows(R) 8 Enterprise Windows(R) 8.1 Pro Windows(R) 8.1 Enterprise
Windows 10	Windows(R) 10 Pro Windows(R) 10 Enterprise
Linux	Red Hat(R) Enterprise Linux(R) AS (v.4 for x86) Red Hat(R) Enterprise Linux(R) ES (v.4 for x86) Red Hat(R) Enterprise Linux(R) AS (v.4 for EM64T) Red Hat(R) Enterprise Linux(R) ES (v.4 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.5 for x86) Red Hat(R) Enterprise Linux(R) ES (4.5 for x86) Red Hat(R) Enterprise Linux(R) AS (4.5 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.5 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.6 for x86) Red Hat(R) Enterprise Linux(R) ES (4.6 for x86) Red Hat(R) Enterprise Linux(R) AS (4.6 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.6 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.7 for x86) Red Hat(R) Enterprise Linux(R) ES (4.7 for x86) Red Hat(R) Enterprise Linux(R) AS (4.7 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.7 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.8 for x86) Red Hat(R) Enterprise Linux(R) ES (4.8 for x86) Red Hat(R) Enterprise Linux(R) AS (4.8 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.8 for EM64T) 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) 5.8 (for x86) Red Hat(R) Enterprise Linux(R) 5.8 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.9 (for x86) Red Hat(R) Enterprise Linux(R) 5.9 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.10 (for x86) Red Hat(R) Enterprise Linux(R) 5.10 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.11 (for x86) Red Hat(R) Enterprise Linux(R) 5.11 (for Intel64) Red Hat(R) Enterprise Linux(R) 6 (for x86) Red Hat(R) Enterprise Linux(R) 6 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.1 (for x86) Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.2 (for x86)

Abbreviation	Products
	Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.3 (for x86) Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.4 (for x86) Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.5 (for x86) Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.6 (for x86) Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.7 (for x86) Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.8 (for x86) Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64) Red Hat(R) Enterprise Linux(R) 7.0 (for Intel64) SUSE(R) Linux Enterprise Server 10 Service Pack 2 for x86 SUSE(R) Linux Enterprise Server 10 Service Pack 2 for EM64T SUSE(R) Linux Enterprise Server 10 Service Pack 3 for x86 SUSE(R) Linux Enterprise Server 10 Service Pack 3 for EM64T SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T SUSE(R) Linux Enterprise Server 11 Service Pack 1 for x86 SUSE(R) Linux Enterprise Server 11 Service Pack 1 for EM64T Oracle Enterprise Linux Release 6.7 for x86 (32bit) Oracle Enterprise Linux Release 6.7 for 86_64 (64bit) Oracle Enterprise Linux Release 7.2 for x86 (32bit) Oracle Enterprise Linux Release 7.2 for x86_64 (64bit)
Red Hat Enterprise Linux	Red Hat(R) Enterprise Linux(R) AS (v.4 for x86) Red Hat(R) Enterprise Linux(R) ES (v.4 for x86) Red Hat(R) Enterprise Linux(R) AS (v.4 for EM64T) Red Hat(R) Enterprise Linux(R) ES (v.4 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.5 for x86) Red Hat(R) Enterprise Linux(R) ES (4.5 for x86) Red Hat(R) Enterprise Linux(R) AS (4.5 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.5 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.6 for x86) Red Hat(R) Enterprise Linux(R) ES (4.6 for x86) Red Hat(R) Enterprise Linux(R) AS (4.6 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.6 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.7 for x86) Red Hat(R) Enterprise Linux(R) ES (4.7 for x86) Red Hat(R) Enterprise Linux(R) AS (4.7 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.7 for EM64T) Red Hat(R) Enterprise Linux(R) AS (4.8 for x86) Red Hat(R) Enterprise Linux(R) ES (4.8 for x86) Red Hat(R) Enterprise Linux(R) AS (4.8 for EM64T) Red Hat(R) Enterprise Linux(R) ES (4.8 for EM64T) 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)

Abbreviation	Products
	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) 5.8 (for x86) Red Hat(R) Enterprise Linux(R) 5.8 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.9 (for x86) Red Hat(R) Enterprise Linux(R) 5.9 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.10 (for x86) Red Hat(R) Enterprise Linux(R) 5.10 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.11 (for x86) Red Hat(R) Enterprise Linux(R) 5.11 (for Intel64) Red Hat(R) Enterprise Linux(R) 6 (for x86) Red Hat(R) Enterprise Linux(R) 6 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.1 (for x86) Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.3 (for x86) Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.4 (for x86) Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.5 (for x86) Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.6 (for x86) Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.7 (for x86) Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.8 (for x86) Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64) Red Hat(R) Enterprise Linux(R) 7.0 (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(R) Enterprise Linux(R) 5.8 (for x86) Red Hat(R) Enterprise Linux(R) 5.8 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.9 (for x86) Red Hat(R) Enterprise Linux(R) 5.9 (for Intel64) Red Hat(R) Enterprise Linux(R) 5.10 (for x86) Red Hat(R) Enterprise Linux(R) 5.10 (for Intel64)

Abbreviation	Products
	Red Hat(R) Enterprise Linux(R) 5.11 (for x86) Red Hat(R) Enterprise Linux(R) 5.11 (for Intel64)
Red Hat Enterprise Linux 6	Red Hat(R) Enterprise Linux(R) 6 (for x86) Red Hat(R) Enterprise Linux(R) 6 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.1 (for x86) Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.2 (for x86) Red Hat(R) Enterprise Linux(R) 6.2 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.3 (for x86) Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.4 (for x86) Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.5 (for x86) Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.6 (for x86) Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.7 (for x86) Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64) Red Hat(R) Enterprise Linux(R) 6.8 (for x86) Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64)
Red Hat Enterprise Linux 7	Red Hat(R) Enterprise Linux(R) 7.0 (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) 6.1 (for x86) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.1 (for Intel64) Virtual Machine Function 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 Red Hat(R) Enterprise Linux(R) 6.3 (for x86) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.3 (for Intel64) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.4 (for x86) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.4 (for Intel64) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.5 (for x86) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.5 (for Intel64) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.6 (for x86) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.6 (for Intel64) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.7 (for x86) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.7 (for Intel64) Virtual Machine Function Red Hat(R) Enterprise Linux(R) 6.8 (for x86) Virtual Machine Function

Abbreviation	Products
	Red Hat(R) Enterprise Linux(R) 6.8 (for Intel64) Virtual Machine Function
Xen	Citrix XenServer(R) 5.5 Citrix Essentials(TM) for XenServer 5.5, Enterprise Edition Citrix XenServer(R) 6.0 Citrix Essentials(TM) for XenServer 6.0, Enterprise Edition Red Hat(R) Enterprise Linux(R) 5.3 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.3 (for Intel64) Linux Virtual Machine Function 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 Red Hat(R) Enterprise Linux(R) 5.5 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.5 (for Intel64) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.6 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.6 (for Intel64) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.7 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.7 (for Intel64) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.8 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.8 (for Intel64) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.9 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.9 (for Intel64) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.10 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.10 (for Intel64) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.11 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.11 (for Intel64) Linux Virtual Machine Function
XenServer 6	Citrix XenServer(R) 6.0 Citrix Essentials(TM) for XenServer 6.0, Enterprise Edition
DOS	Microsoft(R) MS-DOS(R) operating system, DR DOS(R)
SUSE Linux Enterprise Server	SUSE(R) Linux Enterprise Server 10 Service Pack 2 for x86 SUSE(R) Linux Enterprise Server 10 Service Pack 2 for EM64T SUSE(R) Linux Enterprise Server 10 Service Pack 3 for x86 SUSE(R) Linux Enterprise Server 10 Service Pack 3 for EM64T SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T SUSE(R) Linux Enterprise Server 11 Service Pack 1 for x86 SUSE(R) Linux Enterprise Server 11 Service Pack 1 for EM64T

Abbreviation		Products
Oracle Enterprise Linux		Oracle Enterprise Linux Release 6.7 for x86 (32bit) Oracle Enterprise Linux Release 6.7 for 86_64 (64bit) Oracle Enterprise Linux Release 7.2 for x86 (32bit) Oracle Enterprise Linux Release 7.2 for x86_64 (64bit)
Solaris		Oracle Solaris 10 05/09 (Update7) Oracle Solaris 11 11/11 Oracle Solaris 11.1 Oracle Solaris 11.2
OVM for x86 2.2		Oracle(R) VM Server for x86 2.2
OVM for x86 3.x	OVM for x86 3.2	Oracle VM Server for x86 v3.2.x
	OVM for x86 3.3	Oracle VM Server for x86 v3.3.x
OVM for SPARC		Oracle(R) VM Server for SPARC
Oracle VM Manager		Oracle(R) VM Manager
Citrix XenServer		Citrix XenServer(R) 6.0 Citrix XenServer(R) 6.0.2 Citrix XenServer(R) 6.1.0 Citrix XenServer(R) 6.2.0
ESC		ETERNUS SF Storage Cruiser
GLS		PRIMECLUSTER GLS
Navisphere		EMC Navisphere Manager
Solutions Enabler		EMC Solutions Enabler
MSFC		Microsoft Failover Cluster
Solaris		Oracle Solaris 10 05/09 (Update7) Oracle Solaris 11 11/11 Oracle Solaris 11.1 Oracle Solaris 11.2
SCVMM		System Center Virtual Machine Manager 2008 R2 System Center 2012 Virtual Machine Manager System Center 2012 R2 Virtual Machine Manager
VMware		VMware vSphere(R) 4 VMware vSphere(R) 4.1 VMware vSphere(R) 5 VMware vSphere(R) 5.1 VMware vSphere(R) 5.5 VMware vSphere(R) 6
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 ESXi 5.1		VMware(R) ESXi(TM) 5.1
VMware ESXi 5.5		VMware(R) ESXi(TM) 5.5
VMware ESXi 6.0		VMware(R) ESXi(TM) 6.0
VMware Infrastructure Client		VMware(R) Infrastructure Client
VMware Tools		VMware(R) Tools
VMware vSphere 4.0		VMware vSphere(R) 4.0

Abbreviation	Products
VMware vSphere 4.1	VMware vSphere(R) 4.1
VMware vSphere 5	VMware vSphere(R) 5
VMware vSphere 5.1	VMware vSphere(R) 5.1
VMware vSphere 5.5	VMware vSphere(R) 5.5
VMware vSphere 6.0	VMware vSphere(R) 6.0
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 Storage VMotion	VMware(R) Storage VMotion
VMware vDS	VMware(R) vNetwork Distributed Switch
VMware Horizon View	VMware Horizon View 5.2.*x* VMware Horizon View 5.3.*x* VMware Horizon 6.0 (with View)
VMware Virtual SAN	VMware(R) Virtual SAN(TM)
VIOM	ServerView Virtual-IO Manager
SVOM	ServerView Operations Manager
BladeLogic	BMC BladeLogic Server Automation
Excel	Microsoft(R) Office Excel(R) 2003 Microsoft(R) Office Excel(R) 2007 Microsoft(R) Office Excel(R) 2010 Microsoft(R) Office Excel(R) 2013
Excel 2003	Microsoft(R) Office Excel(R) 2003
Excel 2007	Microsoft(R) Office Excel(R) 2007
Excel 2010	Microsoft(R) Office Excel(R) 2010
Excel 2013	Microsoft(R) Office Excel(R) 2013
Internet Explorer	Windows(R) Internet Explorer(R) 8 Windows(R) Internet Explorer(R) 9 Windows(R) Internet Explorer(R) 10 Internet Explorer(R) 11
Firefox	Firefox(R)
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	FUJITSU Software ServerView Resource Orchestrator
ROR VE	FUJITSU Software ServerView Resource Orchestrator Virtual Edition
ROR CE	FUJITSU Software ServerView Resource Orchestrator Cloud Edition
Resource Coordinator	Systemwalker Resource Coordinator Systemwalker Resource Coordinator Virtual server Edition

Abbreviation	Products
Resource Coordinator VE	ServerView Resource Coordinator VE Systemwalker Resource Coordinator Virtual server Edition
Resource Orchestrator	FUJITSU Software ServerView Resource Orchestrator
SVFAB	ServerView Fabric Manager

Export Administration Regulation Declaration

Exportation/release of this document may require necessary procedures in accordance with the regulations of your resident country and/or US export control laws.

Trademark Information

- BMC, BMC Software, and the BMC Software logo are the exclusive properties of BMC Software, Inc., are registered with the U.S. Patent and Trademark Office, and may be registered or pending registration in other countries.

- Citrix(R), Citrix XenServer(R), Citrix Essentials(TM), and Citrix StorageLink(TM) are trademarks of Citrix Systems, Inc. and/or one of its subsidiaries, and may be registered in the United States Patent and Trademark Office and in other countries.

- Dell is a registered trademark of Dell Computer Corp.

- HP is a registered trademark of Hewlett-Packard Company.

- IBM is a registered trademark or trademark of International Business Machines Corporation in the U.S.

- Linux is a trademark or registered trademark of Linus Torvalds in the United States and other countries.

- Microsoft, Windows, MS-DOS, Windows Server, Windows Vista, Excel, Active Directory, and Internet Explorer are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.

- Firefox is a trademark or registered trademark of the Mozilla Foundation in the United States and other countries.

- Oracle and Java are registered trademarks of Oracle and/or its affiliates in the United States and other countries.

- Oracle is a registered trademark of Oracle Corporation and/or its affiliates.

- Red Hat, RPM and all Red Hat-based trademarks and logos are trademarks or registered trademarks of Red Hat, Inc. in the United States and other countries.

- Spectrum is a trademark or registered trademark of Computer Associates International, Inc. and/or its subsidiaries.

- SUSE is a registered trademark of SUSE LINUX AG, a Novell business.

- VMware, the VMware "boxes" logo and design, Virtual SMP, and VMotion are registered trademarks or trademarks of VMware, Inc. in the United States and/or other jurisdictions.

- ServerView and Systemwalker are registered trademarks of FUJITSU LIMITED.

- All other brand and product names are trademarks or registered trademarks of their respective owners.

Notices

- The contents of this manual shall not be reproduced without express written permission from FUJITSU LIMITED.

- The contents of this manual are subject to change without notice.

Revision History

Month/Year Issued, Edition	Manual Code
November 2011, First Edition	J2X1-7607-01ENZ0(00)

Month/Year Issued, Edition	Manual Code
December 2011, Edition 1.1	J2X1-7607-01ENZ0(01)
January 2012, Edition 1.2	J2X1-7607-01ENZ0(02)
February 2012, Edition 1.3	J2X1-7607-01ENZ0(03)
March 2012, Edition 1.4	J2X1-7607-01ENZ0(04)
April 2012, Edition 1.5	J2X1-7607-01ENZ0(05)
July 2012, Second Edition	J2X1-7607-02ENZ0(00)
October 2012, Third Edition	J2X1-7607-03ENZ0(00)
December 2012, Fourth Edition	J2X1-7607-04ENZ0(00)
January 2013, Fifth Edition	J2X1-7607-05ENZ0(00)
January 2013, Edition 5.1	J2X1-7607-05ENZ0(01)
January 2013, Edition 5.2	J2X1-7607-05ENZ0(02)
June 2013, Edition 5.3	J2X1-7607-05ENZ0(03)
August 2013, Edition 5.4	J2X1-7607-05ENZ0(04)
December 2013, Sixth Edition	J2X1-7607-06ENZ0(00)
February 2014, Edition 6.1	J2X1-7607-06ENZ0(01)
April 2014, Edition 6.2	J2X1-7607-06ENZ0(02)
June 2014, Edition 6.3	J2X1-7607-06ENZ0(03)
April 2015, Seventh Edition	J2X1-7607-07ENZ0(00)
July 2015, Edition 7.1	J2X1-7607-07ENZ0(01)
September 2015, Edition 7.2	J2X1-7607-07ENZ0(02)
December 2015, Edition 7.3	J2X1-7607-07ENZ0(03)
January 2016, Edition 7.4	J2X1-7607-07ENZ0(04)
June 2016, Edition 7.5	J2X1-7607-07ENZ0(05)
September 2016, Edition 7.6	J2X1-7607-07ENZ0(06)
December 2016, Edition 7.7	J2X1-7607-07ENZ0(07)

Copyright

Contents

Part 1　Command Reference

- 1 -

Chapter 1 Overview

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

Five types of commands are available: the login command, the resource operation commands, the image operation command, the control and environment setup commands, and the maintenance commands.

- Login Command

    rcxlogin

- Resource Operation Commands

    rcxadm chassis
    rcxadm netconfig
    rcxadm netdevice
    rcxadm server (rcxserver) (*)

- Image Operation Command

    rcxadm image (rcximage) (*)

- Control and Environment Setup Commands

    deployment_service_uninstall
    rcxadm agtctl
    rcxadm authctl
    rcxadm certctl
    rcxadm dbctl
    rcxadm deployctl
    rcxadm eventctl
    rcxadm imagemgr
    rcxadm lanctl
    rcxadm license
    rcxadm mgrctl
    rcxadm servermgr
    rcxadm storagemgr
    macbindconfig

- Backup and restore the configuration definition information of Resource Orchestrator Commands

    rcxbackup
    rcxkeydefbackup
    rcxkeydefrestore
    rcxrestore
    scwbackup
    scwrestore

- Maintenance Commands

    inst_collectinfo

* Note: rcxserver and rcximage are abbreviated forms of the rcxadm server and rcxadm image commands. They both produce exactly the same results as their counterparts.

User accounts with administrative privileges within the operating system have access to all commands.
When using Windows, the OS administrator is an Administrator account. The rcxadm command can only be used from an Administrator account.
For user accounts that do not have administrative privileges within the operating system, it is necessary to first log into Resource Orchestrator as a privileged user with the login command. This will grant access to the resource operation, control and environment setup (only rcxadm mgrctl snap -all), and image operation command.
For details on privileged users, refer to "Chapter 5 Managing User Accounts" in the "User's Guide VE".

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	
			OS Administrator	Resource Orchestrator Privileged User	Admin Server	Managed Server
deployment_service_uninstall	Uninstallation of the related services		Yes	-	Yes	Yes
rcxadm agtctl	Agent control		Yes	-	No	Yes
rcxadm authctl	User authentication directory service operations		Yes	-	Yes	No
rcxadm certctl	SSL certificate operations		Yes	-	Yes	Yes
rcxadm chassis	Chassis power control		- (*)	Yes	Yes	No
rcxadm dbctl	Management of the database for Resource Orchestrator		Yes	-	Yes	-
rcxadm deployctl	Encryption of license information definition files		Yes	-	No	Yes
rcxadm eventctl	Event control		- (*)	Yes	Yes	No
rcxadm image	Image operations (backup and restore, cloning)		- (*)	Yes	Yes	No
rcxadm imagemgr	Image management settings		Yes	-	Yes	No
rcxadm lanctl	Network parameter configuration		Yes	-	No	Yes
rcxadm license	License control		Yes	Yes	Yes	No
rcxadm mgrctl	Manager control	"snap -all"	- (*)	Yes	Yes	No
		All except "snap -all"	Yes	-		
rcxadm netconfig	Network device batch operations		Yes	-	Yes	No
rcxadm netdevice	Network device operations		Yes	-	Yes	No
rcxadm server	Managed server control		- (*)	Yes	Yes	No
rcxadm servermgr	Server management software operations					
rcxadm storagemgr	ESC registration and deletion		- (*)	Yes	Yes	No
macbindconfig	Bind settings for MAC addresses		Yes	-	No	Yes
rcxbackup	Backup of configuration definition information		Yes	Yes	Yes	No
rcxkeydefbackup	Backup of other definition and management information		Yes	Yes	Yes	No
rcxkeydefrestore	Restoration of other definition and management information		Yes	Yes	Yes	No
rcxlogin	Logs in to Resource Orchestrator		-	-	Yes	No
rcxrestore	Restoration of configuration definition information		Yes	Yes	Yes	No
scwbackup	Backup of image files		Yes	Yes	Yes	No
scwrestore	Restoration of image files		Yes	Yes	Yes	No

Command	Function	Required Privileges		Location	
		OS Administrator	Resource Orchestrator Privileged User	Admin Server	Managed Server
inst_collectinfo	Collecting investigation data during installation	Yes	-	Yes	No

Yes: Can be used

No: Cannot be used

-: Not required

* Note: This command can also be executed by a user with administrative privileges within the operating system. However, if the same user executes this command after logging into Resource Orchestrator, the operating system privileges will be replaced by Resource Orchestrator privileges. To use this command when logged into Resource Orchestrator, administrative privileges for Resource Orchestrator are required.

Information

- Executing privileged commands within a script requires the user to be logged in with administrative privileges within the operating system. Otherwise, the rcxlogin -save command should first be run to grant access to privileged commands from scripts.
  Refer to "2.1 rcxlogin" for details.

- If, in Windows Server 2008 or later, a user account with administrative privileges that does not have the user ID "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

In Systemwalker Resource Coordinator VE V13.2 and VE V13.3, when using commands under the following folder within the created batch file, they must be changed to the specified folders, because the folder configuration for Resource Orchestrator is different.

- *Installation_folder*\Site Manager\opt\FJSVrcxmr\bin

[Linux Manager]

- /opt/FJSVrcvmr/bin

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.

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 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.

- After starting a chassis, it may take some time until it is possible to power on server blades. When powering on server blades after starting a chassis, wait several minutes before doing so.

- 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.

. . . .

3.2 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.

ℹ️ Information
. . . .

- 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 "3.3 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 "8.1.1 Creation".

ℹ️ Information
. . . .

If an existing XML file name is specified for the -file option of the export subcommand, message number 65927 will be output and the export operation will fail.

. . . .

This command can only be executed when expanding the scope of network device support. For the procedure for expanding the scope of network device support, refer to "7.5.1 Enabling the Network Device Management Function" in the "User's Guide VE".

3.3 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 [-with_va]|maintenance} [-nowait]
rcxadm netdevice show -name name
rcxadm netdevice refresh -name name [-recreate] [-nowait]
```

Description

rcxadm netdevice is the command used to operate network devices.

Subcommands

create

Creates a network device.

Information

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

delete

Deletes a network device.

list

Displays a list of network devices.

The following detailed information is displayed:

Table 3.1 Network Device Information

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

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

    Perform switchover of the maintenance mode of the network device.

show

    Displays the detailed information for a network device.

    The following information is displayed:

Table 3.2 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:

Item Name	Description

	- For normal status
	
	  "normal" is displayed.
	
	- For error status
	
	  "error" is displayed.
	
	- For warning status
	
	  "Warning" is displayed.
	
	- For unknown status
	
	  "unknown" is displayed.

StatusCause	If the operational status of the network device is one other than "normal"
	
	One of the following is displayed:
	
	- When there is no response for ping
	
	  "Ping unreachable" is displayed.
	
	- When there is no response for SNMP
	
	  "SNMP unreachable" is displayed.
	
	- When there is no response for NETCONF
	
	  "NETCONF unreachable" is displayed.
	
	- When automatic configuration failed
	
	  "auto configuration failed" is displayed.
	
	- When an error is detected in a switch in the domain of the Ethernet Fabric
	
	  "Domain status error" is displayed.
	
	If the operational status is normal, "-" 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.

FabricType	Fabric type
	
	One of the following is displayed:
	
	- When using Converged Fabric
	
	  "C-Fabric" is displayed.
	
	- When using VCS
	
	  "VCS" is displayed.
	
	This is displayed only when the type of network device is "Fabric".

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

Item Name	Description
	"OFF" is displayed.
FabricId	Fabric ID This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
VCSId	VCS ID This is only displayed when the network device type is "Fabric" and the fabric type is "VCS".
ManagementHost	Management Host The IP address and resource name of the management host (the physical server on which the IPCOM VX or NS Appliance operates) are displayed. They are only displayed for virtual appliances.
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 lines
	    "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".

Port[*num*][Type]	Port type

Item Name	Description

	When the fabric type is "C-Fabric", one of the following is displayed:
	
	- For the port connected to a server
	
	  "EP" is displayed.
	
	- For the port connected to another network device
	
	  "CIR" is displayed.
	
	When the fabric type is "VCS", one of the following is displayed:
	
	- For the port connected to something other than VCS
	
	  "Edge" is displayed.
	
	- For the port connecting VDXs in a VCS
	
	  "ISL" is displayed.
	
	In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
	
	This is displayed only when the type of network device is "Fabric".

Port[*num*][DistributionMode]	Packet distribution mode
	
	One of the following is displayed:
	
	- When performing distribution of S-TAG(TPID=88a8)
	
	  "VLAN(S-TAG)" is displayed.
	
	- When performing distribution of MAC addresses
	
	  "MAC" is displayed.
	
	- When performing distribution of C-TAG(TPID=8100)
	
	  "VLAN(C-TAG)" is displayed.
	
	- When not performing distribution
	
	  "no-distribution" is displayed.
	
	- When performing distribution of VLANs other than S-TAG(TPID=88a8) and C-TAG(TPID=8100)
	
	  "VLAN(other)" is displayed.
	
	In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
	
	This is only displayed for IPCOM VA.

Port[*num*][Stag]	S-TAG ID The ID of the S-TAG used for IPCOM VA port distribution is displayed. In *num*, the index number of a port element is displayed. The number is an integer starting from "0". It is only displayed when the packet distribution mode for IPCOM VA is "VLAN(S-TAG)".
Port[*num*][Ctag]	C-TAG ID The ID of the C-TAG used for the IPCOM VA port distribution is displayed. In *num*, the index number of a port element is displayed. The number is an integer starting from "0".

Item Name	Description
	It is only displayed when the packet distribution mode for IPCOM VA is "VLAN(C-TAG)".
Port[*num*][OtherVlan]	VLAN IDs other than S-TAG and C-TAG VLAN IDs other than the S-TAG and C-TAG used for IPCOM VA port distribution are displayed. In *num*, the index number of a port element is displayed. The number is an integer starting from "0". It is only displayed when the packet distribution mode for IPCOM VA is "VLAN(other)".
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. Some VLANs which have been configured with an AMPP function for VCS fabrics may not be displayed.
Vlan[*num*][TaggedPort]	Name of the port belonging to a Tagged port of VLAN ID In *num*, the index number of a VLAN element is displayed. The number is an integer starting from "0". When there is more than one, they are displayed separated by commas.
Link[*num*][NeighborResourceName]	Name of the resource linked to the port number [*num*] In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
Link[*num*][NeighborPort]	Name of the port of the resource linked to the port number [*num*] In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
Link[*num*][NeighborNicIndex]	Name of the port of the resource linked to the port number [*num*] When the connection destination is a rack mount server and the port for display (NicIndex) is specified, the name of the port of the resource linked to the port number [*num*] is output. In *num*, the index number of a port element is displayed. The number is an integer starting from "0".
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".

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

LoginInfo[*num*][LoginCheck]	Check results of account availability
	
	One of the following is displayed:
	
	  - When the account can be used
	
	    "Successful" is displayed.
	
	  - When the account cannot be used
	
	    "Failed" is displayed.
	
	  - When the account has not been checked
	
	    "Unchecked" is displayed.
	
	In *num*, the index number of an account element is displayed. The number is an integer starting from "0".

SnmpCommunityName	SNMP community name

FaultMonitoringMethod	Method of fault monitoring
	
	One of the following is displayed:
	
	  - When alive monitoring is performed using ping
	
	    "ping" is displayed.
	
	  - When the status is monitored using SNMP
	
	    "SNMP" is displayed.
	
	  - When the status is monitored using NETCONF
	
	    "NETCONF" is displayed.
	
	When there are multiple monitoring methods employed, they are displayed separated by commas.

Item Name	Description
FaultMonitoringInterval(s)	Fault monitoring interval (unit: seconds)
FaultMonitoringRetry	Fault monitoring retry count
FaultMonitoringTimeout(s)	Fault monitoring timeout (unit: seconds)
RestoreHistory[Env][RestoreFileDate]	Time when the network device environment file was backed up If restoration has not been performed or the target file has been already deleted, "-" is displayed.
RestoreHistory[Env][RestoreExecDate]	Date when the network device environment file was backed up If restoration has not been performed, "-" is displayed.
RestoreHistory[Config][GenerationNumber]	Generation number of the network device configuration file If restoration has not been performed or the target file has been already deleted, "-" is displayed.
RestoreHistory[Config][RestoreFileDate]	Time when the restore network device configuration file to restore was backed up If restoration has not been performed, "-" is displayed.
RestoreHistory[Config][RestoreExecDate]	Date when the network device configuration file was backed up If restoration has not been performed, "-" is displayed.
VFAB[*num*][name]	VFAB name This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric". In *num*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
VFAB[*num*][id]	VFAB ID This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric". In *num*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
VFAB[*num*][Stag]	S-TAG of VFAB This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric". In *num*, the index number of a VFAB element is displayed. The number is an integer starting from "0".

VFAB[*num*][mode]	VFAB operation mode
	
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
	
	One of the following is displayed:
	
	- For host mode
	
	  "host" is displayed.
	
	- For network mode
	
	  "network" is displayed.
	
	In *num*, the index number of a VFAB element is displayed. The number is an integer starting from "0".

VFAB[*num1*][Port][*num2*]	Name of the port belonging to VFAB

Item Name	Description
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric". In *num1*, the index number of a VFAB element is displayed. The number is an integer starting from "0". In *num2*, the index number of a port element is displayed. The number is an integer starting from "0".

VFAB[*num1*][Port][*num2*][Link]	Link status of the port belonging to VFAB
	
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
	
	Displays one of the following:
	
	  - For link-up status
	
	    "up" is displayed.
	
	  - For link-down status
	
	    "down" is displayed.
	
	  - For unknown status
	
	    "unknown" is displayed.
	
	In *num1*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
	
	In *num2*, the index number of a port element is displayed. The number is an integer starting from "0".

VFAB[*num1*][Port][*num2*][PhysicalState]	Communication status of the port belonging to VFAB
	
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
	
	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 lines
	
	    "H" is displayed.
	
	  - For unknown status
	
	    A hyphen ("-") is displayed.
	
	In *num1*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
	
	In *num2*, the index number of a port element is displayed. The number is an integer starting from "0".

VFAB[*num1*][Port][*num2*][Type]	Type of the port belonging to VFAB
	
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
	
	  - For the port connected to a server
	
	    "EP" is displayed.
	
	  - For the port connected to another network device

Item Name	Description
	"CIR" is displayed.
	- For the port sending and receiving using the IEEEdot1ad frame "CIR(dot1ad)" or "EP(dot1ad)" is displayed.
	In *num1*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
	In *num2*, the index number of a port element is displayed. The number is an integer starting from "0".
VFAB[*num1*][Vlan][*num2*]	VLAN(C-TAG) ID in VFAB
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
	In *num1*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
	In *num2*, the index number of a VFAB element in VFAB is displayed. The number is an integer starting from "0".
VFAB[*num1*][Vlan][*num2*][UntaggedPort]	Name of the port belonging to an Untagged port of a VLAN ID in VFAB
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
	In *num1*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
	In *num2*, the index number of a VFAB element in VFAB is displayed. The number is an integer starting from "0".
	When there are multiple index numbers, they are displayed separated by commas.
VFAB[*num1*][Vlan][*num2*][TaggedPort]	Name of the port belonging to a Tagged port of a VLAN ID in VFAB
	This is only displayed when the network device type is "Fabric" and the fabric type is "C-Fabric".
	In *num1*, the index number of a VFAB element is displayed. The number is an integer starting from "0".
	In *num2*, the index number of a VFAB element in VFAB is displayed. The number is an integer starting from "0".
	When there are multiple index numbers, they are displayed separated by commas.

refresh

Updates the configuration information of the network device.

Options

-attr {mode={active [-with_va]|maintenance}

For a network device, switch the maintenance mode settings or the .

-attr mode=active

Checks the status of the device. If the device is in the normal state, this option will change the operational status to "normal" and release maintenance mode.
If an error is detected during the status check of the device, failure to release maintenance mode is notified as the command execution

result. In this case, it is necessary to take corrective action according to the message that is output, and perform release of maintenance mode again.

-with_va

Specify this to release the virtual appliances on the management host (IPCOM VX) when releasing the management host from maintenance mode.

-attr mode=maintenance

Places into maintenance mode.

-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 "8.1.1 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.

-recreate

Update the port information and link information of the network device specified in *name*.

- When it is necessary to update the port information specifying this option

- When the number of ports of network devices is increased or decreased

- When fabric IDs, domain IDs, switch IDs, or port types for Ethernet Fabric (Converged Fabric) are modified

- When VCS IDs or RBridge IDs for Ethernet Fabric (VCS) are modified

- When it is necessary to update the link information specifying this option

- When logical linkage between IPCOM VX and IPCOM VA is modified

If communication with the network device of the operation target is not possible, an error will occur.

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
NSappliance1             192.168.5.3      Firewall(virtual)   normal    OFF
SLB1                     192.168.5.4      SLB                 normal    OFF
SLB2                     192.168.5.5      SLB                 normal    OFF
ipcomex1                 192.168.5.10     Firewall,SLB        normal    OFF
ipcomex2                 192.168.5.11     Firewall,SLB        normal    OFF
fabric1                  192.168.5.100    Fabric              normal    OFF
```

- To display the detailed information for a network device (server load balancer):

```
>rcxadm netdevice show -name SLB1 <RETURN>
Name: SLB1
SystemName: SLB1
```

```
IPAddress: 192.168.5.4
ProductName: IPCOMEXIN
ModelName: IPCOM EX2000 IN
VendorName: Fujitsu
Firmware: E20L10
Location: NUMAZU_B1
Status: normal
StatusCause: -
NetdeviceTypes: SLB
Maintenance: OFF
Redundancy: 2
Redundancy[GroupDevice]: SLB1,SLB2
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]: SLB2
Link[0][NeighborPort]: LAN0.0
LoginInfo[0][User]: admin
LoginInfo[0][IPAddress]: 192.168.5.4
LoginInfo[0][Port]: 8080
LoginInfo[0][Protocol]: remote_login
LoginInfo[0][Authority]: administrator
LoginInfo[0][AuthType]: local password
LoginInfo[0][LoginCheck]: Successful
SnmpCommunityName: public
FaultMonitoringMethod: SNMP
FaultMonitoringInterval(s): 300
FaultMonitoringRetry: 3
FaultMonitoringTimeout(s): 10
```

- To display the detailed information for a network device (Ethernet Fabric switch (Converged Fabric)):

```
>rcxadm netdevice show -name fabric1 <RETURN>
Name: fabric1
SystemName: fabric_1
IPAddress: 192.168.5.100
ProductName: Converged Fabric
ModelName: Converged Fabric
VendorName: Fujitsu
Firmware:V01.00
Location: NUMAZU_B1
Status: normal
StatusCause: -
NetdeviceTypes: Fabric
FabricType: C-Fabric
Maintenance: OFF
FabricId: 1
Redundancy:
Redundancy[GroupDevice]:
Port[0]: 3/1/0/2
Port[0][Link]: up
Port[0][PhysicalState]: 10G / F
Port[0][Type]: CIR
Port[1]: 3/1/0/4
Port[1][Link]: up
Port[1][PhysicalState]: 10G / F
Port[1][Type]: CIR
Link[0][NeighborResourceName]: ipcomex2500in-1
Link[0][NeighborPort]: LAN0.1
LoginInfo[0][User]: user1
```

```
LoginInfo[0][IPAddress]: 192.168.5.100
LoginInfo[0][Port]: 22
LoginInfo[0][Protocol]: ssh
LoginInfo[0][Authority]: user
LoginInfo[0][AuthType]: local password
LoginInfo[0][LoginCheck]: Successful
SnmpCommunityName: public
FaultMonitoringMethod: SNMP
FaultMonitoringInterval(s): 300
FaultMonitoringRetry: 3
FaultMonitoringTimeout(s): 10
VFAB[0][name]: defaultVFAB
VFAB[0][id]: default
VFAB[0][Stag]: 2
VFAB[0][mode]: network
VFAB[0][Port][0]: 3/1/0/2
VFAB[0][Port][0][Link]: up
VFAB[0][Port][0][PhysicalState]: 10G/F
VFAB[0][Port][0][Type]: CIR
VFAB[0][Vlan][0]: 10
VFAB[0][Vlan][0][UntaggedPort]: 5/1/0/1
VFAB[0][Vlan][0][TaggedPort]: 3/1/0/1, 5/1/0/2
VFAB[1][name]: VFAB1
VFAB[1][id]: 1
VFAB[1][Stag]: 101
VFAB[1][mode]: host
VFAB[1][Tenant][0]: tenantG
VFAB[1][Tenant][1]: tenantH
VFAB[1][Port][0]: 3/1/0/4
VFAB[1][Port][0][Link]: up
VFAB[1][Port][0][PhysicalState]: 10G/F
VFAB[1][Port][0][Type]: CIR
VFAB[1][Vlan][0]: 40
VFAB[1][Vlan][0][UntaggedPort]: 5/1/0/3
VFAB[1][Vlan][0][TaggedPort]: 3/1/0/3, 5/1/0/4
```

- To display the detailed information for a network device (Management host (IPCOM VX)):

```
>rcxadm netdevice show -name ipcom_vx <RETURN>
Name: ipcom_vx
SystemName: vx2700-1
IPAddress: 192.168.1.74
ProductName: IPCOMVXHV
ModelName: IPCOMVX2700_HV
VendorName: Fujitsu
Firmware: E10L11 NF0001
Location: NUMAZU_B1
Status: normal
StatusCause: -
NetdeviceTypes: ManagementHost
Maintenance: OFF
Redundancy:
Redundancy[GroupDevice]:
Port[0]: LAN0.0
Port[0][Link]: up
Port[0][PhysicalState]: 1G / -
Link[0][NeighborResourceName]: fabric1
Link[0][NeighborPort]: 3/2/0/11
Link[0][NeighborResourceName]: ipcomva1
Link[0][NeighborPort]: LAN0.0
LoginInfo[0][User]: user1
LoginInfo[0][IPAddress]: 192.168.1.74
LoginInfo[0][Port]: 23
```

```
LoginInfo[0][Protocol]: telnet
LoginInfo[0][Authority]: user
LoginInfo[0][AuthType]: local password
LoginInfo[0][LoginCheck]: Successful
SnmpCommunityName: public
FaultMonitoringMethod: SNMP
FaultMonitoringInterval(s): 300
FaultMonitoringRetry: 3
FaultMonitoringTimeout(s): 30
```

📒 Note

This command can only be executed when expanding the scope of network device support. For the procedure for expanding the scope of network device support, refer to "7.5.1 Enabling the Network Device Management Function" in the "User's Guide VE".

3.4 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 [-server_role]|all [-server_role]}] | [-spare] | [-
bootagt] | [-target_disk]} ]
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}
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]
[Citrix Xen]
rcxadm server set -name resource -attr bootagt={dos|winpe}
rcxadm server set -name resource -attr server_role={none|manager}
rcxadm server set -name resource -attr target_disk=disk_number
rcxadm server unset -name resource -target_disk
rcxadm server show -name resource -disk
rcxadm server collect -name resource -disk [-nowait]
rcxadm server backup -name resource -attr os=solaris (when using Fujitsu M10)
```

📘 Information

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

Point

[VMware]

There are following two formats of the command options for setting and releasing the VM maintenance mode of VM hosts:

a. rcxadm server set -name resource -attr vmm_mode=maintenance|active

b. rcxadm server set -name resource -attr vmware.maintenance=maintenance|active

Format b is only provided to support ServerView Resource Coordinator VE V2.1.0.

As this format may not be provided in future versions, it is recommended to use method a. if you are starting to use Resource Orchestrator.

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)

- Collection and display of the disk information of the specified server (physical server)

- Configure and display of the image operation of the target disk of the specified server (physical server)

- Saving of OVM for SPARC configuration information as XML files

- Setting of the server role for VM guests

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 Settings for Server Switchover" in 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".
For details on server role settings of VM guests, refer to "9.10 Changing Server Roles" 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 VE".

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 VE".

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.
Sets the server role of a VM guest.
Configures the image operation target disk.

unset

Releases the configuration of the image operation target disk.

show

Displays the information of a disk on which image operations can be performed.

collect

Collects the information of a disk on which image operations can be performed.
Restarts the target server (physical server, physical OS, VM host, or VM guest) to acquire the disk information.

backup

Saves configuration information of OVM for SPARC as XML files. When a server is powered on and its status is normal, its configuration information can be saved as an XML file.
XML files of OVM configuration information are saved in the following location on the control domain.

Storage Location of Saved Files

[Control Domain]
/etc/opt/FJSVrcvat/config

Definition File Name

ovm_config.xml

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, set, unset, or, show 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 [-server_role]|all [-server_role]}(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

Item Name	Description	Options

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 VE".
		always

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 VE".
		physical
		
		all

SERVER_ROLE	Server role of the VM guest.
	
	One of the following is displayed:
	
	  - none
	
	    No server role is set.
	
	  - manager
	
	    "Manager" is set for the server role.
	
	  - -
	
	    For items other than VM guests, "-" is displayed.
		vmguest - server_role
		
		all - server_role

-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 (*)	Network reconfiguration flag
	
	This flag defines whether network settings will be reconfigured during a server switchover.
	
	 - When network settings are reconfigured during server switchover
	
	   "ON" is displayed.
	
	 - When network settings are not reconfigured during server switchover
	
	   "OFF" is displayed.

AUTO_SWITCH	Auto-Recovery flag
	
	This flag defines whether 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
	
	   A switchover operation has been completed.
	
	 - failback running
	
	   A failback operation is in progress.
	
	 - takeover running
	
	   A takeover operation is in progress.

* Note: When a LAN switch blade is in IBP mode or Converged Fabric 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

- target_disk (optional)

Displays the information related to the image operation target disk.
The following properties are displayed for each server.

Item Name	Description
PHYSICAL_SERVER	Physical server name

DISK_NUMBER	Disk number of the configured image operation target disk
	
	  - When the image operation target disk is already configured
	
	    "An integer equal to or greater than 1" is displayed.
	
	  - When the image operation target disk is not configured
	
	    "-" is displayed.
	
	  - When the image operation target disk is already configured, and its information cannot be confirmed in the latest disk information
	
	    "(lost)" is displayed.

DISK_SIZE	Size of the image operation target disk
	
	  - When the image operation target disk is already configured
	
	    The size in megabytes is displayed.
	
	  - When the image operation target disk is not configured
	
	    "-" is displayed.

PARTITION_COUNT	Number of partitions that exist on the image operation target disk
	
	  - When the image operation target disk is already configured
	
	    The number of partitions is displayed.
	
	  - When the image operation target disk is not configured
	
	    "-" is displayed.

- When disk information collection, image operations, or switchover using the backup and restore method is performed, the values of DISK_NUMBER may be modified based on the latest disk recognition order acquired by Resource Orchestrator.

- When disks that are the targets of operations cannot be checked, image operations are determined to be invalid by the pre-operation check of Resource Orchestrator, and the image operations cannot be performed. Perform collection of the disk information and configuration of the image operation target disk again.

- When using this option, if the physical server is a SPARC Enterprise, the information is not output in the list.

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.

[KVM]
When -mode cold is specified for migration of a powered-on VM guest, migration may fail.
In that case, power off the VM guest and perform migration, then wait for a while before powering it back on.

-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

-attr {vmm_mode={maintenance|active}|vmware.maintenance=maintenance [VMware]

Sets VM maintenance mode for the VM host.

-attr vmm_mode=active

-attr vmware.maintenance=active [VMware]

Releases VM maintenance mode for the VM host.

-attr vmm_mode=maintenance_with_move [Hyper-V] [Citrix Xen]

Sets VM maintenance mode for the target VM host and migrates the VM guest when set.

-attr bootagt={dos|winpe}

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

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

- When using Red Hat Enterprise Linux 6 or the Red Hat Enterprise Linux 7 ext4 file system and one of the following conditions applies, it needs to be changed to Windows PE.

  - SAN boot environment using HBA address rename

  - Rack mount or tower servers have been registered with "Disabled" selected for "Association with server management software (ServerView)"

- In a SAN boot environment using HBA address rename and where the following model or OS is used, it needs to be changed to Windows PE.

  - PRIMERGY BX960 S1

- XenServer6 or later

This option cannot be specified for the following models:

- Fujitsu M10/SPARC Enterprise

- PRIMEQUEST

-attr server_role={none|manager}

Sets the server role of a VM guest.
When Resource Orchestrator is operating on a VM guest, setting "manager" limits the operations that stop the manager of Resource Orchestrator.
This prevents the Resource Orchestrator manager from being stopped unintentionally due to incorrect operations.

-attr target_disk=*disk_number*

In *disk_number*, specify the number of the disk configured as the image operation target disk.
An integer larger than 1 can be specified for the disk number.
Check which disk numbers can be specified using the rcxadm server show -name *resource* -disk command.
When using this option, it is only possible to specify the disk number of a physical server for which the disk information has been acquired in advance by execution of the rcxadm server collect -name *resource* -disk command.
When a backup of an admin server is restored, the actual disk configuration and the disk information may not match. Perform collection of the disk information and configuration of the image operation target disk again.

The following options can be specified for the unset subcommand:

-target_disk

Deletes the configuration of the image operation target disk for the specified server.

The following options can be specified for the show subcommand:

-disk

When the server is a physical server for which the disk information has already been acquired, the following information is displayed.

- Number of disks (Number of Disk: 0 or larger)

- Disk number (Equal to the number of disks, 1 or larger)

- Disk name (Hardware display name)

- Disk size unit: MByte

- Number of partitions

- Partition number (Equal to the number of partitions, 1 or larger)

- Partition type

  (One of PRIMARY, EXTENDED, LOGICAL, ESP, MSR, DATA, LINUXSWAP, WINRE, or UNKNOWN)

- File systems of partitions

  (One of FAT12, FAT16, NTFS, FAT32, LINUXSWAP, EXT2, EXT3, EXT4, DISKDUMP, REISERFS, VMFS, EXTENDED, or UNKNOWN)

- Partition size

- Usage area of partitions

When the disk information has not been acquired, no value is displayed.

The following options can be specified for the collect subcommand:

-disk

> When a physical server is in the following configuration, it is necessary to acquire and configure the information of disks for which image operations are possible before starting image operations.
>
> - When using a SAN data disk environment with a built-in disk boot
>
> This option can only be executed while the physical server is in maintenance mode, and stopped. Start the physical server to acquire the disk information from, and stop it after acquiring the disk information.
>
> When performing update of a physical server for which the disk information has already been acquired, save the disk information acquired during the latest update.
>
> This option cannot be specified for the following models:
>
> - SPARC Enterprise

The following option can be specified for the backup subcommand:

-name *resource*

> Specify the name of the VM host (control domain).

-attr os=solaris

> Sets Solaris for the target OS.

Requirements

Permissions

One of the following permissions is required:

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Example

- 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


>rcxadm server list -type vmguest -server_role <RETURN>
PHYSICAL_SERVER   SERVER   VM_HOST   ADMIN_IP        STATUS   SERVER_ROLE
---------------   ------   -------   -------------   ------   ------------
blade1-7          vm-1     vmesx1    192.168.3.127   normal   manager
blade1-7          vm-2     vmesx1    192.168.3.127   normal   none
```

- 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     -
sparcm10-1        ovm       vm_host   -          192.168.3.131   normal   OFF
sparcm10-1        ovm-1     vm_guest  ovm        192.168.3.131   normal   OFF
sparcm10-1        ovm-2     vm_host   ovm        192.168.3.132   normal   OFF
sparcm10-1        ovm-2-1   vm_guest  ovm-2      192.168.3.132   normal   OFF


>rcxadm server list -type all -server_role <RETURN>
PHYSICAL_SERVER   SERVER    TYPE      VM_HOST    ADMIN_IP        STATUS   MAINTENANCE
SERVER_ROLE
---------------   -------   -------   --------   -------------   ------   -----------
------------
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       manager
blade1-7          vm-2      vm_guest vmesx1      192.168.3.127   normal   OFF          none
```

```
blade1-8        Server8  native    -      192.168.3.128  normal  OFF      -
blade1-9        -        -         -      192.168.3.129  stop    -        -
sparcm10-1      ovm      vm_host   -      192.168.3.131  normal  OFF      -
sparcm10-1      ovm-1    vm_guest  ovm    192.168.3.131  normal  OFF      none
sparcm10-1      ovm-2    vm_host   ovm    192.168.3.132  normal  OFF      -
sparcm10-1      ovm-2-1  vm_guest  ovm-2  192.168.3.132  normal  OFF      none
```

- 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
```

- When displaying the information of a disk on which image operations can be performed

```
>rcxadm server show -name blade1-1 -disk <RETURN>
Number of Disk: 2

Disk Number: 1
  Disk Name: FUJITSU MBD2300RC SCSI Disk Device
  Disk Size: 1902400
  Number of Partition: 2

  Partition Number: 1
    Partition Type: PRIMARY
    Partition Filesystem: EXT3
    Partition Size: 1002400
    Partition Usage: 81000

  Partition Number: 2
    Partition Type: LOGICAL
    Partition Filesystem: EXT3
    Partition Size: 900000
    Partition Usage: 7500

Disk Number: 2
  Disk Name: FUJITSU ETERNUS_DXL SCSI Disk Device
  Disk Size: 100000
  Number of Partition: 1

  Partition Number: 1
    Partition Type: EXTENDED
    Partition Filesystem: EXT3
    Partition Size: 100000
    Partition Usage: 30000
```

- When displaying the information of disk configured as the image operation target

```
>rcxadm server list -target_disk <RETURN>
PHYSICAL_SERVER  DISK_NUMBER  DISK_SIZE       PARTITION_COUNT
```

```
--------------- ----------- ---------------- --------------
blade1-1          1           83710            0
blade1-10         -           -                -
blade1-2          2           23014000         13
blade1-3          (lost)      234700           3
```

- When saving the configuration information of OVM for SPARC as XML files

> **rcxadm server backup -name m10-4s-1 -attr os=solaris** <RETURN>

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, 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 "9.2.2 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 "9.2.1 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 match any of the following conditions.
  For more details, refer to "B.2 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.

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** - system or cloning image operations of servers

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm image - system or cloning image operations of servers

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 17 Cloning [Physical Servers]" in the "User's Guide VE"

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 icon] **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 "8.4 Changing the Maximum Number of Cloning Image Versions" in the "User's Guide VE".

- This command is not available if ServerView Deployment Manager is used on the admin LAN. For more details, refer to "B.2 Co-Existence with ServerView Deployment Manager" in the "Setup Guide VE".

. . . .

Subcommand

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

Option

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 alphanumeric 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 alphanumeric 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

Usage example

- 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.

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 Managers" in the "Operation Guide VE".
For information on starting and stopping agents, refer to "2.2 Starting and Stopping Agents" in the "Operation Guide VE".

Requirements

Permissions

  OS Administrator

Location

  Admin server, managed server

Example

- 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 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 Agents" in the "Operation Guide VE".
For information on collecting troubleshooting data, refer to "1.2.1 Collecting Initial Troubleshooting Data" and "1.2.2 Collecting Exhaustive Troubleshooting Data" in the "Troubleshooting".
For information on changing the manager's admin LAN IP address, refer to "8.1 Changing Admin IP Addresses" in the "User's Guide VE".

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 (*)). If the converted full path string exceeds 100 characters, the troubleshooting data will not be collected, and the "Message number 67131" will be displayed.

  * Note: 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.

5.3 rcxadm authctl

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm authctl** - user authentication directory service connection settings

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm authctl - user authentication directory service connection settings

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}
rcxadm authctl unregister
rcxadm authctl show
rcxadm authctl modify {[{-host hostname|-ip ip_address}] [-port port] [-base base_dn] [-bind bind_dn
{-passwd password|-passwd_file password_file}] [-method {SSL|PLAIN}]}
rcxadm authctl diffcert
rcxadm authctl refreshcert -alias alias
rcxadm authctl sync
```

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

- refreshcert

Subcommands

register

Registers directory server connection information. When executing this command, the directory server is not connected.
This command cannot be used when multiple sets of directory server connection information are registered.

unregister

Deletes the connection information of registered directory servers.
This command cannot be used when multiple sets of directory server connection information are registered.

show

The registered directory server connection information is displayed in the following format.

```
host1: Host name or IP address
host2: Host name or IP address
port: Port_number
base: Base DN
bind: Administrative_user_DN
method: Encryption_communication_method
```

When directory server connection information for only one server is registered, only one host name (or IP address) is displayed.

modify

Modifies the connection information of registered directory servers.
This command cannot be used when multiple sets of directory server connection information are registered.

diffcert

Compares the certificates registered with ServerView Operations Manager and the Resource Orchestrator manager, and when the following difference exists, that certificate is displayed using a different name.

- Certificates that exist in the ServerView Operations Manager keystore, but not in the Resource Orchestrator manager's keystore

- Certificates that exist in the ServerView Operations Manager keystore and the Resource Orchestrator manager's keystore, but have conflicting fingerprints

This command cannot be used for the following configurations:

- ServerView Operations Manager has not been installed.

- Internal authentication is used as the authentication method

Difference of the CA certificate (keystore) is displayed using alias in the following format:

```
svs_cms
ldaphost.fujitsu.com
```

refreshcert

Imports the certificate of ServerView Operations Manager corresponding to the specified alias into Resource Orchestrator.

Specify the alias displayed by the diffcert command.

This command cannot be used for the following configurations:

- ServerView Operations Manager has not been installed.

- Internal authentication is used as the authentication method

If a root CA certificate has been registered with ServerView Operations Manager, specify that root CA certificate.

To import the server certificate, specify the alias for the following certificate:

- Server certificate of ServerView Operations Manager

- Server certificate of the directory server to be used

  This is unnecessary when using the directory service provided with ServerView Operations Manager.

![Note icon] **Note**
. . . .

The certificate is imported using the specified alias. The existing certificate is deleted in the following cases:

- There is a certificate which has the same alias

- There is a certificate which has the same content as the certificate to be imported

. . . .

![Point icon] **Point**
. . . .

When executing the command, create a copy of the keystore (truststore-cacerts) file for Resource Orchestrator in the following format. When a file with the same name already exists, it will be overwritten.

[Windows Manager]

- Source File

  Installation_folder\SVROR\Manager\runtime\jre6\lib\security\cacerts

- Destination File

  Installation_folder\SVROR\Manager\runtime\jre6\lib\security\cacerts.org

[Linux Manager]

- Source File

  /opt/FJSVrcvmr/runtime/jre6/lib/security/cacerts

- Destination File

  /opt/FJSVrcvmr/runtime/jre6/lib/security/cacerts.org

. . . .

sync

Synchronizes the directory server connection settings of Resource Orchestrator with those of ServerView Operations Manager. When directory server configuration information is not already registered, it will be registered with Resource Orchestrator using the settings of ServerView Operations Manager.

This command cannot be used for the following configurations:

- ServerView Operations Manager has not been installed.

Options

The following options can be specified when using the register and modify subcommands:

-port *port* (optional)

Specify the port number of the directory server. When omitted, the following port number is regarded as having been specified using the -method value.

- SSL

  636

- PLAIN

  389

-method {SSL|PLAIN} (optional)

Specify the communication encryption method for the directory server. Specify either one of the following:

- When encrypted communication is enabled

  SSL

- When encrypted communication is not enabled

  PLAIN

When this option is omitted, the -method SSL is regarded as being specified.

The following options can be specified when using the register subcommand:

-host *hostname*

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

-ip *ip_address*

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

-base *base_dn*

Specify the search base of the directory server in DN format.

-bind *bind_dn*

Specify administrative user name of the directory server in the DN format.

-passwd *password*

Specify the password for the administrative user name of the directory server.

-passwd_file *password_file*

Specify the password file for the administrative user name of the directory server. Enter the password file using the following format (remove the quotation marks).

"userdn,password"

Specify the following options when using the modify subcommand:

-host *hostname*

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

-ip *ip_address* (optional)

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

-base *base_dn* (optional)

Specify the search base of the directory server in DN format.

-bind *bind_dn* (optional)

Specify administrative user name of the directory server in the DN format.

-passwd *password* (optional)

Specify the password for the administrative user name of the directory server.

-passwd_file *password_file* (optional)

Specify the password file for the administrative user name of the directory server. Enter the password file using the following format (remove the quotation marks).

"userdn,password"

Specify the following options when using the refreshcert subcommand:

-alias *alias*

Specify the alias of the certificate to import into the CA certificate of Resource Orchestrator.

When using blank spaces or symbols in the specified string, enclose the whole string in double quotes (").

An alias which contains double quotes (") as character elements cannot be specified for this command. Remove any double quotes (") included in the alias before executing this command.

Note

- Enter a string of 1 or more characters for the administrative user name.

- Enter a string no longer than 128 characters for the password.

- When changing the configuration of the administrative user name and password, specify both files.

- When using blank spaces in the specified string, enclose the whole specified string in double quotes ("). Note that it is not necessary to use double quotations (") when specifying the character string in the password file.

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.

5.4 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 "4.2 An Error Occurs during Cloning after the Manager is Reinstalled." in "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 "5.11 rcxadm mgrctl" and "5.2 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 (*). 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 (*), 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.

Options

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.

5.5 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 "5.11 rcxadm mgrctl".

Subcommands

modify

Changes the database configuration for Resource Orchestrator.

Options

-password

Changes 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 must be the length allowed 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.

5.6 rcxadm deployctl

Name

[Windows]
Installation_folder**Agent****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 or later, 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 "17.2 Collecting" in the "User's Guide VE".

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.

5.7 rcxadm eventctl

Name

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

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm eventctl - Event control

Format

```
rcxadm eventctl add -destination host -community snmp_community
rcxadm eventctl delete -destination host -community snmp_community
rcxadm eventctl list
```

Description

rcxadm eventctl is the command used to send Resource Orchestrator events as SNMP traps.
For details on how to use this command, refer to "Appendix G Sending SNMP Traps" in the "Setup Guide VE".

Subcommands

add

> Registers the SNMP trap transmission destination. A maximum of five destinations can be registered.

delete

> Deletes a registered SNMP trap transmission destination.

list

> Displays a list of registered SNMP trap transmission destinations.
> The following properties are displayed for each server.

Item Name	Description
DESTINATION	Host name or IP address
COMMUNITY	SNMP community name

Options

The following options can be specified for the set subcommand, when specifying add or delete:

-destination *host*

> Specify the IP address or server name of the server that is the SNMP trap transmission destination for *host*.
> For the server name, enter a string of up to 64 alphanumeric characters and numerals.
>
> "%", "+", ",", "-", ".", "/", ":", "=", "@", "_", "~"

-community *snmp_community*

> Specify SNMP community name or server name of the server that is the SNMP trap transmission destination for *snmp_community*.
> For the SNMP community name, enter a string of up to 32 alphanumeric characters, hyphens ("-"), and underscores ("_").

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.

5.8 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.

Operations for system images and cloning images of servers

For details on changing the maximum number of system image versions, refer to "8.3 Changing the Maximum Number of System Image Versions" in the "User's Guide VE".

For details on changing the maximum number of cloning image versions, refer to "8.4 Changing the Maximum Number of Cloning Image Versions" in the "User's Guide VE".

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 "8.5 Changing the Image Folder Location" in the "User's Guide VE.

Subcommand

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.

Option

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 must match all of 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 Managers" in the "Operation Guide VE".

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

Usage example

- 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 /home/tmp

> **# rcxadm imagemgr set -attr imagedir=/home/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 /home/tmp/Resource Orchestrator VE

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

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

5.9 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.

5.10 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.

Options

-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

Example

- 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
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.

5.11 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 Managers" in the "Operation Guide VE".
For information on collecting troubleshooting data, refer to "1.2.1 Collecting Initial Troubleshooting Data" and "1.2.2 Collecting Exhaustive Troubleshooting Data" in "Troubleshooting".
For information on methods for changing IP addresses and port numbers, refer to "8.1 Changing Admin IP Addresses" and "8.2 Changing Port Numbers" in the "User's Guide VE".

[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 (*)). If the converted full path string exceeds 100 characters, the troubleshooting data will not be collected, and the "Message number 67131" will be displayed.
>
>   * Note: 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.

5.12 rcxadm servermgr

Name

[Windows Manager]
Installation_folder**SVROR\Manager\bin\rcxadm servermgr** - Server management software operations

[Linux Manager]
/opt/FJSVrcvmr/bin/rcxadm servermgr - Server management software operations

Format

```
rcxadm servermgr register -name name [-label label] [-comment comment] -soft_name soft_name
rcxadm servermgr list [-verbose]
rcxadm servermgr show -name name
rcxadm servermgr unregister -name name
rcxadm servermgr modify -name name [-label label] [-comment comment]
rcxadm servermgr refresh -name name
```

Description

rcxadm servermgr is the command used to perform operations of server management software.

Subcommands

register

Registers server management software.

list

Displays a list of server management software information.

The following detailed information is displayed:

Table 5.2 Server Management Software Information

Item Name	Description
NAME	Server management software name
LABEL	Label of the server management software
COMMENT (*)	Comment for the server management software
SOFT NAME	Name of the server management software
STATUS	Status of the server management software

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

show

Displays the detailed information of the server management software.

The following detailed information is displayed:

Table 5.3 Detailed Information of Server Management Software

Item Name	Description
Name	Server management software name
Label	Label of the server management software
Comment	Comment for the server management software
Soft name	Name of the server management software
Version	Version of the server management software
Status	Status of the server management software

unregister

Unregisters the server management software.

modify

Modifies the following items of server management software:

- Label

- Comment

refresh

Updates server management software information.

Options

-name *name*

In *name*, specify the resource name of the target server management software.

-soft_name *soft_name*

In *soft_name*, specify the server management software. The specifiable names are shown below.

- When using BMC BladeLogic Server Automation

Specify "blade_logic".

-verbose

Specify when displaying detailed information.

-label *label*

In *label*, specify the label of the target server management software.

-comment *comment*

In *comment*, specify the comment for the target server management software.

Examples

- To display the list of server management software information:

```
>rcxadm servermgr list <RETURN>
NAME          LABEL    SOFT NAME                        STATUS
----          -----    ---------                        ------
BladeLogic    -        BMC BladeLogic Server Automation  normal
```

- To display the detailed list of server management software information:

```
>rcxadm servermgr list -verbose <RETURN>
NAME          LABEL    COMMENT    SOFT NAME                        STATUS
----          -----    -------    ---------                        ------
BladeLogic    -        -          BMC BladeLogic Server Automation  normal
```

- To display the detailed information for server management software:

```
>rcxadm servermgr show -name BladeLogic <RETURN>
Name: BladeLogic
Label:
Comment:
Soft name: BMC BladeLogic Server Automation
Version: 8.2.01.273
Status: normal
```

5.13 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
rcxadm storagemgr list
rcxadm storagemgr unregister -name name
```

Description

rcxadm storagemgr is the command used to operate storage management software.

Subcommands

register

Registers storage management software.

list

Displays a list of storage management software information.

unregister

Unregisters storage management software.

Options

The following option can be specified when using the register and unregister subcommands:

-name *name*

Specify the resource name of the target operation storage management software for *name*.
For the resource name for registration, enter a string of up to 32 alphanumeric characters, hyphens ("-"), and underscores ("_"). This name should start with an alphabet character.

The following option can be specified when using the register subcommand:

-soft_name *soft_name*

Specify the storage management software for *soft_name*.
Specify "esc", when using ETERNUS SF Storage Cruiser.

Example

- To display a list of storage management software

```
>rcxadm storagemgr list <RETURN>
NAME       LABEL     SOFT NAME                   STATUS
----       -----     ---------                   ------
esc00      -         ETERNUS SF Storage Cruiser  normal
```

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.

5.14 macbindconfig

Name

- Agent

  [Linux]
  /usr/local/sbin/macbindconfig - Bind settings for MAC addresses (Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, or Red Hat Enterprise Linux 7)

Format

```
macbindconfig create
```

Description

macbindconfig is the function that configures MAC addresses of Network Interface Cards (NICs) in interface configuration files corresponding to Ethernet interface names (eth0, eno1, enp5s0f0, etc.) and allocates the correct NIC to each interface, regardless of the NIC load order, in the environment where multiple NICs are used.

This command is automatically executed when installing an ROR agent.

After an ROR agent has been installed, execute this command when adding or removing network interfaces.

Subcommands

create

Retains the relation information on the PCI bus number that corresponds to the Ethernet interface name (eth0, eno1, enp5s0f0, etc.) in a file (/etc/macbind-tool/pci-eth_table) as configuration information.

Requirements

Permissions

OS Administrator

Location

Managed server

Examples

- When creating a configuration information file with the PCI bus number that corresponds to the Ethernet interface name

  > **/usr/local/sbin/macbindconfig create** <RETURN>

Exit Status

This command returns the following values:

0

    The command executed successfully.

non-zero

    An error has occurred.

Chapter 6 Backup and Restoration Operations for Configuration Definition Information

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

6.1 rcxbackup

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 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 the operations are completed.

When this command is executed while the manager is being 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. However, for online backups, the name of a directory on a network drive cannot be specified.

When omitting the directory specification, or the destination is defined in the following definition file, the backup is saved in the specified directory.

Storage Location of Definition Files

[Windows Manager]
Installation_folder**SVROR\Manager\etc\customize_data\Manager_backup.rcxprop**

[Linux Manager]
/etc/opt/FJSVrcvmr/customize_data/manager_backup.rcxprop

If the directory specification is omitted in the definition file, the backup is saved in the following directory:

Storage Location of Backup Files

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

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

Requirements

Permissions

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Example

> **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, 172,800 or less seconds can be specified.

- Do not stop or start the manager during execution of this command.

- If this command fails, a folder or a directory that has a name starting with tmp will be created in the folder or directory specified for the -dir option. If the problem is still not resolved after performing the actions based on the output error message, collect the folder or the directory as troubleshooting data, and contact Fujitsu technical staff. Delete these folders or directories when they are no longer necessary.

- Do not execute this command while resource operations 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 rcxkeydefbackup

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)
		Installation folder\SVROR\Manager\etc\l_server (*1)
		installation folder\SVROR\Manager\etc\trapop.bat
		Installation folder\SVROR\Manager\sys\usm\etc\symmetrix.conf

No	Overview	Item
4	Image management information (*2)	The number of system image versions
		The number of cloning images versions
		Image file storage folder
5	Home tab information	*Installation_folder*\SVROR\Manager\rails\public\man\en\VirtualEdition\home.html (*3)
		Installation_folder\SVROR\Manager\rails\public\man\ja\VirtualEdition\home.html (*3)
		Installation_folder\SVROR\Manager\rails\public\man\en\VirtualEdition\img (*3)
		Installation_folder\SVROR\Manager\rails\public\man\ja\VirtualEdition\img (*3)
		Installation_folder\SVROR\Manager\rails\public\man\en\VirtualEdition\css (*3)
		Installation_folder\SVROR\Manager\rails\public\man\ja\VirtualEdition\css (*3)

*1: All objects in the specified directory are targeted. Objects linked with shortcut are not backed up.
*2: The values displayed using the rcxadm imagemgr info command are targeted.
*3: It is information file used by Virtual Edition.

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)
		/etc/opt/FJSVrcvmr/l_server (*1)
		/etc/opt/FJSVrcvmr/trapop.sh
		/opt/FJSVrcvmr/sys/usm/etc/symmetrix.conf
4	Image management information (*2)	The number of system image versions
		The number of cloning images versions
		Image file storage directory
5	Home tab information	/opt/FJSVrcvmr/rails/public/man/en/VirtualEdition/home.html (*3)
		/opt/FJSVrcvmr/rails/public/man/ja/VirtualEdition/home.html (*3)
		/opt/FJSVrcvmr/rails/public/man/en/VirtualEdition/img (*3)
		/opt/FJSVrcvmr/rails/public/man/ja/VirtualEdition/img (*3)
		/opt/FJSVrcvmr/rails/public/man/en/VirtualEdition/css (*3)
		/opt/FJSVrcvmr/rails/public/man/ja/VirtualEdition/css (*3)

*1: All objects in the specified directories are targeted. Objects linked using symbolic links are not backed up.
*2: The values displayed using the rcxadm imagemgr info command are targeted.
*3: It is information file used by Virtual Edition.

Other definition and management information cannot be backed up while resource operations 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. However, for online backups, the name of a directory on a network drive cannot be specified.

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]
/etc/opt/FJSVrcvmr/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/FJSVrcvmr/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 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.

Requirements

Permissions

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Example

>**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 or directory 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.
>
>   - 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.
> ⋯⋯⋯

6.3 rcxkeydefrestore

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.

Requirements

Permissions

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Example

>**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

. . . .

- This command deletes everything in the folder or directory that is the target of Backup/Restore when it is executed, and then restores the backup specified with the -file option.

- 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.

. . . .

6.4 rcxrestore

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.

Requirements

Permissions

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Example

>**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.

6.5 scwbackup

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 objects in the specified folder or directory are targeted. Objects linked with shortcuts or symbolic links are not backed up.

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 objects in the specified directories are targeted. Objects linked using symbolic links are not backed up.
*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 VM host.

Backup of image file information is only performed when no operation is being executed.

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. However, for online backups, the name of a directory on a network drive cannot be specified.

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]
/etc/opt/FJSVrcvmr/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/FJSVrcvmr/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 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.

Requirements

Permissions

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Example

> >**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 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.

- 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.

∙∙

6.6 scwrestore

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.

Requirements

Permissions

- OS Administrator

- Resource Orchestrator Privileged User

Location

Admin server

Example

>**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

. . . .

- This command deletes everything in the folder or directory that is the target of Backup/Restore when it is executed, and then restores the backup specified with the -dir option.

- 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 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 -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 Maintenance Commands

This chapter describes the commands for maintenance.

7.1 inst_collectinfo (Collection of Investigation Data during Installation)

Name

[Windows Manager]
Installation_medium\DISK1**Common\install_tool\inst_collectinfo** - Collection of Investigation Data during Installation

[Linux Manager]
DVD-ROM_mount_point/DISK1/**Common/install_tool/inst_collectinfo.sh** - Collection of Investigation Data during Installation

Format

[Windows Manager]

```
inst_collectinfo folder
```

[Linux Manager]

```
inst_collectinfo.sh folder
```

Description

inst_collectinfo collects investigation data when an error occurs while installing Resource Orchestrator.

Before requesting a problem investigation, collect investigation data with this command.

P Point

- About 450 MB of disk size is required to collect the data. 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 folder to store data in not more than 46 bytes. If a name more than 46 bytes was specified, some information could be inaccurate.

Options

folder

Specify the name of the folder for storing investigation data of Resource Orchestrator.
A folder path that includes spaces cannot be specified.
If the specified folder does not exist, it will be created automatically.
If the specified folder contains a file or a subfolder that has the same name as one of the investigation data files, it will be overwritten.

Requirements

Permissions

OS Administrator

Location

Admin server

Example

[Windows Manager]

```
> inst_collectinfo folder1
```

[Linux Manager]

```
# inst_collectinfo.sh folder1
```

Exit Status

This command returns the following values:

0

The command executed successfully.

non-zero

An error has occurred.

Part 2   File Reference

Chapter 8 XML Files

This chapter explains resource configuration information and user definition information (XML files).

8.1 Network Configuration Information

This section explains the creation and modification of network configuration information.

The commands for network device operations are shown below.

Operation		Command
Creation	Individual creation	rcxadm netdevice create
	Batch creation	rcxadm netconfig import
Modification	Individual modification	rcxadm netdevice modify
	Batch modification	rcxadm netconfig import

8.1.1 Creation

The XML definition for network configuration information is shown below.

- XML definitions for creation of individual network devices

```xml
<?xml version="1.0" encoding="utf-8"?>
<Netdevice ip="Admin IP Address" subnetmask="Admin LAN Subnet Mask>
  <Location>Location</Location>
  <Types>
    <Type>Type</Type>
  </Types>
  <FabricType>Fabric type</FabricType>
  <ApplianceType>Appliance Type</ApplianceType>
  <Maintenance>Maintenance Mode</Maintenance>
  <ManagementHost>Management host IP address</ManagementHost>
  <Vfabs>
    <Vfab vfabid="VFAB ID" name="VFAB Name" mode="Operation Mode">
      <Dot1adPorts>
        <Dot1adPort name="Sending and Receiving Port of the IEEE802.1ad Frame"></Dot1adPort>
      </Dot1adPorts>
      <CirPorts>
        <CirPort name="CIR port name or CIR Link Aggregation Port Identifier Information"></CirPort>
      </CirPorts>
      <EpPorts>
        <EpPort name="EP port name or EP Link Aggregation Port Identifier Information"></EpPort>
      </EpPorts>
    </Vfab>
  </Vfabs>
  <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="Protocol" auth_type="Management Method for Authentication Information"
authority="Administrator Authority" check="Account Confirmation">
            <IpAddress>Destination IP Address</IpAddress>
            <Port>Destination Port Number</Port>
            <User>Account</User>
            <Password>Password</Password>
            <PrivilegedPassword>Administrator Password</PrivilegedPassword>
            <PasswordEncryption>Password Encryption</PasswordEncryption>
          </LoginInfo>
        </LoginInfos>
        <Monitoring>
          <Methods>
            <Method>Monitoring method</Method>
          </Methods>
          <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" />
          <Link ip="Management IP address for Link Destination Device" nic_index="Port Name of
Link Destination (for display)" kind="server" />
          <StagId>S-TAG ID</StagId>
        </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">
    <Location>Location</Location>
    <Types>
      <Type>Type</Type>
    </Types>
    <FabricType>Fabric type</FabricType>
    <ApplianceType>Appliance Type</ApplianceType>
    <Maintenance>Maintenance Mode</Maintenance>
    <ManagementHost>Management host IP address</ManagementHost>
    <Vfabs>
      <Vfab vfabid="VFAB ID" name="VFAB Name" mode="Operation Mode">
        <Dot1adPorts>
         <Dot1adPort name="Sending and Receiving Port of the IEEE802.1ad Frame"></Dot1adPort>
        </Dot1adPorts>
        <CirPorts>
         <CirPort name="CIR port name or CIR Link Aggregation Port Identifier Information"></
CirPort>
        </CirPorts>
        <EpPorts>
         <EpPort name="EP port name or EP Link Aggregation Port Identifier Information"></
EpPort>
        </EpPorts>
      </Vfab>
```

```xml
    </Vfabs>
    <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="Protocol" auth_type="Management Method for Authentication Information"
authority="Administrator Authority" check="Account Confirmation">
          <IpAddress>Destination IP Address</IpAddress>
          <Port>Destination Port Number</Port>
          <User>Account</User>
          <Password>Password</Password>
          <PrivilegedPassword>Administrator Password</PrivilegedPassword>
          <PasswordEncryption>Password Encryption</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring>
        <Methods>
          <Method>Monitoring method</Method>
        </Methods>
        <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" />
        <Link ip="Management IP address for Link Destination Device" nic_index="Port Name of
Link Destination (for display)" kind="server" />
        <StagId>S-TAG ID</StagId>
      </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>
        <NicIndex>Connection Port Name of Device 1</NicIndex>
      </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>
        <NicIndex>Connection Port Name of Device 2</NicIndex>
      </Device>
    </Devices>
  </Link>
```

```
        </Links>
        </NetConfig>
```

Table 8.1 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	Batch Modification	
Network configuration information (NetConfig)	A collection of network configuration information	-	Not possible	Not possible	Required	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	Optional	Yes (*1)
Registration mode (Mode)	Registration mode	Specify the registration mode of the network device. Specify one of following items. - add New registration Network device information is not overwritten when the specified management IP address has already been used to register another resource. - modify Modification Network device information is overwritten when the specified management IP address has already been used to register another resource. If left blank, "add" is specified.	Not possible	Not possible	Optional	Required	No
Admin IP address (Netdevice ip)	Admin IP address for the network device	Specify an IPv4 address.	Required	Optional	Required	Required	Yes
Device name (Netdevice name)	Name of the network device	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), hyphens ("-"), and periods ("."). If left blank, the host name or IP address obtained from the network device is specified. For Ethernet Fabric, if left blank, the destination host name of the	Optional	Optional	Optional	Optional	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
		representative virtual IP address of the fabric is specified. If characters other than alphanumeric characters, underscores ("_"), hyphens ("-"), and periods (".") are used in the host name obtained from the network device, they will be replaced with underscores ("_"). However, when the obtained value is 33 characters or longer, only the first 32 characters will be specified.					
Location (Location)	Location	Specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). If left blank, the location obtained from the network device is specified. For Ethernet Fabric, if left blank, the destination location of the representative virtual IP address of the fabric is specified. If characters other than alphanumeric characters, underscores ("_"), hyphens ("-"), and periods (".") are used in the location obtained from the network device, they will be replaced with underscores ("_"). However, when the obtained value is 33 characters or longer, only the first 32 characters will be specified.	Optional	Optional	Optional	Optional	Yes (*2)
Type information (Types)	A collection of type information	Specify one or more Type elements.	Optional	Optional	Optional	Optional	Yes (*1)
Type (Type)	Network device type	Specify the type of the network device. Specify one of following items. - L2-Switch - Firewall - SLB - Fabric - ManagementHost Network devices with "Firewall" or "SLB" specified are set as the registration targets for network pools. When omitted, the type obtained from the Network Device Model Definitions is specified.	Optional	Optional	Optional	Optional	Yes (*2)

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
		When registering network devices with multiple types, specify multiple entries of this element. However, when "Fabric" or "ManagementHost" is specified, multiple entries of this element cannot be specified.					
Fabric type (FabricType)	Fabric type	Specify the fabric type. Specify one of the following options: - C-Fabric - VCS Specify when "Fabric" is specified for the *Type* (type). When omitted, "C-Fabric" is specified.	Optional	-	Optional	-	Yes
Appliance type (ApplianceType)	Appliance type	Specify the type of the appliance. Specify one of following items. - physical Physical appliance - virtual Virtual appliance If left blank, "physical" is specified. Specify "virtual", when registering IPCOM VA.	Optional	Not possible	Optional	Not possible	Yes (*2)
Maintenance mode (Maintenance)	Maintenance mode settings	Specify the status of maintenance mode. Specify one of following items. - true Maintenance mode - false Normal If left blank, "false" is specified.	Optional	-	Optional	-	Yes
Management host IP address (ManagementHost)	Management host IP address	When registering virtual appliances, specify an IPv4 address of the management host (IPCOM VX). Specify the value only when registering a virtual appliance.	Optional	-	Optional	-	Yes
VFAB information (Vfabs)	A collection of VFAB information	One or more Vfab elements are specified.	-	-	-	-	Yes (*15)

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
VFAB (Vfab)	A single piece of VFAB information	None	-	-	-	-	Yes
VFAB ID attributes (vfabid)	VFAB ID	The VFAB ID configured for the Ethernet Fabric (Converged Fabric) is specified. An integer between 1 - 3000, or "default" is specified.	-	-	-	-	Yes
name attributes (name)	VFAB name	The VFAB name is specified.	-	-	-	-	Yes
mode attribute (mode)	VFAB operation mode	A VFAB operation mode is specified. One of the following is specified: - host Host mode - network Network mode For details on operation of each mode, refer to the manuals of the Ethernet Fabric switch device (Converged Fabric).	-	-	-	-	Yes
Ports for sending and receiving of the IEEE802.1ad frame (Dot1adPorts)	Collection of ports for sending and receiving of the IEEE802.1ad frame used in VFABs	One or more Dot1adPort elements are specified.	-	-	-	-	Yes
Information of ports for sending and receiving of the IEEE802.1ad frame (Dot1adPort)	Information of ports for sending and receiving of the IEEE802.1ad frame used by a single VFAB	There is no information to specify.	-	-	-	-	Yes
name attributes (name)	The names of ports for sending and receiving of the IEEE802.1ad frame used by VFABs	The port name (ifName) configured in the Converged Fabric is specified.	-	-	-	-	Yes
CIR ports (CirPorts)	Collection of CIR ports used for VFABs	One or more CirPort elements are specified. This item is specified when the mode attribute under the Vfab element is "host".	-	-	-	-	Yes
CIR port information (CirPort)	Information of CIR ports used for a single VFAB	There is no information to specify.	-	-	-	-	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
name attributes (name)	CIR port names used for VFABs or link aggregation port identifier information	Specify a character string containing up to 64 alphanumeric characters and symbols (ASCII characters (0x20 to 0x7e)). - For physical ports The port name (ifName) configured in Converged Fabric is specified. - For link aggregation ports Link aggregation port identifier information "linkaggregation*Domain ID_Link Aggregation Group Number*" is specified. (*11)	-	-	-	-	Yes
EP Ports (EpPorts)	Collection of EP ports used for VFABs	One or more EpPort elements are specified.	-	-	-	-	Yes
EP Port information (EpPort)	Information of EP ports used for a single VFAB	There is no information to specify.	-	-	-	-	Yes
name attributes (name)	EP port names used for VFABs or link aggregation port identifier information	Specify a character string containing up to 64 alphanumeric characters and symbols (ASCII characters (0x20 to 0x7e)). - For physical ports The port name (ifName) configured in Converged Fabric is specified. However, the port name (ifName) of the member port of the link aggregation port is not specified. - For link aggregation ports Link aggregation port identifier information "linkaggregation*Domain ID_Link Aggregation Group Number*" is specified. (*11)	-	-	-	-	Yes
Device information (DeviceInfo)	Device information	Specify the information of the model of the network device.	Optional	-	Optional	-	Yes
SysObjectId (SysObjectId)	SysObjectId	When monitoring using SNMP, SysObjectID collected automatically is specified as an OID in number and period format.	-	-	-	-	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
Vendor Name (Vendor)	Vendor name	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). When omitted, the vendor name obtained from the Network Device Model Definitions is specified. For VCS, when omitted, "Brocade" is specified.	Optional	-	Optional	-	Yes
Device name (ProductName)	Device name (product name)	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). When omitted, the unit name obtained from the Network Device Model Definitions is specified. For Converged_Fabric, "Converged_Fabric" is displayed. For VCS, when omitted, "VDX" is specified.	Optional	-	Optional	-	Yes
Model Name (ModelName)	Model name	Specify a character string beginning with an alphanumeric character and containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-"). When omitted, the model name obtained from the Network Device Model Definitions is specified. For Converged_Fabric, "Converged_Fabric" is displayed. For VCS, when omitted, a hyphen, "-" is specified.	Optional	-	Optional	-	Yes
Firmware (Firmware)	Firmware or IOS version	A character string is specified. Specification is unnecessary as it is automatically collected from the network device.	-	-	-	-	Yes
Group ID (Redundancy group_id)	Group ID	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	Optional	Yes (*2)

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
Management information (MgmtInfos)	A collection of management information	Specify one or more Snmps elements, LoginInfo elements, or other similar elements.	Required	Optional	Required	Optional	Yes
SNMP information (Snmps)	A collection of SNMP information	Specify the ReadCommunity element once.	Optional	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 ("-").	Optional (*8)	Optional	Optional (*8)	Optional	Yes
Login information (LoginInfos)	A collection of login information	Specify one or more LoginInfo elements.	Optional (*7)	Optional	Optional	Optional	Yes (*1)

Protocol (LoginInfo protocol)	Protocol	Specify the protocol used when logging in using login information.
		
		Specify one of following items.
		
		- remote_login
		
		  Specify when using Telnet or SSH login information.
		  If login via Telnet is possible, use Telnet. If login via Telnet is not possible, use SSH.
		
		- ftp
		
		  Specify when using FTP login information.
		
		- telnet
		
		  Specify when using Telnet login information.
		
		- ssh
		
		  Specify when using SSH login information.
		
		- netconf
		
		  Specify when "NETCONF" has been specified for the Monitoring method (Method).
		
		When omitted, "remote_login" is specified.
		
		Specify "ssh", when *Type* (Type) is "Fabric" and the *Fabric type* is "C-Fabric".
			Optional (*7)	Optional	Optional	Optional	Yes

- 98 -

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
Management method for authentication information (LoginInfo auth_type)	Management method for authentication information	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.	Option al	Option al	Option al	Option al	Yes (*3)

Administrator authority (LoginInfo authority)	Presence or absence of administrator authority	Specify the type of authority for the account. Specify one of following:
		 - user
		   Specify when it is possible to connect to the target network device using an account with user privileges (the account specified for "Account (User)") and then switch to administrator privileges to modify definitions.
		 - admin
		   Specify only when it is possible to change the definition for the device to register using an account with administrator privileges (the account specified for "Account (User)").
		 When omitted, "user" is specified.
		 When "Fabric" is specified for the *type* (Type), specify "user".
		 When "NSAppliance" is specified for the *model_name* (ModelName), specify "user".
			Option al (*7)	Option al	Option al	Option al	Yes (*3)

Account confirmation (LoginInfo check)	Presence or lack of account information checks	Specify whether to check the account information when the registration or modification is performed. Specify one of following items.
		 - true
		   Checking is performed. (*4)
		 - false
		   Checking is not performed.
		 If left blank, "false" is specified.
			Option al	Option al	Option al	Option al	No

Destination IP address	Destination IP address	Specify the IP address in IPv4 format.	Option al	Option al	Option al	Option al	Yes (*3)

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
(IpAddress)		Specify when performing checks of the auto-configuration settings for the network device and account information (when "true" is specified for the account check (LoginInfo check)) from an IP address other than the admin IP address (Netdevice ip). Specify the same IP address when there are multiple specifications of the same login information for the *tenant name* (Tenant). When a different IP address is specified, or partially omitted, the auto-configuration settings for the network device and the account information of the connection IP address (IpAddress) in the login information with "user" specified in the administrator privileges (LoginInfo authority) are checked. If left blank, the admin IP address (Netdevice ip) is specified.					
Destination port number (Port)	Port number of the protocol to connect the destination	Specify an integer between 1 and 65535. Specify the port number of the network device to perform checking of auto-configuration settings and account information (when "true" is specified for the account check (Login Info check)). Specify the same port number when there are multiple specifications of the same login information for the *tenant name* (Tenant). When a different port number is specified, or partially omitted, the auto-configuration settings for the network device and the account information of the port number in the login information with "user" specified in the administrator privileges (LoginInfo authority) are checked. If left blank, one of the following is specified based on the value specified for the protocol (LoginInfo protocol). - 23 or 22	Optional	Optional	Optional	Optional	Yes (*3)

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	

		For "remote_login" The default value (23 or 22) for the protocol (Telnet or SSH) that was successful when checking the account information is specified. However, when not performing a check of the account information (when "false" is specified for the account check (LoginInfo check)), the default value for Telnet (23) is specified.
		
		- 21
		
		  For "ftp"
		
		- 23
		
		  For "telnet"
		
		- 22
		
		  For "ssh"
		
		- 830
		
		  For "netconf"					

Account (User)	User account for connection	When "user" is specified for Administrator authority (LoginInfo authority), specify an account with user privileges. When "admin" is specified for Administrator authority (LoginInfo authority), specify an account with administrator privileges. For the account, specify a character string containing up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").	Optional (*9)	Optional (*9)	Optional (*9)	Optional (*9)	Yes (*3)
Password (Password)	Password for connection	Specify a character string of up to 64 alphanumeric characters and symbols (!$%()*+,-./:;=@[]^_`{|}~ and spaces).	Required	Optional (*9)	Required	Optional (*9)	Yes (*3)
Administrator password (PrivilegedPassword)	Administrator password	Specify a character string of up to 64 alphanumeric characters and symbols (!$%()*+,-./:;=@[]^_`{|}~ and spaces). When "admin" is specified for Administrator authority (LoginInfo authority), the administrator password is regarded as invalid.	Optional (*7)	Optional	Optional	Optional	Yes (*3)

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
Password encryption (PasswordEncryption)	Presence or absence of password encryption	Specify whether the password of the network device is encrypted. Specify either one of the following: - 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. When exporting the information, the password will be encrypted and "true" is set for this element to ensure security. Specify "true" only when registering an external server using an encrypted password.	Optional	Optional	Optional	Optional	Yes (*3)
Monitoring information (Monitoring)	Monitoring information	Specify the element of monitoring information.	Optional	Optional	Optional	Optional	Yes
Monitoring method information (Methods)	Collection of monitoring method information	Specify the monitoring method by specifying one or more Method elements. When this element is omitted, one of the following will be specified. - NETCONF When using VCS - SNMP For something other than VCS	Optional	Optional	Optional	Optional	Yes
Monitoring method (Method)	Monitoring method	Specify the monitoring method for the network device. Specify one of following items. - ping When using ping monitoring - SNMP When using SNMP monitoring However, specification is not possible when *Fabric type* is "VCS". - NETCONF	Optional	Optional	Optional	Optional	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
		This can only be specified when *Fabric type* is "VCS". Furthermore, it is necessary to specify "netconf" for *Protocol* (LoginInfo protocol). When omitted, "no monitoring" is specified for monitoring of the network device. When specifying multiple monitoring methods, specify multiple entries of this element.					
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. Specify "60" when "Simple" is specified for *Pre-configuration details* (PresettingInfo) and "Firewall" and "SLB" are specified for *Type* (Type).	Optional	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	Optional	Yes
Timeout (Timeout) (*5)	Timeout (seconds) (This cannot be omitted when modifying the monitoring method)	Specify an integer between 1 and 300. If left blank, "30" is set.	Optional	Optional	Optional	Optional	Yes
Web Management Window URL (MgmtURL)	Web management window URL	Specify the URL for the Web management window. This can be specified when the Web management functions of the corresponding network devices are provided. If left blank, "http://*Admin IP address*/" is specified. When "Fabric" is specified for the *type* (Type), the default value is not specified.	Optional	Optional	Optional	Optional	Yes
Port information (Ports)	A collection of port information	One or more Port elements are specified.	Optional	Optional	Optional	Optional	Yes (*1)
Port name (Port name) (*12)	Port name	Specify the port name configured in the network device using a string of up to 64 characters.	Optional (*13)	Optional (*13)	Optional (*13)	Optional (*13)	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
		Alphanumeric characters and symbols (ASCII characters (0x20 to 0x7e) can be specified. Specify this when specifying a StagId element or when both SNMP monitoring and NETCONF monitoring are disabled. If left blank, the value for the port name obtained from the network device is specified. For the procedure to confirm port names, refer to "7.7.3 Creating Network Configuration Information (XML Definition)" in the "Design Guide VE".					
Port overview (description)	Overview of the port	The overview of the port (description) is specified. Specification is unnecessary as it is automatically collected from the network device.	-	-	-	-	Yes
Communication Status (PhysicalState)	Communication status	The value of line speed and the communication mode are specified. Specification format: *Line_speed (bps)*/*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 from the network device.	-	-	-	-	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)
Port Name of Link Destination (Link port)	The name of the link destination port of a physical interface	The name of the destination port to be linked to is specified.	-	-	-	-	Yes (*2)

| Element Name | Description | Remarks (Possible Values, Examples) | Specification | | | | Output Using Export |
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
Port Name of Link Destination (for display) (Link nic_index)	The NIC index of the link destination port of a physical interface	When the *Type of Link Destination Device* is "server" and *Connection Port Name of Device* (NicIndex) is specified during link information registration, the index number of the NIC 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)

S-TAG ID (StagId)	S-TAG value	Specify the S-TAG ID specified in the virtual machine interface of IPCOM VX. Specify an integer between 1 and 4094. When omitted, the values obtained from the MIB (isfexVmInterfaceTable) specific to the IPCOM VX are configured. Specify the values only when using IPCOM VA. (*14)	Optional	Optional	Optional	Optional	Yes
Link information (Links) (*6)	Link information destination	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	Optional	Yes (*1)

Link information registration mode (Mode)	Link information registration mode	Specify the registration mode of the link information.
		
		Specify one of following items.
		  - add
		    New registration
			Not possible	Not possible	Optional	Optional	No

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
		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.					
Link (Link)	Link definition (This cannot be omitted when specifying link information)	Specify the Devices element once.	Not possible	Not possible	Option al	Option al	Yes (*1)
Device information (Devices)	Definition of device information (This cannot be omitted when specifying links)	Specify the Device element twice.	Not possible	Not possible	Option al	Option al	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	Option al (*10)	Option al (*10)	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	Specify the type of the device. Specify one of following items. - netdevice Represents a network device. - server Represents a server. - virtual Represents a virtual appliance. If left blank, "netdevice" is specified.	Not possible	Not possible	Option al	Option al	Yes

Element Name	Description	Remarks (Possible Values, Examples)	Specification				Output Using Export
			Individual Registration	Individual Modification	Batch Registration	Batch Modification	
Connection port name of device (Port)	Connection port name of device	Specify a character string. - When device type is "netdevice" Specify the port name of the network device. For the procedure to confirm port names, refer to "7.7.3 Creating Network Configuration Information (XML Definition)" in the "Design Guide VE". - When device type is "server" Specify the server NIC number. Specify the NIC number of a rack mount server or a tower server. The NIC number is defined in the 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	Optional (*10)	Optional (*10)	Yes
Connection port name of device (for display) (NicIndex)	Connection port name of device (for display)	Specify an integer. When the device type is "server" and you want to display the link information on the [Resource Details] tab of the ROR console and NetworkViewer, specify the index of the physical NIC displayed in the resource details of the corresponding physical server. If an index that is not registered is specified, an error will occur.	Not possible	Not possible	Optional (*10)	Optional (*10)	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 elements are defined under that element.

*2: The element is output only when values are specified 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: Account information for network device models satisfying all of the following conditions can be confirmed.

Vendor Name	Model Name	Prompt Type	Prompt Character
Fujitsu	SR-X Ethernet Fabric (*)	Login prompt	Login:
		Password prompt	Password:
		Command prompt	*Arbitrary_character_string*#
			Arbitrary_character_string>
	IPCOM EX IPCOM VX IPCOM VA	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>
F5 Networks	BIG-IP	Login prompt Password prompt Command prompt	There are no particular restrictions.

The command prompt treats the *arbitrary character string* and the "#" or ">" that follows it as a prompt character string.

The model name of the BIG-IP LTM series is treated as being "BIG-IP".

*: Fujitsu PRIMERGY Converged Fabric Switch Blade (10Gbps 18/8+2) or Fujitsu Converged Fabric Switch.

*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: Required when *Type* (Type) is "Fabric" and *Fabric type* is "C-Fabric".

*8: Required when specifying "SNMP" for the *monitoring method* (Method).

*9: Required when specifying the login information (LoginInfos).

*10: Required when specifying the device information (Devices). However, when the device type is "server", either one or both of the *Connection Port Name of Device* (Port) and the *Connection Port Name of Device (for display)* (NicIndex) must be specified.

*11: Indicates linkaggregation*Domain ID to which the Link Aggregation Port Belongs_Link Aggregation Group Number (Last Number of ifDescr)*.

*12: When specifying "Fabric" for *type* (Type) and "C-Fabric" for *Fabric type*, port information cannot be registered using this definition.

*13: Required when specifying port information (Ports).

*14: For the settings specific to the IPCOM VA series, refer to "7.7.3 Creating Network Configuration Information (XML Definition)" in the "Design Guide VE".

*15: Output when *Type* (Type) is "Fabric" and *Fabric type* is "C-Fabric".

💡 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>
  <Redundancy group_id="1"></Redundancy>
  <MgmtInfos>
    <Snmps>
      <ReadCommunity>public</ReadCommunity>
    </Snmps>
    <LoginInfos>
      <LoginInfo protocol="telnet" auth_type="local password" authority="admin" check="true">
        <User>user</User>
        <Password>password</Password>
        <PrivilegedPassword>root_password</PrivilegedPassword>
        <PasswordEncryption>false</PasswordEncryption>
      </LoginInfo>
    </LoginInfos>
    <Monitoring>
      <Methods>
        <Method>ping</Method>
        <Method>SNMP</Method>
      </Methods>
      <Interval>300</Interval>
      <RetryCount>5</RetryCount>
      <Timeout>60</Timeout>
    </Monitoring>
    <MgmtURL>https://192.168.5.11</MgmtURL>
  </MgmtInfos>
</Netdevice>
```

- When creating multiple network devices in one operation:

```xml
<?xml version="1.0" encoding="utf-8"?>
<NetConfig>
<Netdevices>
  <Mode>add</Mode>
  <Netdevice ip="192.168.5.11" name="Switch1">
    <Location>B1F</Location>
    <Types>
      <Type>L2-Switch</Type>
    </Types>
    <Maintenance>false</Maintenance>
    <Redundancy group_id="1"></Redundancy>
    <MgmtInfos>
      <Snmps>
        <ReadCommunity>public</ReadCommunity>
      </Snmps>
      <LoginInfos>
        <LoginInfo protocol="telnet" auth_type="local password" authority="admin"
check="true">
          <User>user</User>
          <Password>password</Password>
          <PrivilegedPassword>root_password</PrivilegedPassword>
          <PasswordEncryption>false</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring>
        <Methods>
          <Method>ping</Method>
```

```xml
          <Method>SNMP</Method>
        </Methods>
        <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>
    <Redundancy group_id="2"></Redundancy>
    <MgmtInfos>
      <Snmps>
        <ReadCommunity>public</ReadCommunity>
      </Snmps>
      <LoginInfos>
        <LoginInfo protocol="telnet" auth_type="local password" authority="admin"
check="true">
          <User>user</User>
          <Password>password</Password>
          <PrivilegedPassword>root_password</PrivilegedPassword>
          <PasswordEncryption>false</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring>
        <Methods>
          <Method>ping</Method>
          <Method>SNMP</Method>
        </Methods>
        <Interval>300</Interval>
        <RetryCount>5</RetryCount>
        <Timeout>60</Timeout>
      </Monitoring>
      <MgmtURL>https://192.168.5.10:82</MgmtURL>
    </MgmtInfos>
  </Netdevice>
  <Netdevice ip="192.168.5.20" name="SLB1">
    <Location>B1F</Location>
    <Types>
      <Type>SLB</Type>
    </Types>
    <Maintenance>false</Maintenance>
    <Redundancy group_id="3"></Redundancy>
    <MgmtInfos>
      <Snmps>
        <ReadCommunity>public</ReadCommunity>
      </Snmps>
      <LoginInfos>
        <LoginInfo protocol="telnet" auth_type="local password" authority="admin"
check="true">
          <User>user</User>
          <Password>password</Password>
          <PrivilegedPassword>root_password</PrivilegedPassword>
          <PasswordEncryption>false</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring>
        <Methods>
```

```xml
          <Method>ping</Method>
          <Method>SNMP</Method>
        </Methods>
        <Interval>300</Interval>
        <RetryCount>5</RetryCount>
        <Timeout>60</Timeout>
      </Monitoring>
      <MgmtURL>https://192.168.5.20:82</MgmtURL>
    </MgmtInfos>
  </Netdevice>
  <Netdevice ip="192.168.5.30" name="IPCOMEXIN1">
    <Location>B1F</Location>
    <Types>
      <Type>Firewall</Type>
      <Type>SLB</Type>
    </Types>
    <Maintenance>false</Maintenance>
    <Redundancy group_id="4"></Redundancy>
    <MgmtInfos>
      <Snmps>
        <ReadCommunity>public</ReadCommunity>
      </Snmps>
      <LoginInfos>
        <LoginInfo protocol="telnet" auth_type="local password" authority="admin"
check="true">
          <User>user</User>
          <Password>password</Password>
          <PrivilegedPassword>root_password</PrivilegedPassword>
          <PasswordEncryption>false</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring>
        <Methods>
          <Method>ping</Method>
          <Method>SNMP</Method>
        </Methods>
        <Interval>300</Interval>
        <RetryCount>5</RetryCount>
        <Timeout>60</Timeout>
      </Monitoring>
      <MgmtURL>https://192.168.5.30:82</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>
```

- When creating Ethernet Fabric (Converged Fabric), IPCOM VX, and IPCOM VA network devices:

```
<?xml version="1.0" encoding="utf-8"?>
<NetConfig>
<Netdevices>
<Netdevice ip="172.16.3.3" name="cfab1">
  <Types>
    <Type>Fabric</Type>
  </Types>
  <FabricType>C-Fabric</FabricType>
  <ApplianceType>physical</ApplianceType>
  <Maintenance>false</Maintenance>
  <MgmtInfos>
    <Snmps>
      <ReadCommunity>public</ReadCommunity>
    </Snmps>
    <LoginInfos>
      <LoginInfo protocol="ssh" auth_type="local password" authority="user" check="true">
        <User>user</User>
        <Password>password</Password>
        <PrivilegedPassword>root_password</PrivilegedPassword>
        <PasswordEncryption>false</PasswordEncryption>
      </LoginInfo>
    </LoginInfos>
    <Monitoring>
      <Methods>
        <Method>ping</Method>
        <Method>SNMP</Method>
      </Methods>
      <Interval>300</Interval>
      <RetryCount>3</RetryCount>
      <Timeout>30</Timeout>
    </Monitoring>
  </MgmtInfos>
</Netdevice>
<Netdevice ip="172.16.1.52" name="ipcomvx1">
  <Types>
    <Type>ManagementHost</Type>
  </Types>
  <ApplianceType>physical</ApplianceType>
  <Maintenance>false</Maintenance>
  <MgmtInfos>
    <Snmps>
      <ReadCommunity>public</ReadCommunity>
    </Snmps>
    <LoginInfos>
      <LoginInfo protocol="telnet" auth_type="local password" authority="user" check="true">
        <User>user</User>
        <Password>password</Password>
        <PrivilegedPassword>root_password</PrivilegedPassword>
        <PasswordEncryption>false</PasswordEncryption>
      </LoginInfo>
    </LoginInfos>
    <Monitoring>
      <Methods>
        <Method>SNMP</Method>
      </Methods>
      <Interval>300</Interval>
```

```xml
      <RetryCount>3</RetryCount>
      <Timeout>30</Timeout>
    </Monitoring>
    <MgmtURL>http://172.16.1.52</MgmtURL>
  </MgmtInfos>
</Netdevice>
<Netdevice ip="172.16.1.53" name="ipcomva11">
  <Types>
    <Type>Firewall</Type>
  </Types>
  <ApplianceType>virtual</ApplianceType>
  <Maintenance>false</Maintenance>
  <ManagementHost>172.16.1.52</ManagementHost>
  <Redundancy group_id="va1"></Redundancy>
  <MgmtInfos>
    <Snmps>
      <ReadCommunity>public</ReadCommunity>
    </Snmps>
    <LoginInfos>
      <LoginInfo protocol="telnet" auth_type="local password" authority="user" check="true">
        <User>user</User>
        <Password>password</Password>
        <PrivilegedPassword>root_password</PrivilegedPassword>
        <PasswordEncryption>false</PasswordEncryption>
      </LoginInfo>
    </LoginInfos>
    <Monitoring>
      <Methods>
        <Method>SNMP</Method>
      </Methods>
      <Interval>300</Interval>
      <RetryCount>3</RetryCount>
      <Timeout>30</Timeout>
    </Monitoring>
    <MgmtURL>http://172.16.1.53</MgmtURL>
  </MgmtInfos>
  <Ports>
    <Port name="LAN0.0">
      <StagId>110</StagId>
    </Port>
    <Port name="LAN0.1">
      <StagId>110</StagId>
    </Port>
    <Port name="LAN0.2">
      <StagId>110</StagId>
    </Port>
    <Port name="LAN0.3">
      <StagId>100</StagId>
    </Port>
  </Ports>
</Netdevice>
<Netdevice ip="172.16.1.54" name="ipcomva12">
  <Types>
    <Type>Firewall</Type>
  </Types>
  <ApplianceType>virtual</ApplianceType>
  <Maintenance>false</Maintenance>
  <ManagementHost>172.16.1.52</ManagementHost>
  <Redundancy group_id="va2"></Redundancy>
  <MgmtInfos>
    <Snmps>
      <ReadCommunity>public</ReadCommunity>
    </Snmps>
```

```xml
      <LoginInfos>
        <LoginInfo protocol="telnet" auth_type="local password" authority="user" check="true">
          <User>user</User>
          <Password>password</Password>
          <PrivilegedPassword>root_password</PrivilegedPassword>
          <PasswordEncryption>false</PasswordEncryption>
        </LoginInfo>
      </LoginInfos>
      <Monitoring>
        <Methods>
          <Method>SNMP</Method>
        </Methods>
        <Interval>300</Interval>
        <RetryCount>3</RetryCount>
        <Timeout>30</Timeout>
      </Monitoring>
      <MgmtURL>http://172.16.1.54</MgmtURL>
    </MgmtInfos>
    <Ports>
      <Port name="LAN0.0">
        <StagId>120</StagId>
      </Port>
      <Port name="LAN0.1">
        <StagId>120</StagId>
      </Port>
      <Port name="LAN0.2">
        <StagId>120</StagId>
      </Port>
      <Port name="LAN0.3">
        <StagId>100</StagId>
      </Port>
    </Ports>
  </Netdevice>
</Netdevices>
<Links>
  <Link>
    <Devices>
      <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
        <Port>LAN0.0</Port>
      </Device>
      <Device ip="172.16.3.3" kind="netdevice" name="cfab1">
        <Port>3/1/0/11</Port>
      </Device>
    </Devices>
  </Link>
  <Link>
    <Devices>
      <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
        <Port>lan0.1</Port>
      </Device>
      <Device ip="172.16.3.3" kind="netdevice" name="cfab1">
        <Port>3/1/0/12</Port>
      </Device>
    </Devices>
  </Link>
  <Link>
    <Devices>
      <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
        <Port>LAN0.2</Port>
      </Device>
      <Device ip="172.16.3.3" kind="netdevice" name="cfab1">
        <Port>3/1/0/13</Port>
      </Device>
```

```xml
      </Devices>
    </Link>
    <Link>
      <Devices>
        <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
          <Port>LAN0.3</Port>
        </Device>
        <Device ip="172.16.3.3" kind="netdevice" name="cfab1">
          <Port>3/1/0/14</Port>
        </Device>
      </Devices>
    </Link>
    <Link>
      <Devices>
        <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
          <Port>LAN1.0</Port>
        </Device>
        <Device ip="172.16.3.3" kind="netdevice" name="cfab1">
          <Port>3/1/0/15</Port>
        </Device>
      </Devices>
    </Link>
    <Link>
      <Devices>
        <Device ip="172.16.1.53" kind="virtual" name="ipcomva11">
          <Port>LAN0.0</Port>
        </Device>
        <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
          <Port>LAN0.0</Port>
        </Device>
      </Devices>
    </Link>
    <Link>
      <Devices>
        <Device ip="172.16.1.53" kind="virtual" name="ipcomva11">
          <Port>lan0.1</Port>
        </Device>
        <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
          <Port>lan0.1</Port>
        </Device>
      </Devices>
    </Link>
    <Link>
      <Devices>
        <Device ip="172.16.1.53" kind="virtual" name="ipcomva11">
          <Port>LAN0.2</Port>
        </Device>
        <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
          <Port>LAN0.2</Port>
        </Device>
      </Devices>
    </Link>
    <Link>
      <Devices>
        <Device ip="172.16.1.53" kind="virtual" name="ipcomva11">
          <Port>LAN0.3</Port>
        </Device>
        <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
          <Port>LAN0.3</Port>
        </Device>
      </Devices>
    </Link>
    <Link>
```

```
        <Devices>
          <Device ip="172.16.1.54" kind="virtual" name="ipcomva12">
            <Port>LAN0.0</Port>
          </Device>
          <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
            <Port>LAN0.0</Port>
          </Device>
        </Devices>
      </Link>
      <Link>
        <Devices>
          <Device ip="172.16.1.54" kind="virtual" name="ipcomva12">
            <Port>lan0.1</Port>
          </Device>
          <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
            <Port>lan0.1</Port>
          </Device>
        </Devices>
      </Link>
      <Link>
        <Devices>
          <Device ip="172.16.1.54" kind="virtual" name="ipcomva12">
            <Port>LAN0.2</Port>
          </Device>
          <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
            <Port>LAN0.2</Port>
          </Device>
        </Devices>
      </Link>
      <Link>
        <Devices>
          <Device ip="172.16.1.54" kind="virtual" name="ipcomva12">
            <Port>LAN0.3</Port>
          </Device>
          <Device ip="172.16.1.52" kind="netdevice" name="ipcomvx1">
            <Port>LAN0.3</Port>
          </Device>
        </Devices>
      </Link>
    </Links>
  </NetConfig>
```

- When creating a single VCS:

```
<?xml version="1.0" encoding="utf-8"?>
<Netdevice ip="192.168.5.11" name="VCS">
  <Location>B1F</Location>
  <Types>
    <Type>Fabric</Type>
  </Types>
  <FabricType>VCS</FabricType>
  <Maintenance>false</Maintenance>
  <MgmtInfos>
    <LoginInfos>
      <LoginInfo protocol="netconf" check="true">
        <User>admin</User>
        <Password>password</Password>
      </LoginInfo>
    </LoginInfos>
    <Monitoring>
      <Methods>
        <Method>NETCONF</Method>
      </Methods>
```

```
        <Interval>300</Interval>
        <RetryCount>5</RetryCount>
        <Timeout>60</Timeout>
      </Monitoring>
    </MgmtInfos>
  </Netdevice>
```

. . . .

8.1.2 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

- Group ID

- SNMP Information

- Login Information

- Monitoring Information

- Web Management Window URL

- Port Information and S-TAG ID

If defining multiple elements, they will be modified at the same time.
When performing batch modification, ensure the admin IP address is defined to identify the target resources for modification. 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 use of the device 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 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="Modified protocol" 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>
  <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>
  <Methods>
    <Method>Monitoring Method After Modification</Method>
  </Methods>
  <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>
```

- Modifying the port information and S-TAG ID

```
<Ports>
  <Port name="Port Name">
    <StagId>New S-TAG ID</StagId>
  </Port>
</Ports>
```

· ·

Information

· ·

- Type information cannot be modified when the target network device for modification has been registered as "Fabric" or "ManagementHost".
  In order to change the type information of the target network device from "Fabric" or "ManagementHost" to something else, unregister the network device and then re-register it.

- Type information of network devices which are already registered cannot be changed to "Fabric" or "ManagementHost".
  In order to change the type information of the target network device to "Fabric" or "ManagementHost", unregister the network device first and then re-register it.

- Redundancy configuration information cannot be modified when there is a firewall or server load balancer deployed for the network device to be modified.

- When modifying login information, all existing login information is replaced.
  All registered login information is deleted.

- When modifying port information, all existing port information is replaced.

   If there is nothing specified, port information will be deleted.

   However, the port information obtained from devices will not be modified even if there is nothing specified.

....- 119 -..

8.2 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 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 8.2 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 ("-").
Vendor number (*2) (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 ("-").
Type information	Type information	Specify one or more Type elements.

Element Name	Description	Remarks (Possible Values, Examples)
(Types)	(optional)	
Type (*3) (Type)	Type (This cannot be omitted when specifying type information)	Specify the type of the network device. - L2-Switch - Firewall - SLB
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 ("-").
Type information (Types)	Type information (optional)	Specify one or more Type elements.
Type (*3) (Type)	Type (This cannot be omitted when specifying type information)	Specify the type of the network device. - L2-Switch - Firewall - SLB
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. **📖 Example** · This example shows checking using the snmpwalk command. `>snmpwalk -v 1 -c [`*SNMP community name*`] -On [`*IP address*`] sysObjectID` sysObjectID is displayed in the following format: `.1.3.6.1.2.1.1.2.0 = OID: .[sysObjectID]` When specifying the sysObjectID displayed in the command above, exclude the period (".") which is the first character of the command. ·

*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: 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

Vendor Name	Organization name registered in IANA	Vendor Number
	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
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

*3: 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>
```

Information

It is not necessary to specify supported device models in network device model definitions because model information is obtained automatically.

The values of Vendor elements, ProductName elements, ModelName elements, and Type elements of the network configuration information are used for the vendor name, device name, model name, and type of the network device preferentially.

If the Vendor elements, ProductName elements, ModelName elements, or Type elements are not specified in the XML definition of the network configuration information, identify the vendor name, device name, model name, or type from the model definition file.

In the model definition file, the vendor name, device name, model name, and type of a network device are identified using the OID character string specified in the SysObjectId element in the Model element.

- The model definition file of the network device is searched from the top.
  The value of the name attribute of the Model element is the device name, the value of the Product element is the unit name, the value of the Vendor element is the vendor name, and the value of the Type element is the type of sysObjectID which has been matched first.

- If no matching 0ID character string is found in the model definition file of the network device, it is taken as meaning the network device has no vendor name, device name, model name, or type.

Appendix A GUI/CLI

This appendix provides references for operation using the GUI/CLI based on functions.

Table A.1 Network Devices

Function	Operations	
	GUI	CLI
Creating network devices	No	"3.3 rcxadm netdevice" create
Viewing lists	Operate using the [Resource List] tab explained in "A. 5 [Resource List] Tab" in the "User's Guide VE".	"3.3 rcxadm netdevice" list
Viewing detailed information	Operate using the [Resource Details] tab explained in "A.6 [Resource Details] Tab" in the "User's Guide VE".	"3.3 rcxadm netdevice" show
Modifying basic information	No	"3.3 rcxadm netdevice" modify
Deleting network devices	"11.4.2 Deleting LAN Switches and Network Devices" in the "User's Guide VE"	"3.3 rcxadm netdevice" delete
Maintenance mode settings	"20.1 Switchover of Maintenance Mode" in the "User's Guide VE"	"3.3 rcxadm netdevice" set
Import	No	"3.2 rcxadm netconfig" import
Export	No	"3.2 rcxadm netconfig" export

Index