

FUJITSU Software

ServerView Resource Orchestrator

Virtual Edition V3.2.0

User's Guide

Windows/Linux

J2X1-7606-07ENZ0(09)
December 2016

Preface

Purpose of This Document

This manual provides an outline of the operation method of the ROR console provided by FUJITSU Software ServerView Resource Orchestrator Virtual Edition (hereinafter Resource Orchestrator).

Intended Readers

This manual is written for people who will install Resource Orchestrator.

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:

[Chapter 1 Login and Logout](#)

Explains how to log in and out of the ROR console.

[Chapter 2 Home](#)

Explains the ROR Console Home window display.

[Chapter 3 Resource Management Overview](#)

Provides an overview of the two views available in Resource Orchestrator.

[Chapter 4 License Setup and Confirmation](#)

Explains license setup.

[Chapter 5 Managing User Accounts](#)

Explains how to register, modify, and delete user accounts.

[Chapter 6 BladeViewer](#)

Provides an overview of BladeViewer and explains its features.

[Chapter 7 Registering Resources](#)

Explains how to register the resources used by Resource Orchestrator.

[Chapter 8 Changing Admin Server Settings](#)

Explains how to change the settings of the admin server.

[Chapter 9 Changing Resources](#)

Explains how to change settings for the admin server or resources registered on the admin server.

[Chapter 10 Configuring the Operating Environments of Managed Servers](#)

Explains how to install software to the registered managed servers and set up their operating environment.

[Chapter 11 Deleting Resources](#)

Explains how to delete resources.

[Chapter 12 Pre-configuration for Resource Registration and Modification](#)

Provides an overview of the pre-configuration function and explains how to use system configuration files.

[Chapter 13 NetworkViewer](#)

Provides an overview of the NetworkViewer and explains its features.

Chapter 14 Power Control

Explains how to remotely control the power state of managed resources.

Chapter 15 Control of VM Environments

Explains the features specific to VM guests and VM hosts.

Chapter 16 Backup and Restore

Explains how to use the backup and restore functions provided in Resource Orchestrator.

Chapter 17 Cloning [Physical Servers]

Explains how to use the server cloning function.

Chapter 18 Settings for Server Switchover

Explains the settings and usage of the server switchover function.

Chapter 19 Collecting Power Consumption Data and Displaying Graphs

Explains how to export the power consumption data collected from registered power monitoring targets and how to display it as graphs, and also describes the exported data's format.

Chapter 20 Network Device Operations

Explains how to operate network devices.

Appendix A User Interface

Provides an overview of the ROR console GUI.

Appendix B Format of CSV System Configuration Files

Explains the format of the CSV system configuration files used by Resource Orchestrator's pre-configuration function.

Appendix C Maintenance Mode

Explains the maintenance mode available in Resource Orchestrator and how to use it.

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

Abbreviation	Products
	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
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)

Abbreviation	Products
	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)
	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

Abbreviation	Products
	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) 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)

Abbreviation	Products
	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)
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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)

Abbreviation	Products
RHEL5-Xen	Red Hat(R) Enterprise Linux(R) 5.4 (for x86) Linux Virtual Machine Function Red Hat(R) Enterprise Linux(R) 5.4 (for Intel64) Linux Virtual Machine Function
RHEL-KVM	Red Hat(R) Enterprise Linux(R) 6.1 (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 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

Abbreviation		Products
		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
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

Abbreviation	Products
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
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)

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

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Chapter 1 Login and Logout

This chapter describes how to open and close the ROR console.

Preparations

Before opening the ROR console, be sure to read the following instructions and restrictions.

- When accessing the ROR console, be sure to enable the Compatibility View in Internet Explorer. Select [View]-[Encoding] in Internet Explorer, and check if [Auto-Select] is checked. If [Auto-Select] is not checked, select it.
- When downloading files using the ROR console, it is necessary to disable [Do not save encrypted pages to disk] in the Advanced Settings of the browser.
- The ROR console uses the Web browser's standard fonts and is designed to be viewed in a window of 1024 by 768 pixels or larger. When using a monitor with a higher resolution than this, it is recommended to enlarge the screen size. If the Web browser is resized by a significant amount, the display quality may deteriorate.
- The ROR console uses JavaScript, Active Script, Cookies, and IFRAMES. These must be enabled in the Web browser settings before using the ROR console. Use TLS 1.0.
- Specify either one of the following for the Web browser pop-up blocker:
 - Disable the pop-up blocker
 - Add the URL of the ROR Console to the **Address of web site to allow** setting. Check with the system administrator for the URL of the ROR Console.
- Surrogate pair characters cannot be used on the ROR Console.
- When opening the ROR console right after launching a Web browser, a warning window concerning the site's security certificate will be displayed.

The following message is displayed: "There is a problem with this web site's security certificate.". This warns the user that Resource Orchestrator uses a self-signed certificate to encrypt its HTTPS (SSL) communication with the Web browser. Resource Orchestrator generates a unique, self-signed certificate for each admin server during manager installation. Within a firewall-protected intranet, a network where the risk of identity theft is low, or where all correspondents are trusted, there is no risk in using self-signature certificates for communications. Accept the warning to display the Resource Orchestrator login screen. The login screen can be displayed by selecting the following option: "Continue to this web site (not recommended).".
- The background of the address bar will become red and the words "Certificate Error" will be displayed on the right side of the address bar of the login screen, the ROR console, and BladeViewer.

Furthermore, the Phishing Filter may show a warning on the status bar. These warnings are referring to the same self-signed certificate issue discussed in the previous bullet. It is safe to continue with the current browser settings.
- To stop displaying the security certificate warning screen and the certificate error icon, create a certificate associated with the IP address or hostname of the admin server and add it to the Web browser.

Refer to "Appendix B HTTPS Communications" in the "Design Guide VE" for details.
- In environments where the admin server is Windows, and multiple IP addresses are used, when a login window with a different URL from the address bar's URL in which the IP address or host name (FQDN) is specified, the warning may not disappear. Also, the following may occur.

- The login window is not displayed
- A certificate error occurs even though the certificate is registered

Use the following procedure as the corrective action for the above.

- For Windows Server 2008

Set a higher priority for binding of the network adapter used on the admin LAN than for other network adapters.



Example

When changing the order of priority of network adapter binding in Microsoft(R) Windows Server(R) 2008 R2 Enterprise

1. Click the [Start] button, and then click [Control Panel].
2. When [Network and Internet] is displayed, click this item.
When [Network and Internet] is not displayed, proceed to the next step without clicking.
3. Click [Network and Sharing Center], and click [Change adapter settings] in the left side of the window.
4. Click [Advanced Settings] in the [Advanced] menu.
When the [Advanced] menu is not displayed, push the [Alt] key.
5. From the list of [Connections] in the [Adapters and Bindings] tab, click the target network adapter, and the "Up" or "Down" buttons to change the order of priority of connections.
6. Click the [OK] button.

- For Windows Server 2012 or later

Set the interface metric value smaller than any other interfaces used by the admin server.
The metric values of each interface can be checked by using the "netstat -r" command.



Example

For Microsoft(R) Windows Server(R) 2012 Standard

1. Press the [Windows Logo] + [R] keys.
The [Run] dialog is displayed.
2. Enter "ncpa.cpl", and click the [OK] button.
3. Right-click [Network Interface], and click [Properties].
4. Click [Internet Protocol Version 4(TCP/IPv4)], and then click [Properties].
5. Click [Advanced] on the [General] tab.
6. Clear the [Automatic metric] checkbox on the [IP Settings] tab, and enter the metric [Interface metric] field.

- When opening the ROR console with Firefox, read the following additional instructions and restrictions.
 - Confirm that the "Allow pages to choose their own fonts, instead of my selections above" is checked in the [Advanced] setting in [Options]-[Content]-[Fonts & Colors]. If it is not checked, check it.
 - The ROR console uses JavaScript, Cookies, and IFRAMES. These must be enabled in the Web browser settings before using the ROR console. In addition, ensure that TLS 1.0 is enabled in the Web browser settings as the ROR Console uses TLS 1.0.
 - Specify either one of the following for the Web browser pop-up blocker:
 - Disable the pop-up blocker
 - Add the URL of the ROR Console to the [Address of web site to allow] setting.
Check with the system administrator for the URL of the ROR Console.
 - Create a certificate associated with the IP address or hostname of the admin server and add it to the Web browser.
Refer to "Appendix B HTTPS Communications" in the "Design Guide VE" for details.

Opening the ROR Console

This section explains how to access the ROR console.

Add the URL of the ROR console to the "Trusted sites" of the browser.

Start a Web browser from an admin client and specify the URL of the ROR console for connection.

If the port number was changed, specify the new port number.

When Single Sign-On has been configured, the login window for Single Sign-On is displayed.

However, when Single Sign-On authentication has already been performed, the ROR console can be started without displaying the login

window.

When Single Sign-On is not configured, the login window for Resource Orchestrator will be displayed.

For details on Single Sign-On, refer to "Chapter 10 Configuring Single Sign-On" in the "Design Guide VE".

```
URL: https://Admin_server_IP_address:23461/
```

On a Windows admin server, the ROR console can also be opened by selecting [start]-[All Programs]-[Fujitsu]-[Resource Orchestrator]-[ROR console].

Note

- If the login screen is not displayed, check that the following settings are correct.
 - URL entered in address bar of the Web browser.
 - The proxy settings of the Web browser are correct.
 - The firewall settings on the admin server are correct.
- If already logged in from another Web browser window, login may be performed automatically (without displaying the login screen).

Login

In the login screen, enter the following items, and click the [Login] button.

The ROR console or BladeViewer is displayed after a successful login.

- User ID
- Password

However, opening multiple Web browsers from an already opened browser window (e.g. using the [File]-[New Window] menu from a Web browser) may disable logging in as a different user.

To log in as a different user, start up a new Web browser from the Windows start menu.

Information

- During installation, enter the following user account name and password.
 - When Single Sign-On is configured
The name of the user account and password used for ServerView Operations Manager
 - When Single Sign-On is not configured
The user name and password of the user account specified in "2.1 Manager Installation" in the "Setup Guide VE".
- When logging in for the first time, the ROR console is displayed.
However, when Single Sign-On is configured, the ROR console is always displayed.
- Opening the ROR console in multiple Web browsers may not allow multi-user login.
To log in as a different user, start up a new Web browser from the Windows start menu.
- When logging in for the first time, the [Home] tab is displayed. When logging in for the second time and successive times, the tab that was displayed at the last login is displayed.
It is also possible for each user to set whether the [Home] tab is to be displayed at login. To change the option, click "Options" in the upper right corner of the ROR Console.

Logout

To log out, select "Logout" in the global header, and click the [OK] button in the confirmation dialog.

Note

- If the Web browser is closed without logging out first, user authentication may be skipped the next time Resource Orchestrator is accessed. In that case, users will be automatically logged in using the previously used session. It is advised that the users log out properly after using the ROR console or BladeViewer.
- If the ROR console or BladeViewer has been opened simultaneously in several Web browser windows, those login sessions may be terminated.

Exit

To exit the ROR console, simply close the Web browser window.

Chapter 2 Home

This chapter explains the ROR Console Home window.

When the ROR Console is started, the Home window is displayed. Refer to "[Chapter 1 Login and Logout](#)" for information on how to start the ROR Console.

The elements of the Home window are explained below.

- Functions list

The functions list displays the items that can be operated using ROR Console tabs.

Click the triangle icon next to the Function list to toggle Display/Hide.

- Information

Information from the Special Administrator and Infrastructure Administrator is displayed.

2.1 Editing the Home Messages

This section explains how to edit the messages that are shown in the lower section of the home window of the ROR console.

Information can be edited from the ROR console using the following procedure:

1. Click [Edit] on the upper-right side of the table.
2. The [Edit - Information] window is displayed.

To add information, click [Add] on the [Edit - Information] window.

To perform other operations, select information from the list, and then click [Move up] / [Move down], [Edit], or [Delete].

Click [Save] to save the changes after operations have been completed.

Adding Information

This section explains how to add information.

Perform the following procedure to add information.

- a. Click [Add] on the [Edit - Information] window.

The [Add entry] dialog is displayed.

- b. Set the following items:

Schedule

There is no specified format.

When not displaying the date, leave this field blank.

Enter up to 30 alphanumeric characters or symbols. Commas (",") cannot be used.

Messages

Enter up to 250 alphanumeric characters or symbols.

- c. Click the [OK] button.

The entered information is added.

Editing Information

This section explains how to edit information.

Perform the following procedure to edit information:

- a. Select the information to edit from the list.

- b. Click [Edit].

The [Edit entry] dialog is displayed.

- c. Set the following items:

Schedule

There is no specified format.

When not displaying the date, leave this field blank.

Enter up to 30 alphanumeric characters or symbols. Commas (",") cannot be used.

Messages

Enter up to 250 alphanumeric characters or symbols.

- d. Click the [OK] button.

The information is updated.

Moving Information

This section explains how to move information in the list.

Perform the following procedure to move information:

- a. Select the information to move from the list.
- b. Click [Move up] or [Move down].

The selected information is moved up or down one line.

Deleting Information

This section explains how to delete information.

Perform the following procedure to delete information:

- a. Select the information to delete from the list.
- b. Click [Delete].

The [Delete entry] dialog is displayed.

- c. Click [Yes].

The selected information is deleted.

- 3. Click [Save] to save the changes after operations have been completed.

Click [Cancel] to discard the changes and return to the [Information] window.



.....
These messages can be used to inform all users of contact and enquiry information.
.....

Chapter 3 Resource Management Overview

This chapter provides an overview of the two views available on the [Resource] tab in Resource Orchestrator.

Resource Orchestrator provides two different GUIs on the [Resource] tab: the default window and BladeViewer. Choosing an appropriate GUI depends on the administrator's authority level, or the kind of operations to be performed.

- ROR console

The ROR console gives access to all functions of Resource Orchestrator.

- BladeViewer

BladeViewer offers a simplified, lifelike representation of blade servers and their statuses. While this enables intuitive operation, it does not include the tree-based navigation or detailed menus available in the [Resource] tab of the ROR console.

BladeViewer makes it easier to monitor blade servers, visualize their hosted applications, and perform power operations. This makes BladeViewer suitable for administrators who only need to monitor blades and perform basic operations.

To switch the view of the [Resource] tab from the default window to BladeViewer, click [BladeViewer>>]. To switch the view of the [Resource] tab from BladeViewer to the default window, click [Advanced>>].



Information

- All descriptions about the user interface other than those in "[Chapter 6 BladeViewer](#)" apply to the default window.
- For details on the [Resource] tab of the ROR console, refer to "[Appendix A User Interface](#)".
- For details on BladeViewer, refer to "[Chapter 6 BladeViewer](#)". This explains the BladeViewer screen and the functions that it provides.
- When logging in for the first time, the ROR console is displayed.
Otherwise, the last view used before logging out (either the ROR console or BladeViewer) is displayed.

Chapter 4 License Setup and Confirmation

This chapter explains how to configure and confirm licenses.

License Setup

When using Resource Orchestrator, it is necessary to configure the license first.

Use the following procedure to configure the license:

1. After logging in to Resource Orchestrator, select [Tools]-[Licenses] from the menu, and click the [Add] button in the displayed dialog.

The [Register License] dialog is displayed.

2. In the [Register License] dialog, enter the license key to register.
3. Click the [OK] button.

The license will be registered.

When using a command, execute the `rcxadm license` command.

For details on the `rcxadm license` command, refer to "5.10 `rcxadm license`" in the "Reference Guide (Command) VE".

Confirming the License

Use the following procedure to confirm the registered license:

1. After logging in to Resource Orchestrator, select [Tools]-[Licenses] from the menu, and click the license name in the displayed dialog.

The [Licenses] dialog is displayed.

When using a command, execute the `rcxadm license` command.

For details on the `rcxadm license` command, refer to "5.10 `rcxadm license`" in the "Reference Guide (Command) VE".



Point

When "-" is displayed for "NUMBER_OF_LICENSES", the same number of agents as purchased licenses can be used.

Chapter 5 Managing User Accounts

This chapter explains how to register, modify, and delete user accounts.

Add User Account

Only privileged users can perform this operation.

When using Single-Sign-On, register user information in ServerView Operations Manager beforehand.

1. From the ROR console menu, select [Settings]-[User Accounts].

The [User Accounts] dialog is displayed.

2. Click the [Add] button.

The [Add User Account] dialog is displayed.

3. Set the following:

User ID

Enter a character string beginning with an alphanumeric character and containing up to 16 alphanumeric characters, underscores ("_"), hyphens ("-"), and periods (".").

Note that user names are case-sensitive.

Password (Confirm password)

- When using Single-Sign-On

Enter a string using alphanumeric characters or symbols in the range of 8 to 64 characters.

- When not using Single-Sign-On

Enter a string using up to 16 alphanumeric characters or symbols.

Authority Level

Select either "Manage" or "Monitor". There must be at least one privileged user.

4. Click the [OK] button.

The user account is created.

Change User Account Settings

Both privileged users and general users can perform this operation.

Privileged users can modify any account information. General users can only modify their own password.

1. From the ROR console menu, select [Settings]-[User Accounts].

The [User Accounts] dialog is displayed.

2. Select the user account to modify, and click [Change].

The [Change User Account] dialog is displayed.

3. Set the following:

Password

No change/Change

Select the appropriate action.

By default, the "No change" option is selected.

Current password

Enter a string using up to 16 alphanumeric characters or symbols.

This is displayed when general users modify their own passwords.

New password (Confirm password)

Enter a string using up to 16 alphanumeric characters or symbols.

Authority Level

No change/Change

Select the appropriate action.

By default, the "No change" option is selected.

Authority level

Select either "Manage" or "Monitor".

By default, the current authority level is selected.

4. Click the [OK] button.

The password and authority level for the user account are changed.

Delete User Account

Only privileged users can perform this operation.

When using Single Sign-On, delete a user account on the directory service as necessary.

1. From the ROR console menu, select [Settings]-[User Accounts].

The [User Accounts] dialog is displayed.

2. Select the user account to delete, and click [Delete].

The [Delete User Account] dialog is displayed.

3. Click the [OK] button.

The selected user account is deleted.

Chapter 6 BladeViewer

This chapter provides an overview of BladeViewer and explains its features.

Note that BladeViewer is only available for PRIMERGY BX servers.

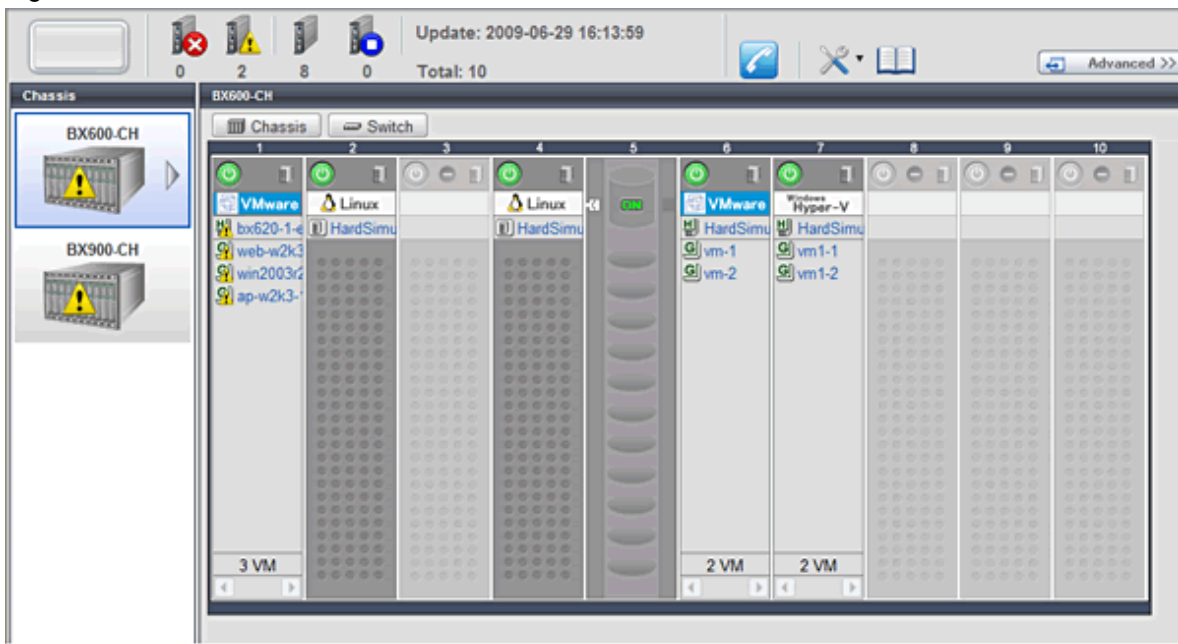
For details on the ROR console, refer to "[Appendix A User Interface](#)".

6.1 Overview

This section provides a functional overview of BladeViewer.

BladeViewer provides an intuitive representation of blade servers and their statuses. This makes it easier to monitor resource states or perform basic operations on blade servers.

Figure 6.1 BladeViewer



BladeViewer allows the following operations:

- Monitoring of resource statuses

The statuses of chassis, servers, LAN switches, and physical OSs can be monitored from a view representative of the actual placement and configuration of physical devices.

When using virtual servers, BladeViewer shows a list of VM guests for each VM host. This helps keeping track of relationships between VM guests and VM hosts.

BladeViewer also makes it easy to confirm which operating systems (physical OS and guest OS) are affected by a hardware failure.

- Display and control of power status

The power status of each server blade, storage blade, and VM guest is represented by an intuitive power button. Clicking this button provides quick access to power control operations (for both server blades and VM guests).

- Display of custom labels and comments

BladeViewer allows users to define custom labels and comments for each physical OS, VM host, and VM guest.

Once defined, labels are shown on top of each displayed physical OS, VM host, and VM guest. Using labels to display application contents makes it easy to visualize what applications are running on each server blade and identify the applications affected by a server failure.

Clicking on a label displays the comment defined for the related resource. Registering troubleshooting and recovery procedures beforehand can speed up the recovery of affected applications when a problem occurs.

- Display of contact information

BladeViewer allows users to define technical (support) contact information for their entire IT system. This contact information can be shown by clicking on the Contact icon.

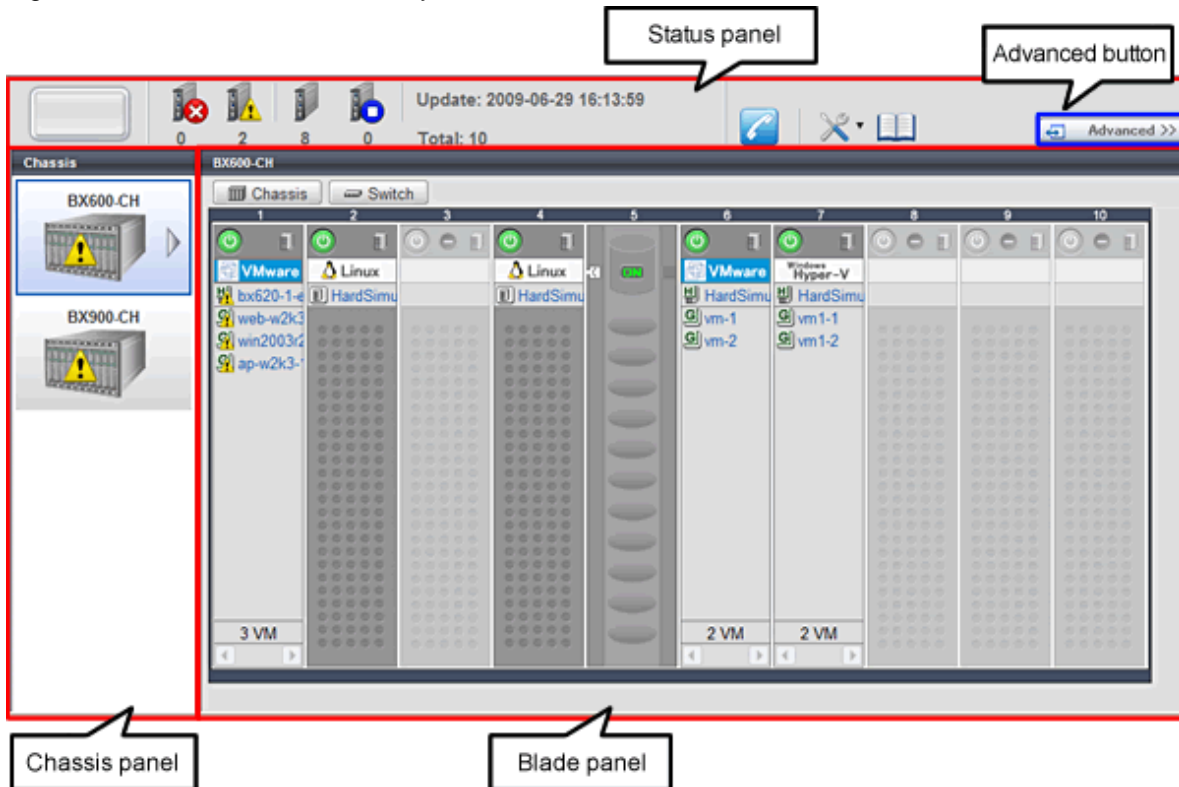
Registering contact details of technical support staff beforehand can help streamline recovery procedures when problems occur.

6.2 User Interface

This section explains how the BladeViewer screen is organized.

The BladeViewer screen consists of a status panel, a chassis panel, and a blade panel.

Figure 6.2 BladeViewer: Screen Layout



Status panel

This panel displays a summary of resources statuses.

Chassis panel

This panel displays the statuses of each registered chassis.

Blade panel

This panel displays the status of all resources mounted within the selected chassis.

Information

To switch from BladeViewer to the ROR console, click [Advanced>>], which is displayed in the upper-right of the BladeViewer screen. Switch to the ROR console when necessary, for example to register servers and change various settings. Otherwise, the last view used before logging out (either the ROR console or BladeViewer) is displayed.

6.3 Resource Status Monitoring

This section explains how to monitor resource statuses using BladeViewer.

6.3.1 Status Panel

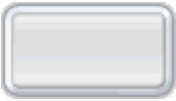


The status panel displays a summary of resources statuses (including resources other than PRIMERGY BX servers).

When a problem occurs in the system, a red or yellow light icon starts blinking on the left side of the status panel.

Clicking the light icon changes its color back to gray.

The table below shows the status and meaning associated with each light icon.

Table 6.1 Light Icons

Icon	Color	Status	Meaning
	Gray (not lit)	Normal	No errors or warnings have been detected in the system.
	Yellow (blinking)	Warning	A warning has been detected in the system.
	Red (blinking)	Error	An error has been detected in the system.


Information

When the light icon blinks, it means that a warning or an error has been detected. Check the location of the problem from the chassis or blade panel.

If BladeViewer shows no resources with a warning or error status in either the chassis panel or blade panel, switch to the ROR console and check the event log to identify the cause of the problem.




To the right of the light icon, BladeViewer shows the number of servers with an "error", "warning", "normal", and "stop" status.

Table 6.2 Displaying the Server Icon and the Number of Units

Icon and number of units	Meaning
 $N(*)$	Server and number of units

* Note: N is the number of servers.


Table 6.3 Status Icons

Icon	Status	Meaning
None	Normal	The resource can be used normally.
	Warning	An error occurred, however the resource can be used. Alternatively, the status of some resources cannot be obtained.
	Error	A fault or error occurred, therefore the resource cannot be used.
	Stop	The resource is stopped, therefore it cannot be used.

6.3.2 Chassis Panel

The chassis panel displays the statuses of each registered chassis.

Table 6.4 Chassis Icon

Icon	Meaning
	Chassis



See

For details on the different chassis statuses, refer to "Table 6.3 Status Icons" of "6.3.1 Status Panel".

If a chassis icon shows a warning or error status, it means that a problem occurred in a resource contained in the chassis.

For details on how to identify faulty resources, refer to "6.3.3 Blade Panel".



Information

Selecting a chassis icon from the chassis panel displays the contents of that chassis in the blade panel.

For details, refer to "6.3.3 Blade Panel".

6.3.3 Blade Panel

The blade panel displays the statuses of all the resources inserted into the selected chassis. Those resources are shown in a format representative of their physical configuration (shape and position).

To display the contents of a specific chassis in the blade panel, click on its icon in the chassis panel.

In the upper-part of the blade panel, the selected chassis and its LAN switches are represented by the following icons.

Table 6.5 Chassis Icon



Icon	Meaning
	Chassis

Table 6.6 LAN Switch Icons

Icon	Meaning
	LAN switches



See

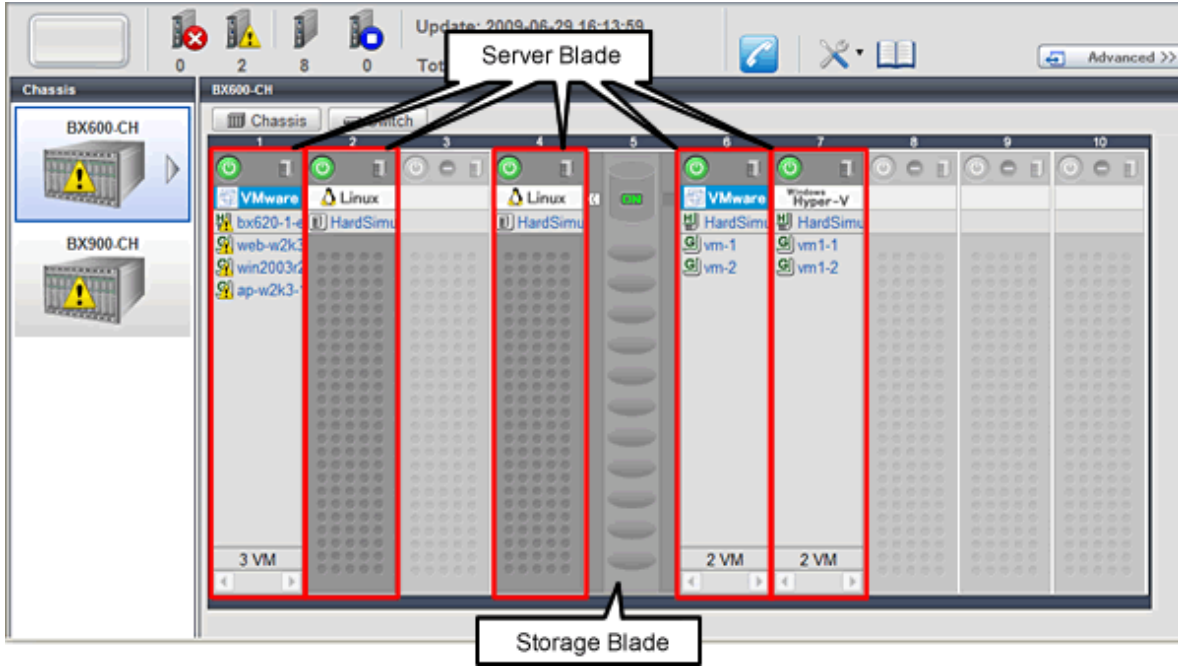
For details on the status icons that are displayed for the chassis and its LAN switches, refer to "Table 6.3 Status Icons" of "6.3.1 Status Panel".

6.3.3.1 Resource List

The blade panel graphically displays each slot within a chassis. Each server or storage blade is displayed according to its actual position (slot) within the chassis.

Note that an unregistered server is shown in light gray while an empty slot is shown in white.





Figure 6.3 Blade Panel: Resource List



Server Blade

A power button is displayed in the upper-part of each server blade. This power button is used to represent the power status of each server, as shown below.

Table 6.7 Server Blade Power Buttons





Power button	Color	Status	Meaning
	Green (lit)	Power ON	Power ON status.
	Gray (not lit)	Power OFF	Power OFF status.
	Green (blinking)	Power ON in progress	Power ON or reboot in progress.
	Orange (blinking)	Power OFF in progress	Power OFF in progress.

Information

The power status of a server blade can be easily controlled by clicking on its power button. For details, refer to "6.4.1 Server Blade".

A physical server icon is displayed on the right side of the server blade power button. The table below shows the meanings associated with each physical server icon.

Table 6.8 Physical Server Icons


Icon	Meaning
	Server
	Spare server
	Unregistered server
	Maintenance mode server

 See

For details on the different physical server statuses, refer to "Table 6.3 Status Icons" in "6.3.1 Status Panel".





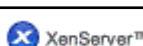

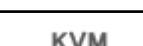
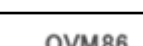
When a server blade is used as the admin server, the following admin server icon is displayed.

Table 6.9 Admin Server Icon

Icon	Status	Meaning
	Admin server	Indicates the server used as the admin server.

An OS icon is displayed below the physical server icon.
The table below shows the meaning of each OS icon.

Table 6.10 OS Icons

Icon	Meaning
	Windows OS
	Linux OS
	VMware host OS
	Hyper-V host OS
	Citrix XenServer host OS
	Linux Xen host OS
	KVM host OS
	OVM for x86 host OS

 Information

Clicking on a VM host OS icon displays a detailed list of the VM guests operating on the selected VM host.
For details, refer to "6.3.3.2 VM Guest List".

A user-defined label is displayed with a resource icon below the OS icon.




- If no label is set
The OS name is displayed.

- If the OS name cannot be acquired (because the OS has not been installed or for other reasons)

The server name (physical server name or VM guest name) is displayed.

The following table shows the resource icons used in BladeViewer and their associated meanings.

Table 6.11 Resource Icons

Icon	Meaning
	Physical OS
	VM host
	VM guest



See

For details on the resource status, refer to "Table 6.3 Status Icons" in "6.3.1 Status Panel".



Information

If a comment has been defined for a server, clicking on its label displays the [Server Properties] dialog.

The [Server Properties] dialog displays the comment and label set for the selected server, as well as its OS name, server name (for a physical OS, the physical server name, for a VM guest, the VM guest name), and IP address.



For details on defining comments, refer to "6.5.1 Listing and Editing of Labels and Comments".

Storage Blade

A power lamp is displayed in the top part of each storage blade.

The table below shows the status and meaning associated with each power lamp.

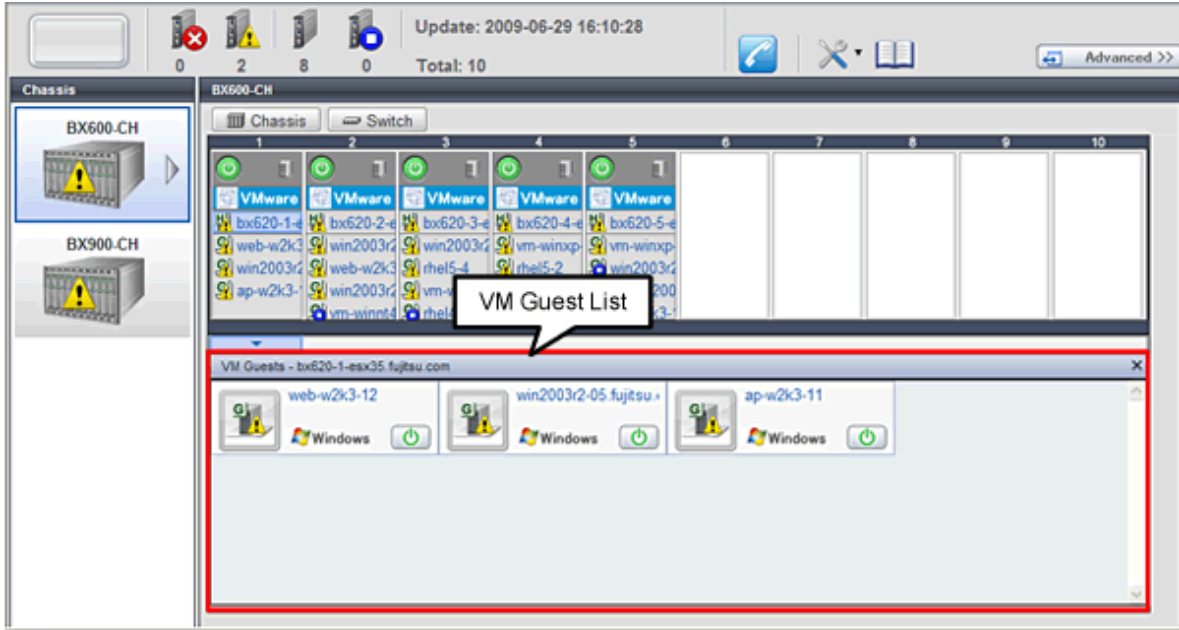
Table 6.12 Storage Blade Power Lamps

Power lamp	Color	Status	Meaning
	Green (lit)	Power ON	Power ON status.
	Gray (not lit)	Power OFF	Power OFF status.

6.3.3.2 VM Guest List

When a VM host is displayed in the blade panel, clicking the VM host OS icon displays a list of hosted VM guests with their statuses.

Figure 6.4 Blade Panel: VM Guest List



A VM guest icon is shown on the left side of each VM guest displayed in the VM guest list.

Table 6.13 VM Guest Icon

Icon	Meaning
	VM guest

See

For details on the different VM guest statuses, refer to "Table 6.3 Status Icons" in "6.3.1 Status Panel".

A user-defined label is displayed on the upper-right side of the VM guest icon.

- If no label is set
The OS name is displayed.
- If the OS name cannot be acquired (because the OS has not been installed or for other reasons)
The VM guest name is displayed.

An OS icon is displayed below the label.


For details on the different OS icons, refer to "Table 6.10 OS Icons" in "6.3.3.1 Resource List".

A power button is displayed on the lower-right side of each VM guest.

This power button represents the power status of each VM guest, as shown below.

Table 6.14 VM Guest Power Buttons

Power button	Color	Status	Meaning
	Green (lit)	Power ON	Power ON status.
	Gray (not lit)	Power OFF	Power OFF status.
	Green (blinking)	Power ON in progress	Power ON or reboot in progress.

Power button	Color	Status	Meaning
	Orange (blinking)	Power OFF in progress	Power OFF in progress.

Information

The power status of a VM guest can be easily controlled by clicking on its power button. Refer to "[6.4.2 VM Guest](#)" for details.

6.3.4 Resource Details

To view a resource's details, click on its icon (chassis, LAN switch, or physical server icon) from the blade panel.

- Chassis

Clicking a chassis icon (from the blade panel) opens up its management blade's Web interface in a new window. This Web interface provides more details on the chassis' status and contents. For details on the chassis icon, refer to "[6.3.3 Blade Panel](#)".

- LAN switches

Clicking on a LAN switch icon opens up its LAN switch details screen. This screen provides more details on the LAN switch's status and configuration. For details on the LAN switch icon, refer to "[6.3.3 Blade Panel](#)".

- Physical Server

Clicking on a physical server icon opens it up in the ServerView Operation Manager's Web interface. This interface provides more details on the physical server's status and its internal components. For details on the physical server icon, refer to "[Table 6.8 Physical Server Icons](#)" in "[6.3.3.1 Resource List](#)".



6.4 Power Control

This section explains how to control the power status of server blades and VM guests from BladeViewer.

6.4.1 Server Blade

The power status of a server blade can be easily controlled by clicking its power button.

Table 6.15 Actions of Server Blade Power Buttons

Power button	Color	Status	Action
	Gray (not lit)	Power OFF	Powers on a server blade.
	Green (lit)	Power ON	Shuts down or reboots a server blade.

Power On

Clicking on a power button that shows "Power OFF" status will power on the target server blade. A confirmation dialog is displayed first. Clicking [OK] in the confirmation dialog powers on the server and starts its OS.

At this time, the power button changes to an intermediate "Power ON in progress" state (green - blinking). The power button finally displays a "Power ON" state after confirming that the OS has started up correctly on the target server.

Power Off and Reboot

Clicking on a power button that shows "Power ON" status will either shut down or reboot the target server blade. A [Power Operation] dialog is displayed, in which the appropriate action can be selected.

Figure 6.5 Power Operation Dialog



- "Shutdown"

Selecting "Shutdown" will shut down the target server blade. A confirmation dialog is displayed first.

Clicking [OK] in the confirmation dialog shuts down the OS and powers off the managed server.

At this time, the power button changes to an intermediate "Power OFF in progress" state (orange - blinking). The power button finally displays "Power OFF" status after confirming that the target server has been shut down correctly.

- "Reboot"

Selecting "Reboot" will reboot the target server blade. A confirmation dialog is displayed first.

Clicking [OK] in the confirmation dialog shuts down the OS and reboots the managed server.

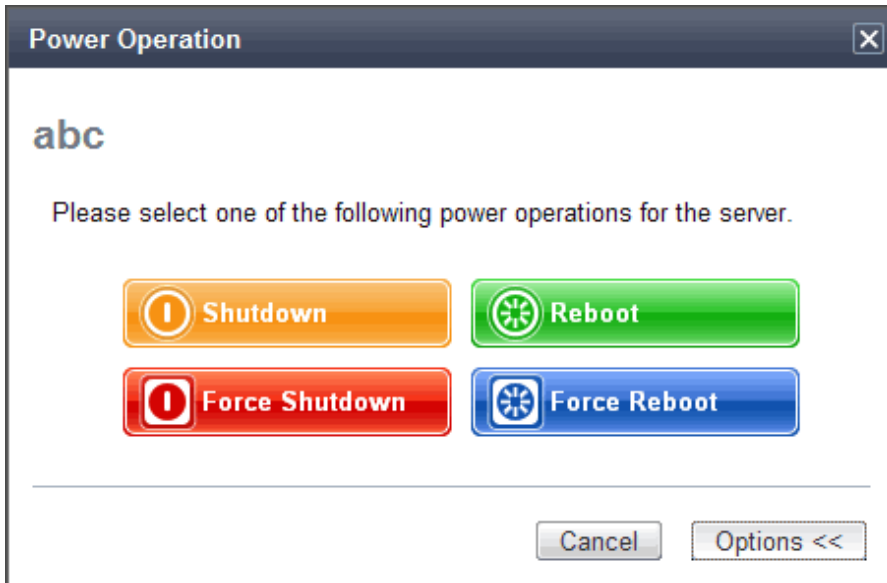
At this time, the power button changes to an intermediate "Power ON in progress" state (green - blinking). The power button finally displays "Power ON" status after confirming that the OS has started up correctly on the target server.

Forced Power Off and Reboot

Clicking on a power button that shows "Power ON" status, and selecting [Options >>] in the displayed [Power Operation] dialog enables selection of the "Force Shutdown" and "Force Reboot" actions.

A forced shutdown (or reboot) will forcibly power off (or reboot) the managed server blade without waiting for its OS to shut down cleanly.

Figure 6.6 Power Operation Dialog (with Additional Options)



- "Force Shutdown"

Selecting "Force Shutdown" will forcibly power off the target server blade. A confirmation dialog is displayed first. Clicking [OK] in the confirmation dialog will power off the managed server without waiting for its OS to shut down cleanly. At this time, the power button changes to an intermediate "Power OFF in progress" state (orange - blinking). The power button finally displays "Power OFF" status after confirming that the target server has been shut down correctly.

- "Force Reboot"

Selecting "Force Reboot" will forcibly reboot the target server blade. A confirmation dialog is displayed first. Clicking [OK] in the confirmation dialog will power off and reboot the managed server without waiting for its OS to shut down cleanly. At this time, the power button changes to an intermediate "Power ON in progress" state (green - blinking). The power button finally displays "Power ON" status after confirming that the OS has started up correctly on the target server.

 Note


[VMware] [Hyper-V] [Xen] [Citrix Xen] [KVM] [Solaris Zones] [OVM for x86 3.x] [OVM for SPARC]
 Take caution regarding the following points when powering-off or rebooting a VM host.


- When using a server virtualization software's high-availability feature, confirm that the server is set to VM maintenance mode within that virtualization software. This can be confirmed from the virtualization software client.
- Perform power operations only after setting VM maintenance mode (either from the VM management software client or using the resource control command).
 Refer to the server virtualization software manual, or to "3.4 rcxadm server" in the "Reference Guide (Command) VE" for details. Depending on the server virtualization software used, some restrictions may apply to the use of VM maintenance mode settings. For details about such restrictions, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".

6.4.2 VM Guest

The power status of a VM guest can be controlled by clicking the OS icon of its VM host and then clicking its power button in the list of VM guests that is displayed. Clicking on the power button provides power controls similar to those provided for server blades.

Table 6.16 Actions of VM Guest Power Buttons

Power button	Color	Status	Action
	Gray (not lit)	Power OFF	Powers on a VM guest.

Power button	Color	Status	Action
	Green (lit)	Power ON	Shuts down or reboots a VM guest.

Note

- VM guests need to be properly configured in order to use the shut down or reboot buttons. Attempting to shut down or reboot a VM guest that is not properly configured will result in an error. For details, refer to "9.2.1 Configuration Requirements" in the "Design Guide VE".
- Depending on the server virtualization environment, a VM guest may automatically migrate to another VM host when a power control operation is performed. This may cause power control operations to fail and return an error when used on VM guests. For details, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".
- 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 configuring the VM guest's startup and shutdown options in the server virtualization software used. For details, refer to the server virtualization software manual.

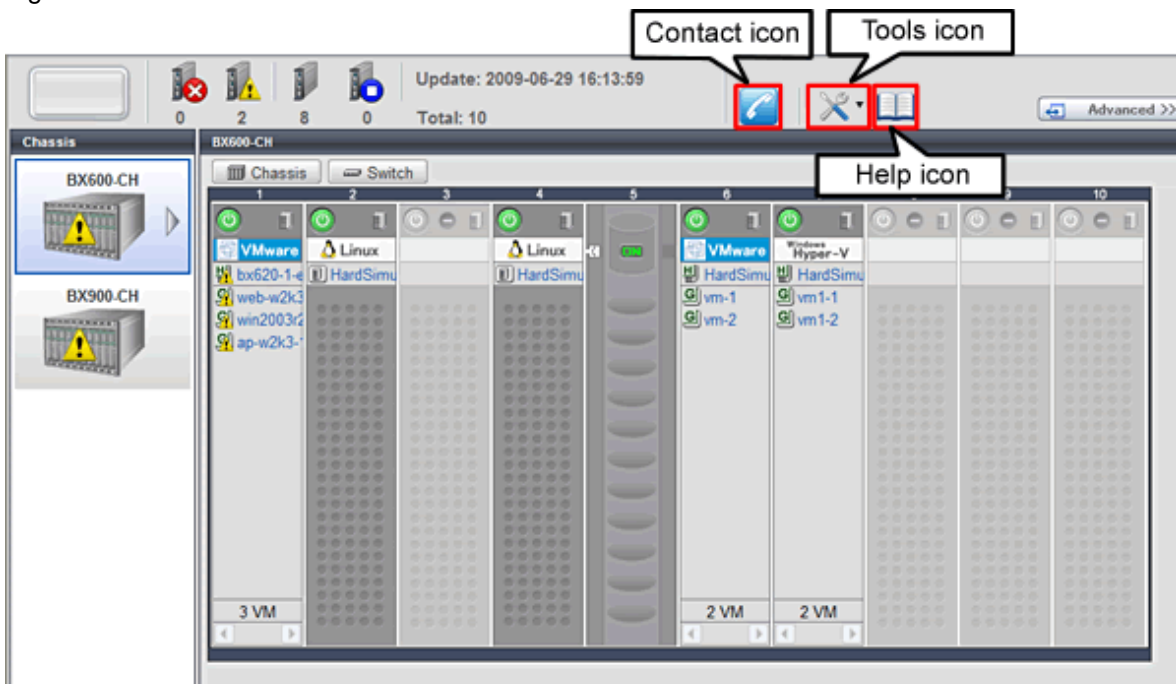
[Windows]

- Take caution regarding the following points when shutting down or rebooting a managed server running a Windows operating system.
 - If Windows is not configured to shut down when the computer's power button is pressed, the power operations in Resource Orchestrator may not function properly. To check this option, access the Control Panel, open the [Power Options], and check the settings of the [Advanced] tab in the [Power Options Properties] window.
 - If a file is being edited by a logged-in user, a dialog prompting the user to save the file is displayed, and the system may not shut down immediately. In such cases, shutdown does not take place until the user takes the appropriate action or a specified time (approximately five minutes) has elapsed.

6.5 Status Panel Operations

This section describes the operations that can be performed from the status panel.

Figure 6.7 BladeViewer: Tool Icons



Contact icon

Displays the [Contact] dialog. This dialog shows the contact information that was set for the entire system.

Tools icon

Enables selection of the following menu options:

Display Label List

Displays the [Label List] dialog.
Displays a list of labels. This list also allows modification of labels and comments.
For details on editing labels and comments, refer to "6.5.1 Listing and Editing of Labels and Comments".

Set Contact Information

Displays the [Set Contact Information] dialog.
For details on modifying contact information, refer to "6.5.2 Editing Contacts".

Change Password

Displays the [Change Password] dialog.
For details on changing passwords, refer to "6.5.3 Changing Passwords".

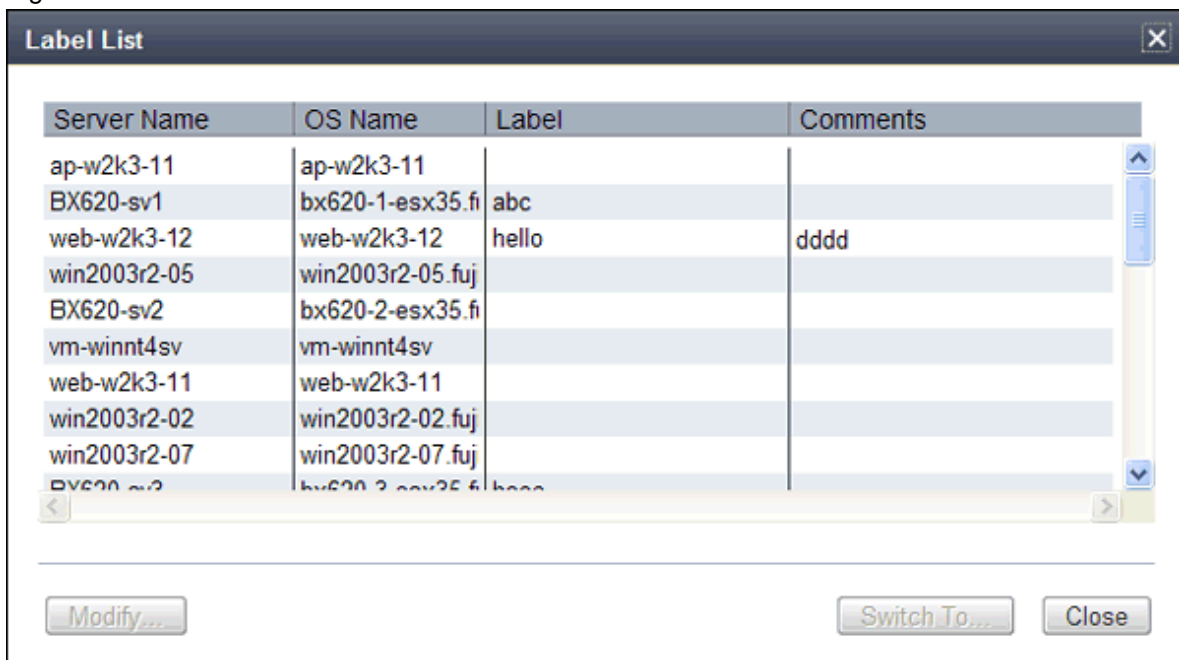
Help icon

The Help is displayed.

6.5.1 Listing and Editing of Labels and Comments

Clicking on the Tools icon and selecting "Display Label List" from the drop-down list displays the [Label List] dialog shown below. When applications are defined with labels, this list can provide a quick overview of the applications running on each server.

Figure 6.8 Label List



Contents of the Label List

The [Label List] dialog displays server names, OS names, labels, and comments for each server.

Clicking [Switch To] after selecting a server from the list will switch the view to the blade panel and display the selected server within its enclosing chassis.

Editing Labels and Comments

This function is only available to privileged users.
General users are only able to consult labels and comments.

- Privileged user

In the [Label List] dialog, select a server and click [Modify]. The [Modify Server Settings] dialog is displayed.

The label and comment of the selected server can be edited directly from the [Modify Server Settings] dialog.

Enter the following items:

Label

Enter up to 32 alphanumeric characters or symbols (ASCII characters 0x20 to 0x7e).

Comment

Enter up to 256 alphanumeric characters or symbols (ASCII characters 0x20 to 0x7e).



.....
New lines are counted as two characters.
.....

Additional information such as OS name, server name (for a physical OS, the physical server name, for a VM guest, the VM guest name), and IP address are displayed to help identify the selected server.

Clicking [Save] saves the modified label and comment into the manager's database. The saved content is then updated and displayed in BladeViewer.

- General user

If logged in as a general user, [Show] is displayed in place of [Modify] in the [Label List] dialog.

Clicking [Show] displays the [Server Properties] dialog, but does not allow editing of labels or comments.

6.5.2 Editing Contacts

Clicking the Tools icon and selecting "Set Contact Information" from the drop-down list displays the [Set Contact Information] dialog. This function is only available to privileged users. If logged in as a general user, the "Set Contact Information" menu item cannot be selected.

Enter the following item.

Contact

The currently defined contact information is displayed.

Enter a maximum of 256 characters.



.....
New lines are counted as two characters.
.....

Clicking [Save] saves the modified contact information into the manager's database. The saved content will be displayed the next time the [Contact] dialog is opened.

6.5.3 Changing Passwords

Clicking the Tools icon and selecting "Change Password" from the drop-down list displays the [Change Password] dialog.

The required information varies according to the authority level of the logged in user, as described below. The password is changed after entering the required information and clicking [Change].

- Privileged user

New password (Confirm password)

Enter a string using up to 16 alphanumeric characters or symbols.

- General user

Current password

Enter the password that is currently set.

Enter a string using up to 16 alphanumeric characters or symbols.

New password (Confirm password)

Enter a string using up to 16 alphanumeric characters or symbols.

Chapter 7 Registering Resources

This chapter explains how to register, change, and delete resources used by Resource Orchestrator. The Resource Orchestrator manager must be completely installed beforehand.

In addition to the usual method of registering each resource individually, it is also possible to register or change registered settings of multiple resources in batches using the pre-configuration function.

- Registering or modifying resources individually

This method is used when the number of servers to be installed is small (from one to four), or when adding a similar number of servers to an existing environment.

- Registering or modifying multiple resources collectively

This method is used when there are many (five or more) servers to be installed.

For information on how to register and modify multiple resources together, refer to "[Chapter 12 Pre-configuration for Resource Registration and Modification](#)".



Information

- **User Accounts**

When creating new user accounts, changing passwords, or modifying permission levels during setup, refer to "[Chapter 5 Managing User Accounts](#)".

- **Backing up the Admin Server**

The admin server should be backed up after the entire system has been completely set up, or after registering, changing, or deleting resources.

For information about backing up the admin server, refer to "Chapter 9 Backup and Restoration of Admin Servers" in the "Operation Guide VE".

7.1 Registering VIOM Coordination

This section explains how to register management software (VIOM).

Use the following procedure to register management software (VIOM):

1. From the ROR console menu, select [Settings]-[Register]-[Management Software (VIOM)].

The [Register Management Software(VIOM)] dialog is displayed.

2. Perform the following settings:

User ID

Enter the ID of a VIOM user account.

Password

Enter the password of the above VIOM user account.

3. Click the [OK] button.

7.1.1 Registering VIOM Server Profiles

Use the following procedure to configure VIOM server profiles:

1. Select Management Software (VIOM) from the ROR console, and then select the [Resource Details] tab.

2. In General of the [Resource Details] tab, click the link for the Management software.

The Web interface of ServerView Virtual-IO Manager starts up.

3. Refer to the ServerView Virtual-IO Manager manual to configure server profiles.

Note

HBA address rename and VIOM cannot be used together within the same chassis.

When using backup and restore or cloning, prioritize the following two boot operations:

1. Boot from the first admin LAN network interface (NIC1 (Index1))
2. Boot from the network interface used by the admin LAN (NIC2 (Index2))

When not using the onboard LAN of rack mount and tower servers as the admin LAN, refer to "[7.1.2 When Managing Rack Mount or Tower Servers Using VIOM](#)".

7.1.2 When Managing Rack Mount or Tower Servers Using VIOM

When managing rack mount and tower servers using VIOM, the positions of the admin LAN and the public LAN are specified in the "cardinfo" information of the following definition file.

When this setting is omitted, NIC configuration defined for each model is used and the onboard NIC is treated as the admin LAN. For details, refer to the description in the cardinfo information.

Storage Location of the Definition File

[Windows Manager]
Installation_folder\SVROR\Manager\etc\customize_data

[Linux Manager]
/etc/opt/FJSVrcvmt/customize_data

Definition File Name

server_spec.rcxprop

Character Code

[Windows Manager] [Linux Manager]
UTF-8

Line Break Code

[Windows Manager]
CR/LF

[Linux Manager]
LF

Definition File Format

- The following line must be entered in the first line of definition files.

```
ServerSpec,V1.1
```

- In the definition file, enter the configuration information (CPU core count, CPU clock speed, memory capacity, card information, etc.), separated by commas (",").
- When defining two or more servers, use line breaks.

Enter each line in the following format.

```
model_name, cpu_core_count, cpu_clock, memory_size, cpu_type, cardinfo  
or  
physical_server, cpu_core_count, cpu_clock, memory_size, cpu_type, cardinfo
```

- Blank spaces between data and commas (",") are ignored.
- If there is duplicated configuration information (CPU core count, CPU clock speed, memory capacity, etc.) for the same physical server, the values that appear first will be used.
- When adding comments, start the line with a number sign ("#").

Definition File Items

model_name

Enter the model name of the managed server.

Enter "[" for the first character, and "]" for the last character.

The model name displayed in the General information of the Resource Details window.

physical_server

Enter the same physical server name as the one entered when registering a managed server.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

cpu_core_count

The total number of physical CPU cores.

Enter "0", because this is not used when changing the specified admin LAN.

cpu_clock

The CPU clock speed.

Enter "0", because this is not used when changing the specified admin LAN.

memory_size

The total memory size.

Enter "0", because this is not used when changing the specified admin LAN.

cpu_type

The CPU type.

Do not enter the value, because this is not used when changing the specified admin LAN.

cardinfo

Enter the information for cards mounted on servers.

Specify the NICs used for the admin LAN and the public LAN.

Enter the information for each card in the following format. Use colons (":") to separate each piece of card information.

- Card type

Enter one of the following card types:

- "LAN"

- "FC"

- "CNA"

If something other than the above is entered, the card information will be invalid.

- Slot type

Enter the slot type.

Enter an integer between 0 and 9 for the slot type, based on the following.

- "0": Onboard

- "1" to "9": PCI slot numbers

- Port number

Enter the port numbers. Enter an integer between 1 and 9 for the port number, preceded by a hyphen ("-").

- Flag to confirm if the LAN card is used for an admin LAN

When using a LAN card for an admin LAN, enter "***" or "*" to indicate that the LAN card is used for an admin LAN. When using the card for a LAN other than an admin LAN, do not enter anything.

This item is enabled when the card type is set to "LAN" or "CNA".

- The card for the primary admin LAN: Enter "*".
- The card for the secondary admin LAN: Enter "***".
- A card not for an admin LAN: Leave blank.

Enter the order of the definition of the LAN or CNA as follow:

```
Primary_admin_LAN-> Secondary_admin_LAN-> Public_LAN
```

When omitting the card information, the number is configured in the following order based on the model of each server.

- RX/TX300 S7 or later, TX2560 M1 or later, RX2540 M1 or later, and RX2560 M1 or later
["LAN0-1*", "LAN0-2**", "LAN1-1", "LAN1-2", "LAN2-1", "LAN2-2", "FC3-1", "FC3-2", "FC4-1", "FC4-2"]
- RX/TX200 S7 or later and RX2530 M1 or later
["LAN0-1*", "LAN0-2**", "LAN1-1", "LAN1-2", "FC2-1", "FC2-2"]
- For other models
["LAN0-1*", "LAN0-2**"]



Example

In the following example, the admin LAN is ports 1 and 2 of PCI slot1.

```
ServerSpec,V1.1
[PRIMERGY RX300 S7],0,0,0,,LAN1-1*:LAN1-2**:LAN0-1:LAN0-2
server00,0,0,0,,LAN1-1*:LAN1-2**:LAN0-1:LAN0-2
```

7.2 Registering VM Management Software

This section explains how to register VM management software.

Registration of VM management software (such as VMware vCenter Server) is necessary to enable VM guest migrations. For details on the required VM management software settings, refer to "9.2.1 Configuration Requirements" in the "Design Guide VE".

Use the following procedure to register VM management software:

1. From the ROR console menu, select [Settings]-[Register], and then select the type of the VM management software to use.

The [Register Management Software(*name*)] dialog is displayed.

In *name*, the type of the VM management software is displayed.

2. Perform the following settings:

Management software name

Enter the name of the target VM management software.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

Location

Select the location where the VM management software to register is operating.

- If VM management software is installed on the admin server

Select [Admin Server].

- In other cases

Select [Other Server].

Selecting this option activates the IP address field. Enter the IP address of the server on which VM management software is installed.

By default, [Admin Server] is selected.

IP address

Enter the IP address of VM management software. When specifying [Admin Server] for the location, entry is not possible, as the IP address of admin server remains displayed.

Enter the IP address using periods ".".

Note

When receiving SNMP traps from VM management software (VMware vCenter Server), the configured IP address and the SNMP trap source IP address of the VM management software (VMware vCenter Server) should be the same. The SNMP trap source IP address is the IP address of the protocol with the highest priority of protocol binding. When changing the SNMP trap source IP address, change the order of protocol binding.

User ID

Enter the user ID to use to control VM management software.

Enter up to 84 characters, including alphanumeric characters and symbols (ASCII characters 0x20 to 0x7e).

Password

Enter the password for VM management software.

Enter up to 128 characters, including alphanumeric characters and symbols (ASCII characters 0x20 to 0x7e).

3. Click the [OK] button.

VM management software is registered with the entered information.

Information

Registration and management of multiple VM management software packages (VMware vCenter Server, etc) are possible. It is also possible to register a single VM management product multiple times and use it for management.

Point

When two or more different VM management products are registered, the following operations cannot be performed for different VM management products.

- Creation of L-Servers
- Collection of cloning images
- Migration

The following VM management software can be registered in Resource Orchestrator.

- VMware vCenter Server
- System Center Virtual Machine Manager

7.3 When Using Blade Servers

This section explains how to register resources when using blade servers.

When using blade servers, use the following procedure to register resources:

- Register Chassis
- Register blade servers
- Register LAN switch blades
- Configure VLANs on LAN switch blades

7.3.1 Registering Chassis

This section explains how to register a chassis.

Registering chassis makes it possible to use the optional power monitoring settings.

When collecting power data, perform the power data collection settings according to "[9.7.1 Changing Environmental Data Settings](#)". For details on devices supporting power monitoring, refer to "2.5 Hardware Environment" in the "Design Guide VE".

By registering a chassis, every server blade mounted in the chassis will be automatically detected and displayed as an unregistered server in the server resource tree. Register these managed servers individually.

For details on registering servers to manage, refer to "[7.3.2 Registering Blade Servers](#)".

Use the following procedure to register a chassis:

1. In the ROR console server resource tree, right-click "Server Resources", and select [Register]-[Chassis] from the popup menu.

The [Register Chassis] dialog is displayed.

2. Perform the following settings:

Admin LAN (IP address)

Enter the IP address that was set on the chassis management blade.

Enter the IP address using periods ".".

Chassis name

Enter a name to assign to this chassis.

Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").

SNMP Community

Enter the SNMP community that was set on the chassis management blade.

Either select "public" or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

3. Click the [OK] button.

The mounted chassis will be displayed under the server resource tree.

Any server blade mounted within this chassis will be detected automatically and shown as: [*chassis_name-Slot_number*[Unregistered]].

The only operation available for those unregistered server blades is server registration, while the ROR console can only display their hardware statuses and properties.

If the manager is installed on one of those server blades, this blade will be shown as: [*chassis_name-Slot_number*[Admin Server]].

In that case, server registration will not be available for the admin server, but its hardware status and properties will be displayed in the ROR console.

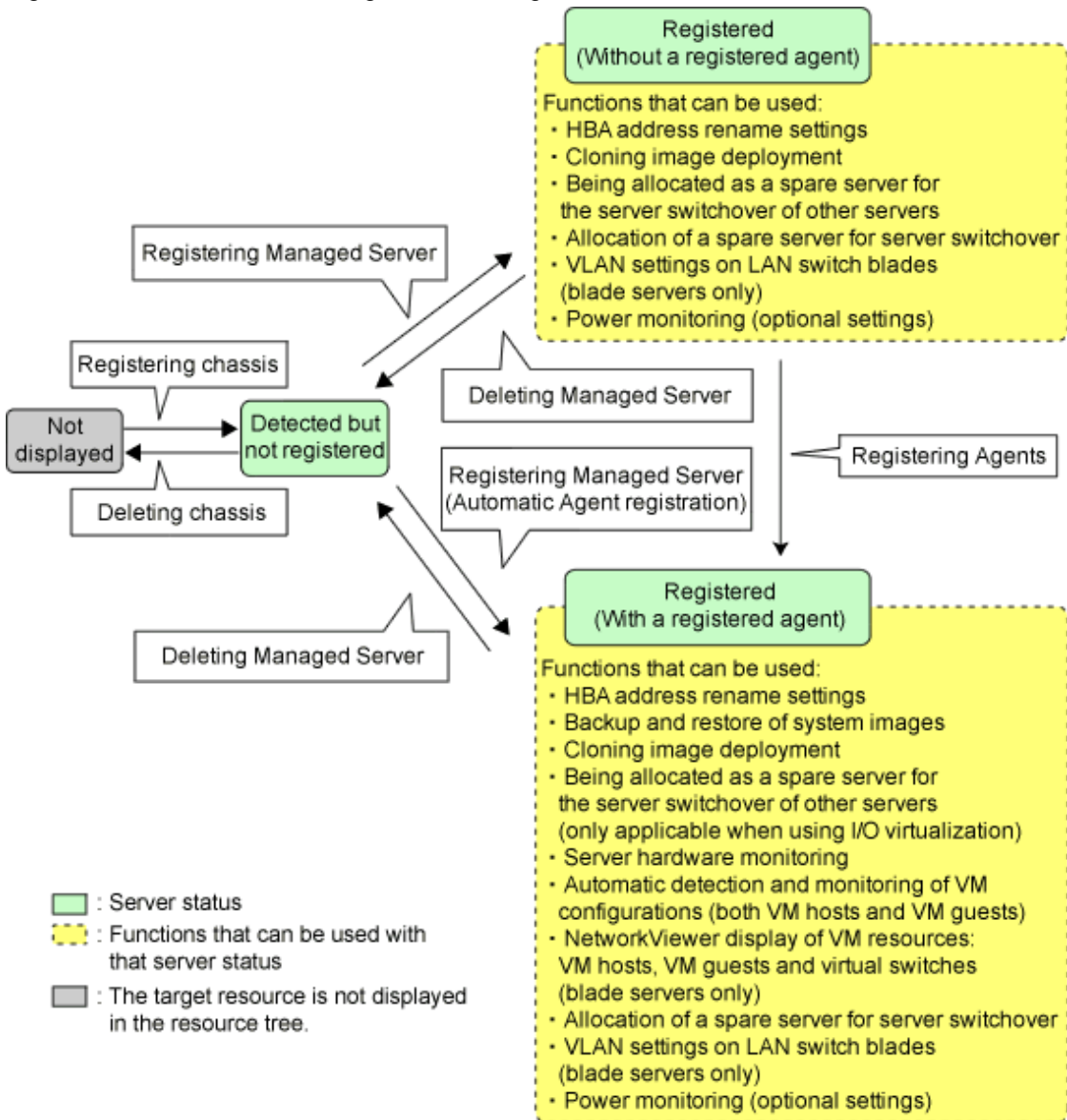
7.3.2 Registering Blade Servers

To register a blade server (PRIMERGY BX series), its enclosing chassis must be registered first.

When using VIOM for I/O virtualization, VIOM server profiles should be registered in advance according to the procedure described in "[7.1.1 Registering VIOM Server Profiles](#)".

To register blade servers other than PRIMERGY BX servers, refer to "[7.4 When Using Rack Mount and Tower Servers](#)".

Figure 7.1 Status Transition Diagram for Managed Servers



Use the following procedure to register blade servers.

1. In the ROR console server resource tree, right-click an unregistered server blade or partition in the target chassis, and select [Register]-[Server] from the popup menu.

The [Register Server] dialog is displayed.

2. Perform the following settings:

Physical Server Name

Enter a name to assign to this physical server.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

Admin LAN (IP address)

Enter the IP address used by this server on the admin LAN.

When IP address is displayed

Entering an admin LAN (IP address) is not required.

Agents are automatically registered.

Note

- If ServerView Agents (mandatory software) is not running, message number 67231 will be displayed. In this case, server registration succeeds, but the agent is not registered.

For details on the appropriate corrective action, refer to "Message number 67231" in "Messages".

- If the admin LAN (IP address) of servers not running a physical OS or a VM host are displayed, old information may have been being displayed. After canceling registration of the server, right-click the chassis on the server resource tree and select [Update] from the popup menu to request an update of hardware properties. The IP address is updated to the correct value (it takes several seconds to obtain the information and to update).

When IP address is not displayed

Enter the IP address of this server's admin LAN network interface.

The Agent will not be registered automatically, but can be manually registered after server registration if necessary. After registering servers, register agents as required.

For details on registering agents, refer to "Chapter 7 Installing Software and Registering Agents on Managed Servers" in the "Setup Guide VE".

Information

When a physical OS and VM host are running on this server, the admin LAN (IP address) may be obtained automatically.

After canceling registration of the server, right-click the chassis on the server resource tree and select [Update] from the popup menu to request an update of hardware properties.

If the IP address is not shown after going through the above procedure, set it by manually entering the IP address and registering the server.

Server OS category

This option is displayed if the target server runs a physical OS or VM host.

Select the appropriate server OS category (Physical OS or VM host).

Selecting [VM Host] activates the user ID and password input fields. Those refer to the user name and password entered during installation of this VM host.

Select the server OS category depending on whether the relevant server is used on a physical OS or a VM host.

- For a Physical OS

Select [Windows/Linux] or [Solaris].

- For a VM Host

Select [VM Host], and enter the VM host login account information.

This login account information will be used by Resource Orchestrator to control and communicate with the registered VM host.

User ID

Enter the user ID to log in to the VM host. Specify a user ID that has VM host administrator authority.

[Hyper-V]

Users of the Hyper-V Administrators group can be specified.

Password

Enter the password of the user to log in to the VM host.

[Apply Admin LAN NIC settings] checkbox

The checkbox is displayed only for blade servers (PRIMERGY BX servers).

- When not changing the Admin LAN NIC settings

NIC1 (Index1) and NIC2 (Index2) are used, without changing the NICs used for the admin LAN, the HBA address rename setup service, or for redundancy of the admin LAN.

- When changing the Admin LAN NIC settings

NIC1 (Index1) and NIC2 (Index2) are used as the NICs for the admin LAN, the HBA address rename setup service, and redundancy of the admin LAN.

Select the NICs to use from Admin LAN (MAC address1) and Admin LAN (MAC address2).

Admin LAN (MAC address 1)

Displayed when the [Apply Admin LAN NIC settings] checkbox is selected.

Select the NIC to use for the admin LAN. The IP address allocated to the selected NIC is displayed in [Admin LAN (IP address)].

When an IP address is not allocated, specify the admin LAN (IP address) of the server to register.

Admin LAN (MAC address 2)

Displayed when the [Apply Admin LAN NIC settings] checkbox is selected.

Select the NICs used for the HBA address rename setup service or for admin LAN redundancy.

For the following cases, select the [Disable MAC address 2].

- When not using the HBA address rename setup service
- When not performing admin LAN redundancy

Note

- For details about the network interfaces used on the admin LAN, refer to "7.1 Network Configuration" in the "Design Guide VE". If an incorrect network interface is used, Resource Orchestrator will use a wrong MAC address for the admin LAN. An admin LAN IP address is required even when registering a spare server. Enter an IP address that does not conflict with the IP address of any other managed server on the admin LAN.
- When using backup and restore, cloning, or HBA address rename, the NIC (or LAN expansion board) must support PXE boot.
- When registering a newly-mounted PRIMERGY BX900 server, as recognition of this server blade's admin LAN MAC address will take time, error message number 61142 may be displayed. In this case, after registration has been canceled, right-click the chassis on the server resource tree and select [Update] from the popup menu to request an update of hardware properties. This will update the MAC address to the correct value. This may also take a few minutes to obtain hardware information and update internal properties. Confirm that the correct MAC address is displayed correctly before registering the server again. For details on the appropriate corrective action, refer to "Message number 61142" in "Messages".
- A server running a VM host can still be registered as a physical OS if its [Server OS category] is set to [Windows/Linux]. (For Windows Server 2008, etc.) A VM host server that was mistakenly registered as a physical OS should be deleted and re-registered as a VM host.
- The same NIC cannot be selected for [Admin LAN (MAC address 1)] and [Admin LAN (MAC address 2)].
- For the following cases, after selecting [Disable MAC address 2] for [Admin LAN (MAC address 2)], the lowest numbered NIC which is not used for [Admin LAN (MAC address 1)] is used for Admin LAN2.
 - When using the HBA address rename setup service
 - When performing admin LAN redundancy

3. Click the [OK] button.

The registered server will be displayed in the server resource tree.

Note

- When an agent is registered on a VM host, all VM guests running on that VM host are also registered automatically. Whenever a VM guest is created, modified, deleted, or moved on a registered VM host, the changes are automatically updated in the server resource tree.
- The VM guest name displayed in the ROR console is either the VM name defined in its server virtualization software or the host name defined in the guest OS.

The timing at which the host name of a guest OS is detected and displayed varies according its server virtualization software. For details, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".

- It is recommended not to use duplicate names for physical OSs, VM hosts, and VM guests. If duplicated names are used, those resources cannot be managed from the command-line.
 - When registering a server on which the agent was installed, it is necessary to either reboot the server or restart its related services (explained in the "2.2 Starting and Stopping Agents" in the "Operation Guide VE") after server registration. This step has to be done before running any image operation (system image backup or cloning image collection).
For details on how to restart the agent, refer to "2.2 Starting and Stopping Agents" in the "Operation Guide VE".
-

7.3.3 Registering LAN Switch Blades

To register a LAN switch blade, its enclosing chassis must be registered first.

Use the following procedure to register a LAN switch blade.

1. In the ROR console server resource tree, right-click an unregistered LAN switch blade from the target chassis, and select [Register]-[LAN Switch] from the popup menu.

The [Register LAN Switch] dialog is displayed.

2. Perform the following settings: For a LAN switch blade PY CB 10Gb FEX Nexus B22, only the LAN switch name can be configured.

LAN switch name

Enter the name to assign to this LAN switch blade.

Enter up to 15 characters, including alphanumeric characters (upper or lower case), underscores ("_"), or hyphens ("-").

Admin port

Set the value for this item when defining Converged Fabric mode of a LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2.

Select [oob] or [cfab]. The default setting is [oob].

Admin LAN (IP address)

Enter the admin LAN IP address that was set on this LAN switch blade.

Enter the IP address using periods ".".

When is LAN switch blade CB Eth Switch 10/40Gb 18/8+2 is in Converged Fabric mode, enter the admin IP address for the management port.

- When management port is cfab

Enter the virtual domain representative IP address of the fabric.

- When management port is oob

Enter the IP address of oob.

User ID

Enter the name of a telnet or SSH user account that can log in to this LAN switch blade.

For a LAN switch blade PY CB DCB SW 10Gb 18/6/6, enter the name of the administrator account for the LAN switch blade.

Password

Enter the password of the above telnet or SSH user account.

Connection method

Select either [Telnet] or [SSH]. The default setting is as follows:

- LAN switch blade PY CB DCB SW 10Gb 18/6/6 or PY CB Eth Switch 10/40Gb 18/8+2

[SSH]

- In other cases

[Telnet]

Administrative password

Enter the password of this LAN switch blade's telnet or SSH administrator account.

If the user ID and the password of the administrator account for the LAN switch blade were set in [User ID] and [Password], simply re-enter the same password in this field. In this case, Resource Orchestrator does not check whether the password entered here matches the password set on the LAN switch blade.

SNMP Community

Enter the SNMP community that was set on this LAN switch blade.

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

For LAN switch blades operating in Converged Fabric mode, select [public]. In this case, Resource Orchestrator does not communicate with LAN switch blades using SNMP, so it does not check whether the SNMP community entered here matches the SNMP community set on the LAN switch blade.

3. Click the [OK] button.

The registered LAN switch blade will be displayed in the server resource tree.

Information

For the following LAN switch blades, check the setting after the LAN switch blade has been registered.

- For a PY CB DCB SW 10Gb 18/6/6

Check that the following settings are displayed correctly in the resource details of the LAN switch blade.

- Operation mode (VCS mode and other modes)
- VCS ID and RBridge ID

- For a PY CB Eth Switch 10/40Gb 18/8+2 operating in Converged Fabric mode

Check that the following settings are displayed correctly in the resource details of the LAN switch blade.

- Fabric ID, Domain ID, and Switch ID

If a displayed value is incorrect, log in to the LAN switch blade and check that the settings of operating mode and these IDs are correct. For the confirmation method, refer to the manual for the LAN switch.

If the settings are correct, delete the LAN switch blade and register it again.

Note

- A telnet or SSH connection is made when registering a LAN switch blade.

When telnet or SSH (SSH version 2) connection is disabled, enable it.

Refer to the manual of the relevant product.

Some models may have restrictions regarding the number of simultaneous connections. In this case, log out from other connections.

If the connection is unavailable, the following features are also unavailable.

- Registration of LAN switch blades
- Changing of LAN switch blade settings
- Changing and setting the VLAN for LAN switch blades (internal and external connection ports)
- Restoration of LAN switch blades
- Server switchover (changing network settings while a server is switched over)

SSH connection (SSH version 2) can be selected for the following LAN switch blades.

- LAN switch blade PY CB Eth Switch/IBP 10Gb 18/8 (1.00 or later version)
- LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2 (1.00 or later version)

- LAN switch blade PY CB Eth Switch/IBP 1Gb 36/8+2 (4.16 or later version)
 - LAN switch blade PY CB Eth Switch/IBP 1Gb 36/12 (3.12 or later version)
 - LAN switch blade PY CB Eth Switch/IBP 1Gb 18/6 (3.12 or later version)
 - LAN switch blade PY CB DCB SW 10Gb 18/6/6 (2.1.1_fuj or later version)
- Virtual domain representative IP addresses cannot be registered with LAN switch blade CB Eth Switch 10/40Gb 18/8+2.

7.3.4 Configuring VLANs on LAN Switch Blades

On managed LAN switch blades, VLANs should be set on both internal ports (those connected to network interfaces on managed servers) and external ports (those connected to external, adjacent LAN switches).



Note

- VLANs cannot be configured on PRIMERGY BX 900 and BX 400 LAN switch blades operating in IBP mode or Converged Fabric mode.
- For a LAN switch blade PY CB 10Gb FEX Nexus B22, this cannot be configured.

7.3.4.1 Configuring VLANs on External Ports

Use the following procedure to configure VLANs on a LAN switch blade's external ports.

1. In the ROR console server resource tree, right-click the target LAN switch blade and select [Modify]-[Network Settings] from the popup menu.

The [VLAN Settings] dialog is displayed.

2. Perform the following settings:

VLAN

Specify the VLAN ID to assign to a LAN switch blade port.

Adding a new VLAN ID

- a. Under VLAN, select [Create new].
- b. Enter a VLAN ID number.
For details on VLAN IDs, refer to the manual of the LAN switch blade to be used.

Modifying an existing VLAN ID

- a. Under VLAN, select [Change].
- b. Select a VLAN ID.

Physical Port, Link Aggregation

Select port numbers to configure or VLAN types of link aggregation group names ([Untagged] or [Tagged]).

3. Click the [OK] button.
Check that the VLAN has been set.
4. Select the LAN switch blade in the server resource tree of the ROR console and display the [Resource Details] tab.
Confirm that the VLAN information is displayed in [VLAN Area] on [Resource Details].



Note

For a LAN switch blade PY CB DCB SW 10Gb 18/6/6, the VLAN settings of external ports cannot be configured.

7.3.4.2 Configuring VLANs on Internal Ports

Use the following procedure to configure VLANs on a LAN switch blade's internal ports.

1. In the ROR console server resource tree, right-click the target server (or the physical OS or VM host on the server), and select [Modify]-[Network Settings] from the popup menu.

The [Network Settings] dialog is displayed.

2. Select the index of the network interface for which to assign a VLAN ID, and click [Setting].

The [VLAN Configuration] dialog is displayed.

3. Perform the following settings:

Port VLAN

VLAN ID

Enter the VLAN ID to assign to the LAN switch blade port that is connected to the network interface selected in step 2.

Tagged VLAN

VLAN ID

Enter the tagged VLAN ID(s) to assign to the LAN switch blade port that is connected to the network interface selected in step 2.

Multiple VLAN IDs can be entered by separating them with commas (",").

4. Click the [OK] button.

Note that the VLAN settings are not applied onto the LAN switch blade at this stage. To configure VLANs for multiple network interfaces, repeat steps 2 to 4.

5. Confirm the configuration set in the [Network Settings] dialog.

6. Click the [OK] button.

VLAN settings are applied to the related LAN switch blade.



Note

- When the VLAN configuration of a registered LAN switch blade is changed from the Web-based or command-based interface of the LAN switch, it may take a while for that configuration to be reflected on Resource Orchestrator through periodic queries.

When performing server switchover before new VLAN information is reflected, the VLAN information previously set is configured in LAN switch blades. Set the VLAN configuration from the ROR console instead of the LAN switch's own Web-based and command-based interfaces.

- If the Port VLAN ID field is left blank and a value is entered for Tagged VLAN ID in the [VLAN Configuration] dialog, the tagged LAN only will be enabled.

To enable a port VLAN, enter a value for Port VLAN ID.

When only a tagged VLAN is configured, the value for the port VLAN is not displayed on the ROR console even if it has been configured on the switch. For the devices for which port VLANs cannot be deleted, it is necessary to limit the frames that let ports pass through to the tagged frames only.

If the port VLAN ID is unspecified or 1, a tagged VLAN ID cannot be set to 1.

- VLAN settings cannot be configured for ports with Automatic Migration of Port Profile (AMPP) configured.

7.3.5 HBA address rename Settings

For details, refer to "[7.4.2 HBA address rename Settings](#)".

7.4 When Using Rack Mount and Tower Servers

This section explains how to register resources when using rack mount or tower servers.

When using rack mount or tower servers, use the following procedure to register resources:

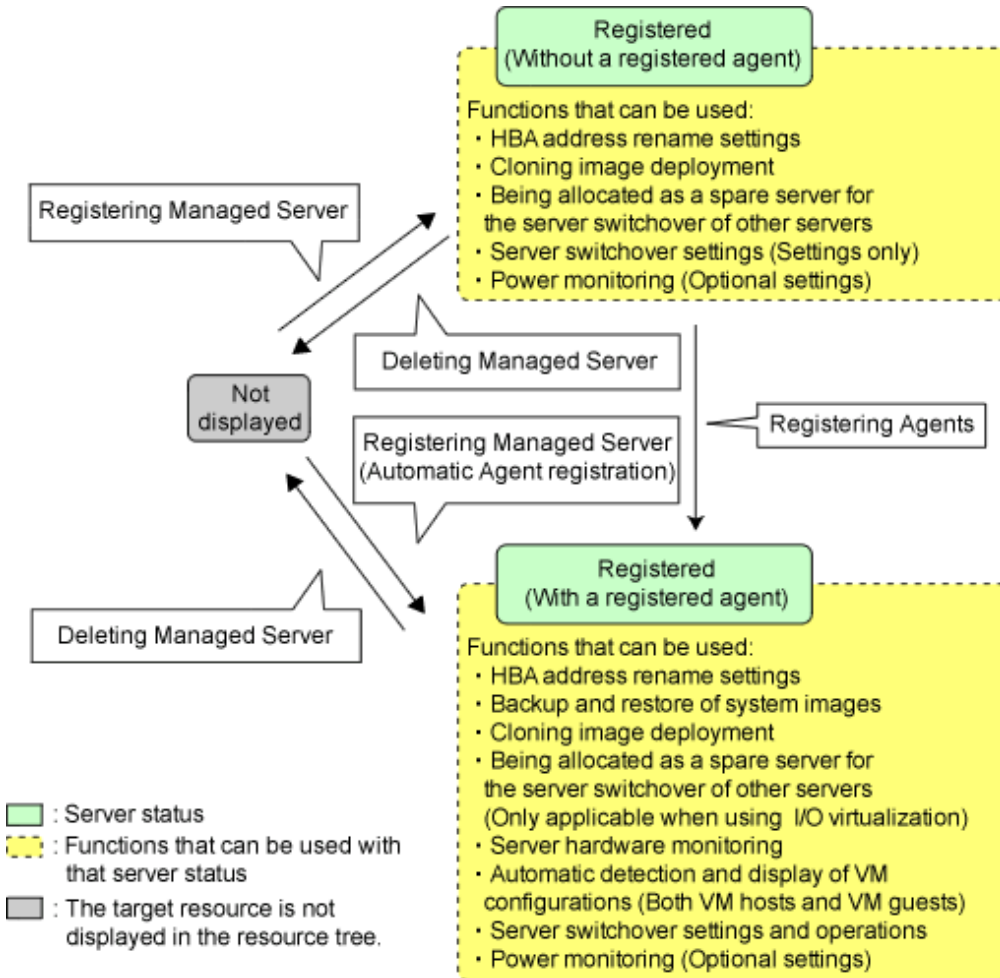
- Register Rack Mount or Tower Servers
- Register LAN Switches

7.4.1 Registering Rack Mount or Tower Servers

This section explains how to register a rack mount or tower server.

When using VIOM for I/O virtualization, VIOM server profiles should be registered in advance according to the procedure described in "7.1.1 Registering VIOM Server Profiles".

Figure 7.2 Status Transition Diagram for Managed Servers



Use the following procedure to register servers.

1. In the ROR console server resource tree, right-click [Server Resources], and select [Register]-[Server] from the popup menu.
The [Register Server] dialog is displayed.
2. Perform the following settings:
Enter items differ depending on whether the [Register agent] checkbox is selected, as described below.
If this checkbox is checked, agents will be registered after server registration.
If this checkbox is not checked, registration of agents will not be performed, so register agents after server registration when necessary.
For details on registering agents, refer to "Chapter 7 Installing Software and Registering Agents on Managed Servers" in the "Setup Guide VE".

Without Agent Registration

- Physical server name
- Remote management controller
 - IP address
 - User ID
 - Password
- Association with server management software (ServerView)
 - Enable/Disable
 - SNMP Community
- Admin LAN
 - IP address
 - MAC address (NIC1)
- SAN Boot/Admin LAN Redundancy
 - MAC address (NIC2)

Automatic registration of agents is not performed after server registration. After registering servers, register agents as required. If registering agents, register agents after checking the product name is displayed in the General Area of [Resource Details] tab. Executing [Update] acquires the latest information.

With Agent Registration

- Physical server name
- Remote management controller
 - IP address
 - User ID
 - Password
- Association with server management software (ServerView)
 - Enable/Disable
 - SNMP Community
- Admin LAN
 - IP address
- Admin LAN Redundancy
 - MAC address (NIC2)
- OS
 - Type

Agents are automatically registered after server registration is completed.

Physical Server Name

Enter a name to assign to this physical server.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

Remote management controller

IP address

Enter the IP address of this server's remote management controller.

User ID

Enter the ID of a remote management controller user account with administrative authority over this server.
Enter up to 16 characters, including alphanumeric characters and symbols (ASCII characters 0x20 to 0x7e).

Password

Enter the password of the above remote management controller user account.
Enter up to 16 characters, including alphanumeric characters and symbols (ASCII characters 0x20 to 0x7e).
This field can be omitted if no password has been set for this user account.

Association with server management software (ServerView)

Enable/Disable

For PRIMERGY BX servers

Select [Enable] and enter an [SNMP Community].

For servers other than PRIMERGY servers

Select [Disable].

By default, [Enable] is selected.

SNMP Community

Enter the SNMP community that was set on this server.
Either select "public" or enter an arbitrary string.
Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

Admin LAN

IP address

Enter the IP address used by this server on the admin LAN.

MAC address (NIC1)

Enter the MAC address of this server's admin LAN network interface.
Enter a physical MAC address in either one of the following formats: hyphen-delimited ("xx-xx-xx-xx-xx-xx"), or colon-delimited ("xx:xx:xx:xx:xx:xx").
MAC addresses will be automatically detected when the [Register agent] checkbox is selected.

SAN Boot/Admin LAN Redundancy

MAC address (NIC2)

Enter the MAC address of the second admin LAN network interface. This network interface is to be used by the HBA address rename setup service, or to enable admin LAN redundancy on the registered server.
Enter a physical MAC address in either one of the following formats: hyphen-delimited ("xx-xx-xx-xx-xx-xx"), or colon-delimited ("xx:xx:xx:xx:xx:xx").
This field can be omitted in the following cases.

- When not using the HBA address rename setup service
- When not using GLS for admin LAN redundancy on the managed server
- For a spare server whose primary servers are not using admin LAN redundancy

OS

Type

This option is displayed if the target server runs a physical OS or VM host.
Select the appropriate server OS category (Physical OS or VM host).
Selecting [VM Host] activates the user ID and password input fields. Those refer to the user name and password entered during installation of this VM host.
Select the server OS category depending on whether the relevant server is used on a physical OS or a VM host.

For a Physical OS

Select [Windows/Linux].

For a VM Host

Select [VM Host], and enter the VM host login account information.

This login account information will be used by Resource Orchestrator to control and communicate with the registered VM host.

User ID

Enter the user ID to log in to the VM host. Specify a user ID that has VM host administrator authority.

[Hyper-V]

Users of the Hyper-V Administrators group can be specified.

Password

Enter the password of the user to log in to the VM host.

Note

- For details about the network interfaces used on the admin LAN, refer to "7.1 Network Configuration" in the "Design Guide VE". If an incorrect network interface is used, Resource Orchestrator will use a wrong MAC address for the admin LAN. An admin LAN IP address is required even when registering a spare server. Enter an IP address that does not conflict with the IP address of any other managed server on the admin LAN.
- When using backup and restore, cloning, or HBA address rename, the NIC (or LAN expansion board) must support PXE boot.
- A server running a VM host can still be registered as a physical OS if its [Category] of [Server OS] is set to [Windows/Linux]. (For Windows Server 2008, etc.)
A VM host server that was mistakenly registered as a physical OS should be deleted and re-registered as a VM host.
- When registering rack mount servers on which VMware ESXi is operating, select [Disable] for [Association with server management software (ServerView)] even when using PRIMERGY servers.
After registering the server, clear the [Register agent] checkbox and register the agent after registration of the server is complete.

3. Click the [OK] button.

The registered server will be displayed in the server resource tree.

Note

- After registering the server, verify that the information registered for the remote management controller is correct. This can be verified by trying out power operations (from Resource Orchestrator) against that server. Refer to "[Chapter 14 Power Control](#)" for power operations.
- When using the HBA address rename setup service, confirm that the registered server can boot properly using the HBA address rename setup service.
If the server cannot be booted properly, ensure that the specified MAC address (NIC2) is correct.
- When an agent is registered on a VM host, all VM guests running on that VM host are also registered automatically. Whenever a VM guest is created, modified, deleted, or moved on a registered VM host, the changes are automatically updated in the server resource tree.
- The VM guest name displayed in the ROR console is either the VM name defined in its server virtualization software or the host name defined in the guest OS.
The timing at which the hostname of a guest OS is detected and displayed varies according its server virtualization software. For details, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".
- It is recommended not to use duplicate names for physical OSs, VM hosts, and VM guests. If duplicated names are used, those resources cannot be managed from the command-line.
- When registering a server on which the agent was installed, it is necessary to either reboot the server or restart its related services (explained in the "2.2 Starting and Stopping Agents" in the "Operation Guide VE") after server registration. This step has to be done before running any image operation (system image backup or cloning image collection).
For details on how to restart the agent, refer to "2.2 Starting and Stopping Agents" in the "Operation Guide VE".

7.4.2 HBA address rename Settings

This section explains the HBA address rename settings.

Use the following procedure to configure HBA address rename settings.

The HBA address rename function allows the admin server to control the WWNs set on a managed server's HBAs. Since the admin server carried over these settings when performing maintenance on or switching managed servers, it is not necessary to set the storage side configuration again.

Use of the HBA address rename function requires registering specific settings for each managed server in advance.



- The HBA address rename function is not available if ServerView Deployment Manager is used on the admin LAN. For details, refer to "B.2 Co-Existence with ServerView Deployment Manager" in the "Setup Guide VE".
- For servers which already have server switchover configured, when configuring or changing HBA address rename, the following conditions must be met:
 - Primary servers with HBA address rename configured
 - Spare servers with the server switchover method HBA address rename configured

For any servers that do not meet these conditions, cancel any existing recovery settings before enabling the HBA address rename function on a server.

- HBA address rename and VIOM cannot be used together within the same chassis.

1. Storage Settings

Refer to "8.2 Configuring the Storage Environment" in the "Design Guide VE" to configure the storage.

When altering the configuration of a storage device already used by active servers, ensure those servers are powered off before performing any configuration changes.

2. Settings for the HBA address rename Function

1. On the ROR console server resource tree, right-click the target server (or the physical OS or VM host on the server), and select [Modify]-[HBA Address Rename Settings] from the popup menu.

The [HBA Address Rename Settings] dialog is displayed.

2. Define the following settings:

WWNN

Specify the WWNN value provided by the "I/O virtualization Option".

The admin server generates WWPNS automatically from the values that are input into the WWNN and the number of HBA ports.

HBA ports

Specify the following values according to the system configuration.

- To create a single-path configuration, specify "1".

For details, refer to "[Figure 7.3 Procedures for Single-path Configurations](#)".

- To create a multi-path configuration, specify "2".

However, it is necessary to specify "1" during installation of the operating system. Specify "2" and reconfigure HBA address rename settings after setting up the multi-path driver.

For details, refer to "[Figure 7.4 Procedures for Multi-path Configurations](#)".

Figure 7.3 Procedures for Single-path Configurations

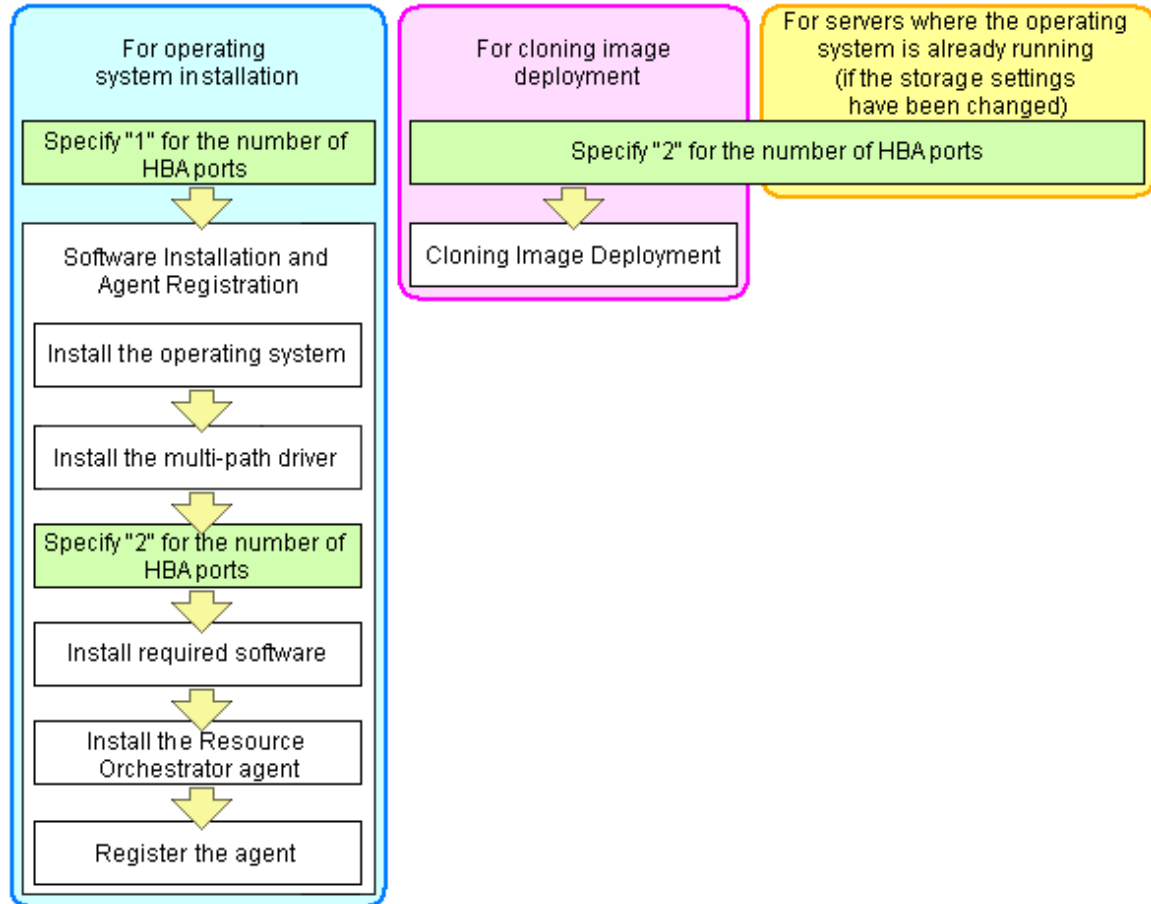
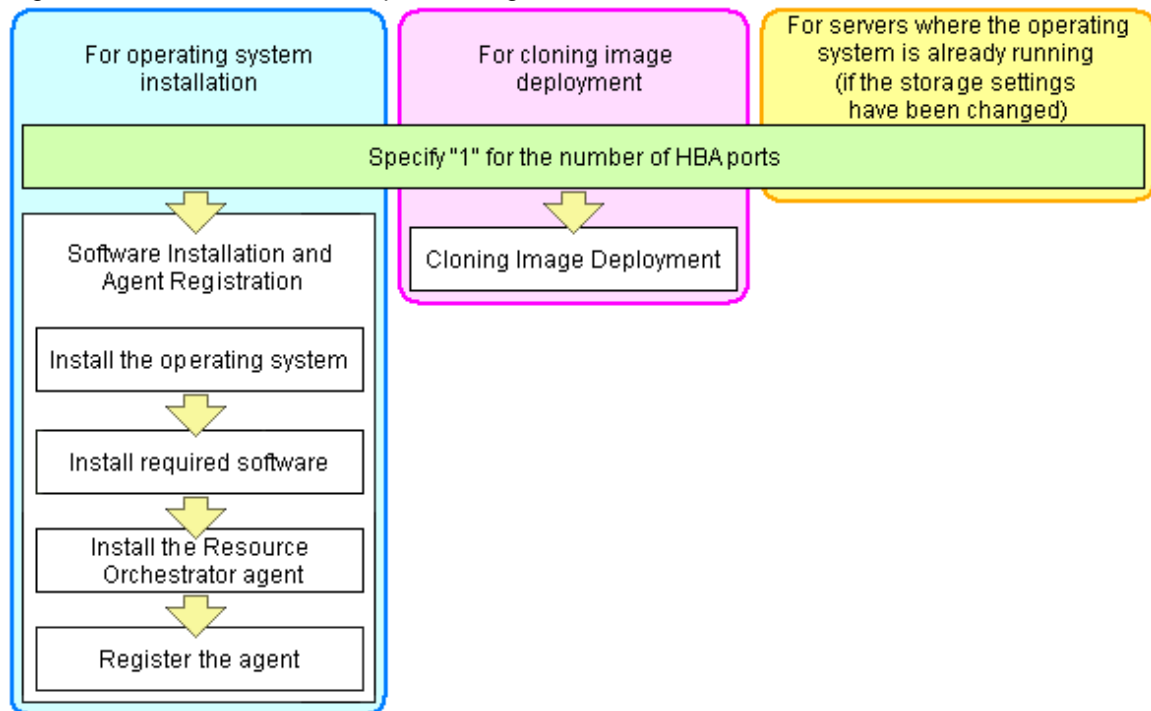


Figure 7.4 Procedures for Multi-path Configurations



Example

For a server with two ports, WWNs could be configured as follows.

WWNN value provided by "I/O Virtualization Option": 20:00:00:17:42:51:00:00

Values to set in the [HBA address rename settings] dialog

"WWNN" value 20:00:00:17:42:51:00:00

"HBA port number" on board: 2

Values actually set by the admin server on the HBA (WWPNs are generated automatically)

WWNN value for ports 1 and 2 of the HBA	:	20:00:00:17:42:51:00:00
WWPN value for HBA port 1	:	21:00:00:17:42:51:00:00
WWPN value for HBA port 2	:	22:00:00:17:42:51:00:00

Information

WWN settings are applied to managed servers during server startup.

Note

With HBA address rename, as WWNs are allocated to the I/O addresses of HBAs in descending order, the order may not match the port order listed in the HBA.

For details, refer to "C.2 WWN Allocation Order during HBA address rename Configuration" in the "Design Guide VE".

3. Check the [Restart the server] checkbox if the server is to be restarted.

Information

Select server restart in the following cases.

- When installing an operating system immediately after performing the above settings

Insert the operating system installation CD in the target server and select server restart. Once the server has been restarted, its WWN settings are applied and the operating system installation starts.

- When an operating system is already running (if changing storage settings)

Click [OK] to restart the target server and apply its WWN settings.

The server restart is not required in other cases. The WWN that has been set is enabled at the next restart.

4. Click the [OK] button.

Information

When using a server without an OS, the resource name displayed on the server resource tree is the same as that of the physical server.

5. Restart the HBA address rename setup service.

The HBA address rename setup service must be running to use the HBA address rename function.

For details on how to configure these settings, refer to "Chapter 6 Settings for the HBA address rename Setup Service" in the "Setup Guide VE".

7.4.3 Registering the Public LAN (MAC Address) Information

This section explains how to register the public LAN (MAC address) information required when using a rack mount server or a tower server.

When Coordinating with VIOM

Use the following procedure to register the public LAN (MAC address) information.

1. Definition File Settings

Configure the definition file.

For details, refer to "[7.1.2 When Managing Rack Mount or Tower Servers Using VIOM](#)".

2. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Public LAN (MAC Address) Information] from the popup menu.

The [Public LAN (MAC Address) Information] dialog is displayed.

3. Click the [Add] button to add the same number of input areas as the number of MAC addresses to register.

4. Enter the physical MAC addresses of the NICs for the public LAN.

- Enter the physical MAC addresses of the NICs, not the virtual MAC address allocated by VIOM.
- Enter the physical MAC addresses of the NICs for the public LAN in the order defined in the definition file described in step 1.

When Not Coordinating with VIOM

Use the following procedure to register the public LAN (MAC address) information.

1. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Public LAN (MAC Address) Information] from the popup menu.

The [Public LAN (MAC Address) Information] dialog is displayed.

2. Click the [Add] button to add the same number of input areas as the number of MAC addresses to register.

3. Enter the MAC address of the NIC for the public LAN.



Point

Check the value of the MAC address to enter using the remote management controller. For details, refer to the manuals provided with the hardware.



Information

To display the link information with the network device on NetworkViewer, it is necessary to register the network device as well. For details, refer to "[7.5 Registering Network Devices](#)".



Note

The MAC address used for the admin LAN is specified when registering a server.
For details, refer to "[7.4.1 Registering Rack Mount or Tower Servers](#)".

7.5 Registering Network Devices

This section explains how to register network devices.

The devices that need to be registered as network devices must meet the following conditions:

- Network devices to be monitored using the "Network monitoring" function

Resource Orchestrator supports registration of the following types of network devices.

- Firewall
- Server Load Balancer
- L2 Switches
- Ethernet Fabric

The following network devices are the targets:

- Fujitsu Converged Fabric switches
- Fujitsu PRIMERGY Converged Fabric switch blades (10Gbps 18/8+2)
- Brocade VDX 6710 series
- Brocade VDX 6720 series
- Brocade VDX 6730 series
- Brocade VDX 6740/6740T
- Brocade VDX 6940 series
- Management hosts

The following devices are the targets.

- Fujitsu IPCOM VX series

When identifying this device, it is indicated as "Management host (IPCOM VX)".

Use the following procedure to register a network device:

1. Expand the support range of network devices.
2. Create network configuration information for the network device to register.
3. Register the network device using the network configuration information created in step 1.

7.5.1 Enabling the Network Device Management Function

This section explains the procedure for enabling the network device management function.

1. Reconsider the memory capacity

When this function is enabled, an additional 600 MB of memory is required for the manager. Check the memory capacity of the manager, and mount additional memory if the current memory is insufficient.

2. Delete LAN switches

When LAN switches have been registered in the network device tree using the LAN switch discovery function, delete all such LAN switches.

3. Edit the definition file

Configure the value in the following definition file: If the definition file does not exist, create one.

Storage Location of the Definition File

[Windows Manager]

Installation_folder\SVROR\Manager\etc\customize_data\unm_mon.rcxprop

[Linux Manager]
/etc/opt/FJSVrcvnr/customize_data/unm_mon.rcxprop

Settings of the Definition File

Add the following line to the definition file.

```
ve_support_extend = true
```

4. Restart the manager.

After saving the definition file above, restart the manager.

Information

- For details on how to return the settings to the original settings, refer to "[7.5.4 Disabling the Network Device Management Function](#)".
- When configuring this setting, replace the "LAN switch" used in the manuals of Resource Orchestrator with "network device".

7.5.2 Creating the Network Configuration Information (XML Definition)

Create the network configuration information (XML definition) necessary for registering the network device to be managed by Resource Orchestrator.

See

For how to create network configuration information (XML definitions), refer to "[7.7 When Managing Network Devices as Resources](#)" in the "Design Guide VE".

7.5.3 Registering Network Devices

This section explains how to register network devices.

When Registering Individual Network Devices

Use the `rcxadm netdevice create` command to register network devices defined in network configuration information (XML definition).

When Batch Registering Multiple Network Devices

Use the `rcxadm netconfig import` command to register network devices defined in network configuration information (XML definition).

See

- For details on the `rcxadm netdevice` command, refer to "3.3 `rcxadm netdevice`" in the "Reference Guide (Command) VE".
- For details on the `rcxadm netconfig` command, refer to "3.2 `rcxadm netconfig`" in the "Reference Guide (Command) VE".
- When registering an unsupported network device, add the model of the network device to be registered to the model definition for network devices, and register the network device after updating the model definition file.

For information about the model definition file, refer to "[8.2 Network Device Model Definition](#)" in the "Reference Guide (Command) VE".

Note

- When registering network devices, if multiple network devices are registered with the same resource name, the following problems will occur. Make sure to use a name that is unique on the system when registering a network device.
 - Network devices cannot be identified by name in the resource list.
 - Modification of a network device using the `rcxadm netdevice modify` command is not possible because the target network device cannot be identified.

Change the name of the network device to modify the settings of, referring to "[9.4 Changing Settings of LAN Switch Blades and LAN Switches](#)" and then modify the settings using the `rcxadm netdevice modify` command.
 - Deletion of a network device using the `rcxadm netdevice delete` command is not possible because the target network device cannot be identified.

Refer to "[11.4.2 Deleting Network Devices](#)" to delete the target network device.
- Under redundancy configuration, it is only enabled for the same vendor and model. For this reason, registration should be made specifying the same group ID as the network device that has been already registered for redundancy configuration. During the registration confirmation process, if the network device has a different vendor name and device name from the registered one, registration as a network device will fail.

7.5.4 Disabling the Network Device Management Function

This section explains the procedure for reverting the settings of "[7.5.1 Enabling the Network Device Management Function](#)".

1. Delete network devices

Delete all network devices registered in the network device tree.

2. Edit the definition file

Configure the value in the following definition file: If the definition file does not exist, create one.

Storage Location of the Definition File

[Windows Manager]

Installation_folder\SVROR\Manager\etc\customize_data\unm_mon.rcxprop

[Linux Manager]

/etc/opt/FJSVrcvmt/customize_data/unm_mon.rcxprop

Settings of the Definition File

Perform either of the following:

- Modify the `ve_support_extend` parameter value to false
- Delete the definition line of the `ve_support_extend` parameter.

3. Restart the manager.

After saving the definition file above, restart the manager.

7.6 When Using PRIMEQUEST Servers

This section explains how to register resources when using PRIMEQUEST servers.

- Registering Chassis (For PRIMEQUEST Servers)
- Registering PRIMEQUEST Servers

7.6.1 Registering Chassis (For PRIMEQUEST Servers)

This section explains how to register chassis when using PRIMEQUEST servers.

By registering a chassis, every partition mounted in the chassis will be automatically detected and displayed as an unregistered server in the server resource tree. Register these managed servers individually.

For details on registering servers, refer to "7.6.2 Registering PRIMEQUEST Servers".

Use the following procedure to register a chassis:

1. In the ROR console server resource tree, right-click [Server Resources], and select [Register]-[PRIMEQUEST] from the popup menu.

The [Register Chassis] dialog is displayed.

2. Perform the following settings:

Admin LAN (IP address)

Enter the virtual IP address that was set on the chassis management board.

Enter the IP address using periods ".".

Chassis name

Enter a name to assign to this chassis.

Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").

SNMP Community

Enter the SNMP community that was set on the chassis management board.

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

Remote server management

User ID

Enter the ID of a remote server management user account with administrative authority over this managed server.

This user ID must be between 8 and 16 alphanumeric characters long.

A user ID with at least administrator privileges within the remote server management must be specified.

Password

Enter the password of the above remote server management user account.

This password must be between 8 and 16 alphanumeric characters long.



Note

The [User ID] and [Password] of [Remote server management] are different from the user name and password used to log in on the Web-UI for management board.

3. Click the [OK] button.

The mounted chassis will be displayed under the server resource tree.

Any partition mounted within this chassis will be detected automatically and shown as: [*chassis_name-partition_number*[Unregistered]].

The only operation available for those unregistered partitions is server registration, while the ROR console can only display their hardware statuses and properties.

If the manager is installed on one of those partitions, this partition will be shown as: [*chassis_name-partition_number*[Admin Server]].

In that case, server registration will not be available for the admin server. Its properties will be displayed in the ROR console.

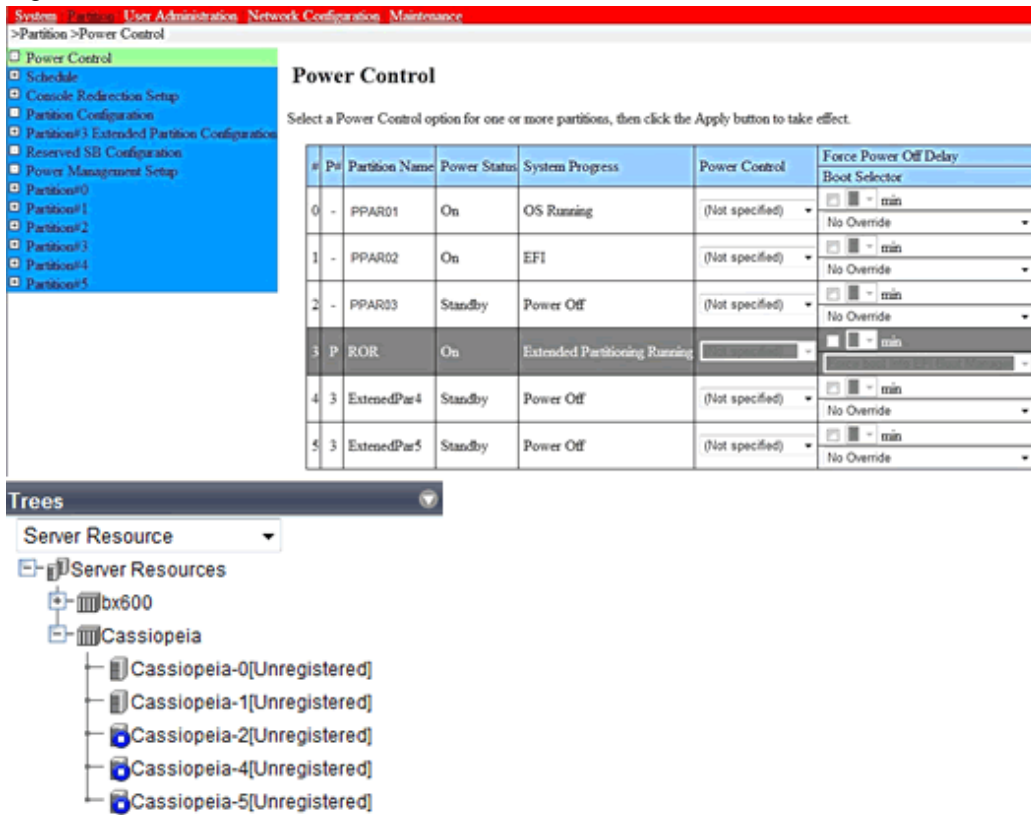


Information

For the PRIMEQUEST 2000 series, when the chassis is registered, partitions of PPAR and Extended Partition are detected automatically and they are displayed as unregistered servers in the server resource tree. However, PPAR with Extended Partitioning Mode set to "Enable" are not displayed.

When [Extended Partitioning Mode] of PPAR#3 is set to "Enable" and Extended Partition#4 and #5 are configured from PPAR#3 as shown in the figure below, PPAR#3 is not displayed in the server resource tree after the chassis is registered. Extended Partition#4 and #5 configured from PPAR#3 are displayed in the server resource tree.

Figure 7.5 About Auto-detection of Partitions on the PRIMEQUEST 2000 Series



7.6.2 Registering PRIMEQUEST Servers

This section explains how to register servers when using PRIMEQUEST servers.

For the PRIMEQUEST 2000 series, the following partitions can be registered as managed servers.

- PPAR partitions with Extended Partitioning Mode set to "Disable"
- Extended Partitions configured on a PPAR partition with Extended Partitioning Mode set to "Enable"

Do not change Extended Partitioning Mode or PPAR Extended Partition configuration after registering the server.

If the Extended Partitioning Mode of a PPAR is changed to "Enable" after server registration, [Extended Partitioning Mode] is displayed for that PPAR, but it cannot be used as is.

If you want to change the Extended Partitioning Mode or Extended Partition configuration, delete the server from managed server on the ROR console first. Change the Extended Partitioning Mode or Extended Partition configuration and then register the server again.

Use the following procedure to register servers:

1. In the ROR console server resource tree, right-click an unregistered server blade or partition in the target chassis, and select [Register]-[Server] from the popup menu.

The [Register Server] dialog is displayed.

2. Perform the following settings:

Physical Server Name

Enter a name to assign to this physical server.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

Admin LAN (IP address)

Enter the IP address used by this server on the admin LAN.

Enter the IP address of this server's admin LAN network interface.

The Agent will not be registered automatically, but can be manually registered after server registration if necessary. After registering servers, register agents as required.

Boot option

Specify the boot option configured from BIOS when installing the OS.

- For UEFI

Select [UEFI].

- For Legacy Boot

Select [Legacy boot].

By default, [UEFI] is selected.

These settings can be changed after server registration.

For details on how to modify these settings, refer to "[9.1.10 Changing Boot Options](#)".

3. Click the [OK] button.

The registered server will be displayed in the server resource tree.



Note

For PRIMEQUEST, after IOU replacement or immediately after powering on, the MAC Address for each partition that is obtained from the MMB becomes FF:FF:FF:FF:FF:FF. As correct LAN MAC addresses are obtained from the MMB after each partition is powered on, perform server registration after that.

7.7 When Using Fujitsu M10/SPARC Enterprise

This section explains how to register resources when using Fujitsu M10/SPARC Enterprise.

- Registering Chassis (SPARC Enterprise M4000/M5000/M8000/M9000) or Fujitsu M10-4S
- Registering SPARC Enterprise (M3000/T Series) servers or Fujitsu M10 M10-1/M10-4

7.7.1 Registering Chassis (SPARC Enterprise M4000/M5000/M8000/M9000) or Fujitsu M10-4S

This section explains how to register chassis when using SPARC M10/SPARC Enterprise servers.

By registering a chassis, every partition mounted in the chassis will be automatically detected and displayed as an unregistered server in the server resource tree. Register these managed servers individually.

For details on registering managed servers, refer to "[7.7.2 Registering SPARC Enterprise \(M3000/T Series\) servers or Fujitsu M10 M10-1/M10-4](#)".

Use the following procedure to register a chassis:

1. In the ROR console server resource tree, right-click [Server Resources], and select as below.
 - For SPARC Enterprise M4000/M5000/M8000/M9000 servers
Select [Register]-[SPARC Enterprise (Partition Model)] from the popup menu.

- For Fujitsu M10-4S

Select [Register]-[SPARC M10-4S] from the popup menu.

The [Register Chassis] dialog is displayed.

2. Perform the following settings:

Admin LAN (IP address)

Enter the IP address of the master XSCF of the target chassis.

Enter the IP address using periods ".".

Chassis name

Enter a name to assign to this chassis.

Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").

SNMP Community

Enter the SNMP community of the XSCF used to manage the target chassis.

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

Remote management controller (XSCF)

User ID

Enter the ID of an XSCF user account with administrative authority over the target chassis.

Enter a string of up to 31 alphanumeric characters, hyphens ("-"), and underscores ("_"). This name must start with an alphabet character.

This user should have "platadm" privileges for XSCF.

The user ID reserved for the system cannot be used. Create another user ID.

For details, refer to the XSCF manuals.

Password

Enter the password of an XSCF user account with administrative authority over the target chassis.

Enter up to 32 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols.

"! ", "@", "#", "\$", "%", "^", "&", "*", "[", "]", "{", "}", "(", ")", "-", "+", "=", "~", ";", ">", "<", "/", "", "?", ";", ":"

3. Click the [OK] button.

The mounted chassis will be displayed under the server resource tree.

Any partition mounted within this chassis will be detected automatically and shown as: [*chassis_name-partition_number*[Unregistered]].

The only operation available for those unregistered partitions is server registration, while the ROR console can only display their hardware statuses and properties.

7.7.2 Registering SPARC Enterprise (M3000/T Series) servers or Fujitsu M10 M10-1/M10-4

This section explains the methods for registering SPARC Enterprise (M3000/T series) and Fujitsu M10-1/M10-4.

This section also describes how to register servers in SPARC Enterprise M4000/M5000/M8000/M9000 and Fujitsu M10-4S chassis.

[Solaris Zones] [OVM for SPARC]

When the Logical Domains Manager daemon is enabled, VM hosts can be registered as Solaris Zones by configuring the definition files.

For details, refer to "9.2.3 Definition Files of Each Product" in the "Design Guide VE".

Use the following procedure to register servers:

1. The dialog is displayed.

- For SPARC Enterprise (M3000/T series)

In the ROR console server resource tree, right-click [Server Resources], and select as below.

Select [Register]-[SPARC Enterprise (M3000/T Series)] from the popup menu.

The [Register SPARC Enterprise] dialog is displayed.

- For Fujitsu M10-1/M10-4

In the ROR console server resource tree, right-click [Server Resources], and select as below.

Select [Register]-[SPARC (M10-1/M10-4)] from the popup menu.

The [Register SPARC (M10-1/M10-4)] dialog is displayed.

- For SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S

Right-click the server in the chassis, and select as follows:

Select [Register]-[Server] from the popup menu.

The [Register Server] dialog is displayed.

2. Perform the following settings:

When using SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S, the items related to Remote Management Controller are not displayed.

When using Fujitsu M10-1/M10-4, the items related to Controller type are not displayed.

- Physical server name
- [Register agent] checkbox
- Remote management controller (ILOM/XSCF)
 - Controller type
 - IP address
 - User ID
 - Password
 - SNMP Community
- Admin LAN
 - IP address

For SPARC Enterprise M4000/M5000/M8000/M9000 servers and Fujitsu M10-4S, "admin LAN (IP address)" is displayed.

With Agent Registration

- OS
 - Type
 - User ID
 - Password

Physical Server Name

Enter a name to assign to this physical server.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

[Register agent] checkbox

- Without Agent Registration

Automatic registration of agents is not performed after server registration.

After registering servers, register agents as required.

If registering agents, register agents after checking the product name is displayed in the General Area of [Resource Details] tab.

Executing [Update] acquires the latest information.

- With Agent Registration

Agents are automatically registered after server registration is completed.

Remote management controller (ILOM/XSCF)

For SPARC Enterprise M3000 servers

Controller type

Select [XSCF].

IP address

Enter the IP address of this server's remote management controller (XSCF).

User ID

Enter the ID of a XSCF user account with administrative authority over this server.

Enter up to 31 characters, including alphanumeric characters, underscores ("_"), or hyphens ("-"). This name should start with an alphabet character.

This user should have "platadm" privileges for XSCF.

The user ID reserved for the system cannot be used. Create another user ID.

For details, refer to the XSCF manuals.

Password

Enter the password of the above XSCF user account.

Enter up to 32 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols. "!", "@", "#", "\$", "%", "^", "&", "*", "[", "]", "{", "}", "(, ")", "-", "+", "=", "~", ";", ">", "<", "/", "", "?", ";", ":"

SNMP Community

Enter the SNMP community that was set on this server's remote management controller (XSCF).

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

For SPARC Enterprise T series

Controller type

Select [ILOM].

IP address

Enter the IP address of this server's remote management controller (ILOM).

User ID

Enter the ID of an ILOM user account with administrative authority over this server.

Enter between 4 and 16 characters, including alphanumeric characters, underscores ("_"), or hyphens ("-"). This name should start with an alphabet character.

This user ID should have "Admin" privileges for ILOM.

Password

Enter the password of the above ILOM user account.

Enter between 8 and 16 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols. "!", "@", "#", "\$", "%", "^", "&", "*", "[", "]", "{", "}", "(, ")", "-", "+", "=", "~", ";", ">", "<", "/", "", "?", ";", ":"

SNMP Community

Enter the SNMP community name of this server's remote management controller (ILOM).

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

Admin LAN

IP address

Enter the IP address used by this server on the admin LAN.

For SPARC Enterprise M4000/M5000/M8000/M9000 servers and Fujitsu M10-4S, "admin LAN (IP address)" is displayed.

Server OS

Category

Select the appropriate server OS category (Physical OS or VM host).

Selecting [VM Host] activates the user name and password input fields.

Those refer to the user name and password entered during installation of this VM host.

For a Physical OS

Select [Solaris].

For a VM Host

Select [VM Host], and enter the VM host login account information.

This login account information will be used by Resource Orchestrator to control and communicate with the registered VM host.



[OVM for SPARC]

Server switchover is only possible when [VM host] is selected and it is registered as OVM for SPARC.

User ID

Enter the user ID to log in to the VM host.

Specify the user ID "root" which has VM host administrator authority.



When using Solaris 11, if user accounts are created during installation, root will be registered for the role. Therefore, the root account cannot be used for login. Log in using the user account, and use the su command to become a root user.

When using Solaris 10 or earlier versions, execute the following as root in order to change to enable direct login using the root account. In this case, the root role is recognized as a root user.

```
rolemod -K type=normal root <RETURN>
```

Use SSH connection with the root account, and check if communication with the VM host is possible.

If communication fails, modify the configuration. For details, refer to the manual of the basic software.

Password

Enter the password of the user to log in to the VM host.

Enter up to 256 characters, including alphanumeric characters, blank spaces (" "), and symbols.

3. Click the [OK] button.

The registered server will be displayed in the server resource tree.



After registering the server, verify that the information registered for the remote management controller is correct. This can be verified by trying out power operations (from Resource Orchestrator) against that server. Refer to "[Chapter 14 Power Control](#)" for power operations.

7.7.3 Registering Guest Domains on Oracle VM for SPARC

This section explains the methods for registering guest domains on Oracle VM for SPARC.

When a guest domain is registered as a VM host, information for zones created on the guest domain is also displayed.

Use the following procedure to register VM hosts. Perform it with the VM guest started.

1. In the ROR console server resource tree, right-click the VM guest in [Server Resources], and select [Register]-[Agent] from the popup menu.

The [Register VM Host] dialog is displayed.

2. To use this feature, the following settings must be defined:

Admin LAN IP Address

Enter the IP address of the XSCF of the target chassis.

Enter the IP address using periods ".".



- After registering the guest domain, confirm that the VM guest is displayed under the VM host in the guest domain of Oracle VM for SPARC, and that the same VM guest is in the Solaris Zone operating on the actual server.
When different VM guests are displayed, check the registered IP address and then change it to the correct one.

User ID

Enter the user ID to log in to the guest domain.

Specify the user ID "root" which has guest domain administrator authority.

Password

Enter the password of the user to log in to the VM host.

Enter up to 256 characters, including alphanumeric characters, blank spaces (" "), and symbols.

3. Click the [OK] button.

The registered VM Host will be displayed in the server resource tree.

7.8 Registering Power Monitoring Devices

This section explains how to register power monitoring devices.

Registering power monitoring devices (PDU or UPS) enables monitoring of power consumption.

Use the following procedure to register power monitoring devices.

1. In the ROR console power monitoring device tree, right-click [Power Monitoring Devices] and select [Register]-[Power Monitoring Device] from the popup menu.

The [Register Power Monitoring Device] dialog is displayed.

2. Perform the following settings:

Device name

Enter a name to assign to this power monitoring device. When exporting power consumption data, use this name to select power monitoring devices for which to export data.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

Admin LAN (IP address)

Enter the IP address that was set on this power monitoring device. This IP address will be used to collect power consumption data from this power monitoring device.

SNMP Community

Enter the SNMP community that was set on this power monitoring device.

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

This SNMP community will be used to collect power consumption data from this power monitoring device (via SNMP protocol).

Voltage

Enter the voltage (V) supplied to this power monitoring device. Enter a number between 10 and 999. Power consumption data is calculated using the electrical current value obtained from this power monitoring device and its specified voltage.

Comment

Enter a comment that describes this power monitoring device.

Enter up to 128 alphanumeric characters or symbols (ASCII characters 0x20 to 0x7e).



.....
A line break is counted as one character.
.....

3. Click the [OK] button.

The registered power monitoring device will be displayed under the power monitoring devices tree.

If collection of power data is disabled in the option settings, data will not be collected even if power monitoring devices are registered. Change power data collection settings according to "[9.7.1 Changing Environmental Data Settings](#)".



.....
Resource Orchestrator is not aware of the relationship between power monitoring devices and actual server resources. Make sure to register the power monitoring devices that are connected to the server resources for which you want to monitor power consumption.
.....

7.9 Registering Admin LAN Subnets

This section explains how to perform admin LAN subnet registration.

Registering admin LAN subnets enables management of managed servers belonging to subnets other than that of the admin LAN.

Use the following procedure to register an admin LAN subnet.

1. From the ROR console menu, select [Settings]-[Admin LAN Subnet].

The [Admin LAN Subnet] dialog is displayed.

2. Click the [Add] button.

The [Add Admin LAN Subnet] dialog is displayed.

3. Perform the following settings:

Subnet name

Set the subnet name for registration.

Enter a character string beginning with an alphabetic character and containing up to 16 alphanumeric characters, underscores ("_"), hyphens ("-"), and periods (".").

Network address

Configure the network address of the subnet used as the admin LAN.

Enter valid values for the network address.

Subnet mask

Enter valid values for the subnet mask.

Gateway

Enter the settings for the gateway used for communication with the admin server on the admin LAN.

- Click the [OK] button.

Information

When registering an admin LAN subnet for the first time, change the simplified DHCP service for Resource Orchestrator to the OS standard DHCP Service.

Resource Orchestrator takes exclusive possession of the OS standard DHCP Service.

Note

- It is necessary to perform network settings for each admin LAN subnet so that managed servers belonging to subnets other than the admin LAN can communicate with the admin server.
For details on how to configure the network settings, refer to "7.6 Configuring the Network Environment" in the "Design Guide VE".
- In a clustered manager configuration, when registering an admin LAN subnet for the first time, perform "[Settings for Clustered Manager Configurations](#)".
- When managing a managed server in a separate subnet from the admin server, an OS standard DHCP server is necessary.
For details, refer to "2.1.1.2 Software Preparation and Checks" or "2.1.2.2 Software Preparation and Checks" in the "Setup Guide VE".

Settings for Clustered Manager Configurations

The following configuration is necessary only when registering an admin LAN subnet for the first time.

[Windows Manager]

Information

When configuring a cluster system in an environment that already has an admin LAN registered, perform steps 5 to 10, and 13.

- Allocate the shared disk to the primary node.

Right-click [Services and Applications]-[RC-manager] on the Failover Cluster Management tree, and select [Move this service or application to another node]-[1 - Move to node *node_name*] from the displayed menu.

The name of the primary node is displayed for *node_name*.

- Delete the registry replication settings from the following "Services and Applications" of the manager.

Based on the following table, delete registry replication for the resources.

- x64

Resources for Deletion	Registry Key
Deployment Service	[HKEY_LOCAL_MACHINE]\SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard\ResourceDepot
	[HKEY_LOCAL_MACHINE]\SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard\DatabaseBroker\Default

Resources for Deletion	Registry Key
PXE Services	[HKEY_LOCAL_MACHINE]\SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard\DHCP
	[HKEY_LOCAL_MACHINE]\SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard\PXE\ClientBoot\

- x86

Resources for Deletion	Registry Key
Deployment Service	[HKEY_LOCAL_MACHINE]\SOFTWARE\Fujitsu\SystemcastWizard\ResourceDepot
	[HKEY_LOCAL_MACHINE]\SOFTWARE\Fujitsu\SystemcastWizard\DatabaseBroker\Default
PXE Services	[HKEY_LOCAL_MACHINE]\SOFTWARE\Fujitsu\SystemcastWizard\DHCP
	[HKEY_LOCAL_MACHINE]\SOFTWARE\Fujitsu\SystemcastWizard\PXE\ClientBoot\

Perform the following procedure for each of the above resources:

- a. Right-click the target resource on [Other Resources] on the [Summary of RC-manager] displayed in the middle of the [Failover Cluster Management] window, and select [Properties] from the displayed menu.
The [*target_resource* Properties] window will be displayed.
 - b. From the [Root Registry Key] displayed on the [Registry Replication] tab, select the above registry keys and click the [Remove] button.
The selected key is removed from [Root Registry Key].
When deleting the second registry key, repeat step b.
 - c. Click the [Apply] button.
The settings are applied.
 - d. Click [OK] to close the dialog.
3. Take the following services of the "Services and Applications" for the manager offline.
 - Deployment Service
 - TFTP Service
 - PXE Services
 4. Register the admin LAN subnet.
 5. On the primary node, bring the shared disk of the manager online, and take all other cluster resources offline.
 6. Open [Services] from [Administrative Tools] on the Windows Control Panel, and then configure the startup type of DHCP Server service as "Manual" on the [Services] window.
 7. From the [Services] window, stop the DHCP Server service.
 8. Using Explorer, copy the following folder from the local disk of the primary node to the folder on the shared disk.

Local Disk (Source)	Shared Disk (Target)
%SystemRoot%\System32\dhcp	<i>Drive_name</i> :Fujitsu\ROR\SVROR\dhcp

Example

When the OS has been installed on the C drive, it is %SystemRoot%C:\Windows.

9. Configure access rights for the folder for the DHCP Server that was copied to the shared disk. Execute the following command using the command prompt of the primary node:

```
>cacls Drive_name:\Fujitsu\ROR\SVROR\dhcp /T /P "NT AUTHORITY\SYSTEM:F" "BUILTIN\nAdministrators:F" "NT SERVICE\DHCPserver:F" <RETURN>
```

10. Add the DHCP Server to "Services and Applications" for the manager.
 - a. Right-click [Services and Applications]-[RC-manager], and select [Add a resource]-[Other Resources]-[1 - Add a DHCP Service] from the displayed menu.

A [New DHCP Service] will be created in the [DHCP Service] in [Summary of RC-manager].
 - b. Right-click the [New DHCP Service], and select [Properties] from the popup menu.

The [New DHCP Service Properties] window will be displayed.
 - c. Change the [Resource Name] on the [General] tab, and set the paths given in the following table.

Item	Value to Specify
Database path	<i>Drive_name</i> :\Fujitsu\ROR\SVROR\dhcp\
Monitoring file path	<i>Drive_name</i> :\Fujitsu\ROR\SVROR\dhcp\
Backup path	<i>Drive_name</i> :\Fujitsu\ROR\SVROR\dhcp\backup\

After making the settings, click the [Apply] button.

From here, the explanation is made assuming that [Resource Name] was set as [DHCP Server].

- d. On the "Resource" of the [Dependencies] tab, select the following name, and select AND from "AND/OR".
 - Shared Disks
 - Network Name
 - Admin LAN IP Address
 - e. Click the [Apply] button.
 - f. Click the [OK] button.
11. Configure the registry replication settings from the following "Services and Applications" of the manager.

Following the table in step 2, set replication of the registry of the resource.

Perform the following procedure for each resource.

- a. Right-click the target resource on [Other Resources] on the [Summary of RC-manager] displayed in the middle of the [Failover Cluster Management] window, and select [Properties] from the displayed menu.

The [*target_resource* Properties] window will be displayed.
- b. Click the [Add] button on the [Registry Replication] tab.

The [Registry Key] window will be displayed.
- c. Configure the above registry key in [Root registry key].
- d. Click the [OK] button.

When configuring the second registry key as well, repeat steps b to d.
- e. After configuration of the registry keys is complete, click the [Apply] button.
- f. Click [OK] to close the dialog.

12. Configure the dependencies of the resources of the manager "service or application".

Configure the dependencies of resources based on the following table.

If some resources have been configured, select AND from [AND/OR] and add the dependent resource.

Resource for Configuration	Dependent Resource
PXE Services	DHCP Server

13. Restart the manager.

Right-click [Services and Applications]-[RC-manager] on the Failover Cluster Management tree, and select [Bring this service or application online] from the displayed menu.

[Linux Manager]



Information

When configuring a cluster system in an environment that already has an admin LAN registered, in addition to the installation procedure for the cluster system, perform steps 1 to 2 and 4 to 11.

In that case, set the manager that is operating now as the primary node of the cluster system.

1. Stop cluster applications.

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

2. Mount the shared disk (Primary node)

Mount the shared disk for managers on the primary node.

3. Stop automatic startup of the dhcpd service (Primary node and Secondary node)

Disable automatic startup of the dhcpd service by executing the following command.

```
# chkconfig dhcpd off <RETURN>
```

4. Copy dynamic disk files (Primary node)

- a. Copy the files and directory on the local disk of the primary node to the shared disk for managers.

Execute the following command:

```
# tar cf - copy_target | tar xf - -C Shared_disk_mount_point/Fujitsu/ROR/SVROR <RETURN>
```

- Files and Directory to Copy

- /etc/dhcpd.conf (*1)

- /etc/dhcp/dhcpd.conf (*2)

- /var/lib/dhcpd

*1: When using Red Hat Enterprise Linux 5

*2: When using Red Hat Enterprise Linux 6

- b. After copying the files, change source_file_name by executing the following command.

Make sure a name like "source_file_name_old" is specified for the target_file_name.

```
# mv -i source_file_name target_file_name <RETURN>
```

5. Configure symbolic links for the shared disk (Primary node)

Configure symbolic links from the files and directory on the local disk of the primary node for the files on the shared disk.

Execute the following command:

```
# ln -s shared_disk local_disk <RETURN>
```

Table 7.1 Files to Link

Shared Disk	Local Disk
<i>Mount_destination_of_shared_disk</i> /Fujitsu/ROR/SVROR/etc/dhcpd.conf (*1)	/etc/dhcpd.conf
<i>Mount_destination_of_shared_disk</i> /Fujitsu/ROR/SVROR/etc/dhcp/dhcpd.conf (*2)	/etc/dhcp/dhcpd.conf
<i>Mount_destination_of_shared_disk</i> /Fujitsu/ROR/SVROR/var/lib/dhcpd	/var/lib/dhcpd

*1: When using Red Hat Enterprise Linux 5

*2: When using Red Hat Enterprise Linux 6

6. Change the settings of the DHCP service (Primary node)

Change the following files when registering the admin LAN subnet, and set the takeover logical IP address after the change to the DHCP server.

File name

- Red Hat Enterprise Linux 5
/etc/dhcpd.conf
- Red Hat Enterprise Linux 6
/etc/dhcp/dhcpd.conf

Add the following lines, and set the takeover logical IP address.

```
option dhcp-server-identifier takeover logical IP address;
```



Example

When the takeover logical IP address is 192.168.4.100

```
#  
# DHCP Server Configuration file.  
# see /usr/share/doc/dhcp*/dhcpd.conf.sample  
#  
ddns-update-style none;  
option vendor-class-identifier "PXEClient";  
option dhcp-server-identifier 192.168.4.100; # This line is added.  
subnet 192.168.4.0 netmask 255.255.255.0 {
```

7. Unmount the shared disk. (Primary node)

Unmount the shared disk for managers from the primary node.

8. Mount the shared disk (Secondary node)

Mount the shared disk for managers on the secondary node.

9. Back up files and configure symbolic links for the shared disk (Secondary node)

- a. Perform step b. of step 4 and back up the files on the local disk.
- b. Perform step 5 and configure symbolic links for the shared disk.

10. Unmount the shared disk. (Secondary node)

Unmount the shared disk for managers from the secondary node.

11. Start cluster applications.

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

12. Register the admin LAN subnet.

7.10 Registering ETERNUS SF Storage Cruiser

This section explains how to register ETERNUS SF Storage Cruiser.

Registering ETERNUS SF Storage Cruiser enables server switchover integrated with Fibre Channel switch zoning using ESC and host affinity reconfiguration on storage devices.

This operation is necessary when using server switchover (storage affinity switchover method) functions on managed servers (for Solaris) in SAN boot environments.

ETERNUS SF Storage Cruiser can be registered using the `rcxadm storagemgr register` command.

For details on the `rcxadm storagemgr register` command, refer to "5.13 `rcxadm storagemgr`" in the "Reference Guide (Command) VE".

7.11 Registering LAN Switches

This section explains how to register LAN switches.

Use the following procedure to register LAN switches:

1. Discover LAN switches. For instructions, refer to "[Discovery](#)".
2. Register LAN switches displayed in the network device tree. For instructions, refer to "[Register](#)".

Note

- The registration method described here can be used only for the following LAN switches. When registering other LAN switches, use the method described in "[7.5 Registering Network Devices](#)".
 - Cisco Catalyst 2950 series
 - Cisco Catalyst 2960 series
 - Cisco Catalyst 3560 series
 - Cisco Catalyst 3750 series

Discovery

1. From the ROR console menu, select [Tools]-[Topology]-[Discover LAN switches].

The [Discover LAN Switches] dialog is displayed.

2. Perform the following settings:

Start address

Enter the start IP address of the network where to discover LAN switches.

Enter the IP address using periods ".".

Subnet mask

Enter the subnet mask of the network where to discover LAN switches.

Enter the IP address using periods ".".

Addresses in range

Enter the number of addresses to scan for LAN switches.

Enter a number greater than 1.

The maximum number of addresses is determined by the number of hosts allowed by the subnet mask.

Example

If subnet mask is "255.255.255.0", the number of addresses in the specified range could be any value between 1 and 256.

SNMP Community

Enter the SNMP community that was set on this LAN switch.

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

3. Click the [OK] button.

Resource Orchestrator starts scanning for LAN switches within the specified network range.

Discovered LAN switches will be displayed under the network device tree with the status [[Unregistered]].

Register

1. In the ROR console network device tree, right-click a discovered resource, and select [Register]-[LAN Switch] from the popup menu.

The [Register LAN Switch] dialog is displayed.

2. Perform the following settings:

LAN switch name (Node name for management)

Enter the name to assign to this LAN switch.

Enter up to 32 characters, including alphanumeric characters (upper or lower case), underscores ("_"), hyphens ("-"), or periods (".").

By default, the name of a discovered LAN switch will be set to its system name or to its IP address if the system name could not be detected.

SNMP Community

Enter the SNMP community that was set on this LAN switch.

Either select [public] or enter an arbitrary string.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

3. Click the [OK] button.

The registered LAN switch will be displayed in the network device tree.

Note

It is possible to set an automatically detected IP address to another unregistered LAN switch. However, this will result in the Resource Orchestrator configuration being inconsistent with the actual network configuration.

If a LAN switch was registered with the IP address of another network device, delete the registered LAN switch following the instructions given in "[11.4.2 Deleting Network Devices](#)", then perform Discover and Register again.

Chapter 8 Changing Admin Server Settings

This chapter explains how to change the settings for the admin server.

8.1 Changing Admin IP Addresses

Use the following procedure to change the IP address used on the admin LAN by the admin server.

1. Log on to the admin server with OS administrative privileges.
2. Stop the manager.
Stop the manager, referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".
3. Change the SNMP trap destination set for the management blade and LAN switch blades.
Set the SNMP trap destination to the new IP address of the admin server.

Note

Depending on the LAN switch blade used, setting an SNMP trap destination may restrict SNMP access to the LAN switch. When specifying Converged Fabric mode of PY CB Eth Switch 10/40Gb 18/8+2 and the virtual domain representative IP address of the fabric, and registered LAN switch blades, SNMP traps cannot be received. When making LAN switch blades in a clustered manager configuration the target of management, set the physical IP addresses of both the primary and secondary nodes as SNMP trap destinations. If the LAN switch blade is set to only grant access from known IP addresses, be sure to give permissions to the physical IP addresses of both the primary and secondary cluster nodes, as is done with trap destination settings. For details, refer to the manual of the LAN switch blade to be used.

4. Change the IP address set within the operating system.
Change the IP address following the instructions given in the operating system's manual. If the admin LAN has been made redundant, change the admin IP address set in the following tools or products.
 - PRIMECLUSTER GLS
 - BACS
 - Intel PROSet

Refer to the manual of each product for usage details.

In a clustered manager configuration, change the cluster IP address according to the instructions given in "[Changing the IP Address of a Clustered Manager](#)".

5. Change the IP address registered as the manager's admin IP address.

Use the `rcxadm mgrctl modify` command to set a new IP address.

[Windows Manager]

```
>"Installation_folde\SVROR\Manager\bin\rcxadm" mgrctl modify -ip IP_address <RETURN>
```

[Linux Manager]

```
# /opt/FJSVrcvnr/bin/rcxadm mgrctl modify -ip IP_address <RETURN>
```

In a clustered manager configuration, for details on how to change the admin IP address registered for the manager, refer to "[Settings for Clustered Manager Configurations](#)".

6. Log in to the managed server with an OS administrator account.

7. Change ServerView Agents settings on the managed server.

Change the SNMP trap destination of the ServerView Agents. Refer to the ServerView Agent manual for details on changing SNMP trap settings.

8. Stop the agents on managed servers. [Windows] [Hyper-V] [Linux] [Xen] [KVM]

Stop the agent referring to "2.2 Starting and Stopping Agents" in the "Operation Guide VE".

9. Change Agent settings. [Windows] [Hyper-V] [Linux] [Xen] [KVM]

Use the rcxadm agtctl modify command to set the new manager IP address.

[Windows] [Hyper-V]

```
>"Installation_folder\Agent\bin\rcxadm" agtctl modify -manager IP_address <RETURN>
```

[Linux] [Xen] [KVM]

```
# /opt/FJSVrcxat/bin/rcxadm agtctl modify -manager IP_address <RETURN>
```

10. Restart the agents on managed servers. [Windows] [Hyper-V] [Linux] [Xen] [KVM]

Start the agent referring to "2.2 Starting and Stopping Agents" in the "Operation Guide VE".

11. Restart the manager.

Start the manager referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".

Repeat steps 6 - 11 for each managed server on which an agent is running.

12. Reconfigure the HBA address rename setup service.

When using the HBA address rename function, change the IP address of the admin server that is set for the HBA address rename setup service according to "Chapter 6 Settings for the HBA address rename Setup Service" in the "Setup Guide VE".

13. Back up managed servers.

If system image backups have already been collected from managed servers, it is recommended to update those images in order to reflect the changes made above. For details on system image backups, refer to "9.2 Backup" in the "Operation Guide VE".

System images backed up before changing the admin IP address of the admin server cannot be restored anymore after the change. It is recommended to delete all system images collected before change, unless those images are specifically needed.

14. Collect a cloning image. [Physical Servers]

If cloning images have already been collected from managed servers, it is recommended to update those images to reflect the change made above. For details on cloning image collection, refer to "17.2 Collecting".

Cloning images collected before changing the admin IP address of the admin server cannot be deployed anymore after the change. It is recommended to delete all cloning images collected before change, unless those images are specifically needed.

Note

- IP addresses belonging to registered admin LAN subnets cannot be changed.
- When a managed server belongs to the same subnet as the admin server, either delete the managed server or manually change the admin IP address of the managed server. Without changing the IP address of the managed server, it is not possible to register the information of the subnet the managed server belongs to, or change the information of the subnet.

Changing the IP Address of a Clustered Manager

In a clustered manager configuration, use the following procedure to change the IP address set within the operating system.

[Windows Manager]

Change the IP address using the [Failover Cluster Management] window.

[Linux Manager]

1. Stop the manager's cluster service.

Stop the manager's cluster service from the cluster administration view (Cluster Admin).

2. Log in to the admin server's primary node.

Log in to the operating system of the admin server's primary node with administration privileges.

3. Mount the shared disk on the primary node.

Mount the admin server's shared disk on the primary node.

4. Change takeover the logical IP address.

Release PRIMECLUSTER GLS virtual interface settings from the PRIMECLUSTER resource, then change the PRIMECLUSTER GLS configuration.

For details, refer to the PRIMECLUSTER Global Link Services manual.

5. Activate the takeover logical IP address.

Use the PRIMECLUSTER GLS command-line to activate the takeover logical IP address.

For details, refer to the PRIMECLUSTER Global Link Services manual.

Settings for Clustered Manager Configurations

In a clustered manager configuration, use the following procedure to register an IP address as the manager's admin LAN IP address.

[Windows Manager]

1. Cancel registry replication settings.

On the primary node, bring online the shared disk and IP address, and take all other resources offline.

Next, remove the following registry key from the registry replication settings set for the [PXE Services] cluster resource.

- x64

SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard\DHCP

- x86

SOFTWARE\Fujitsu\SystemcastWizard\DHCP

Use the following procedure to remove the registry key.

- a. In the [Failover Cluster Management] window, right-click the [PXE Services] resource in [Summary of RC-manager]-[Other Resources], and select [Properties] from the popup menu.

The [PXE Services Properties] window will be displayed.

- b. In the [Registry Replication] tab, select the above registry key.

- c. Click [Remove].

The selected key is removed from the [Root registry key] list.

- d. After removing the registry key, click [Apply].

- e. Click [OK] to close the dialog.

2. Change the manager IP address on the primary node.

On the primary node, use the `rcxadm mgrctl modify` command to set the new IP address.

```
>"Installation_folde\SVROR\Manager\bin\rcxadm" mgrctl modify -ip IP_address <RETURN>
```


3. Restore registry replication settings.

Restore the registry key deleted in step 1 to the registry replication settings of the [PXE Services] resource.
Use the following procedure to restore the registry key.

- a. In the [Failover Cluster Management] window, right-click the [PXE Services] resource in [Summary of RC-manager]-[Other Resources], and select [Properties] from the popup menu.
The [PXE Services Properties] window will be displayed.
- b. Click the [Add] button on the [Registry Replication] tab.
The [Registry Key] window will be displayed.
- c. Configure the above registry key in [Root registry key].
- d. Click the [OK] button.
- e. After configuration of the registry keys is complete, click the [Apply] button.
- f. Click [OK] to close the dialog.

4. Assign the manager's shared disk and IP address to the secondary node.

Right-click [Services and Applications]-[RC-manager] on the Failover Cluster Management tree, and select [Move this service or application to another node]-[1 - Move to node *node_name*] from the displayed menu.
The name of the secondary node is displayed for *node_name*.

5. Change the manager IP address on the secondary node.

On the secondary node, use the `rcxadm mgrctl modify` command to set the new IP address.
Use the same IP address as the one set in step 2.

6. Assign the manager's shared disk and IP address to the primary node.

Right-click [Services and Applications]-[RC-manager] on the Failover Cluster Management tree, and select [Move this service or application to another node]-[1 - Move to node *node_name*] from the displayed menu.
The name of the primary node is displayed for *node_name*.

7. On the primary node, take the manager's shared disk and IP address offline.

[Linux Manager]

1. Change the IP address set for the admin LAN.

Set a new IP address on the primary node using the following command.

```
# /opt/FJSVrcvnr/bin/rcxadm mgrctl modify -ip IP_address <RETURN>
```

2. De-activate the admin server's takeover logical IP address.

Use the PRIMECLUSTER GLS command-line interface to de-activate the takeover logical IP address.

For details, refer to the PRIMECLUSTER Global Link Services manual.

3. Register the takeover logical IP address as a PRIMECLUSTER resource.

Use the PRIMECLUSTER GLS command-line interface to register the virtual interface as a PRIMECLUSTER resource.

For details, refer to the PRIMECLUSTER Global Link Services manual.

4. Mount the shared disk

Mount the shared disk for managers on the primary node.

5. Change the settings of the DHCP service (When registering the admin LAN subnet)

When registering an admin LAN subnet, change the file below and set the DHCP server for the takeover logical IP address.

- File name

- Red Hat Enterprise Linux 5

/etc/dhcpd.conf

- Red Hat Enterprise Linux 6

/etc/dhcp/dhcpd.conf

Change the takeover logical IP address in the following line to the new takeover logical IP address.

option dhcp-server-identifier *takeover logical IP address*;

Example

When the takeover logical IP address is 192.168.4.100 before being changed

```
#
# DHCP Server Configuration file
# see /usr/share/doc/dhcp*/dhcpd.conf.sample
#
ddns-update-style none;
option vendor-class-identifier "PXEClient";
option dhcp-server-identifier 192.168.4.100; (*)
subnet 192.168.4.0 netmask 255.255.255.0 {
```

* Note: Change the IP address in this line to the new takeover logical IP address.

6. Unmount the shared disk.

Un-mount the shared disk from the primary node.

7. Log in to the admin server's secondary node.

Log in to the operating system of the admin server's secondary node with administration privileges.

8. Change takeover the logical IP address.

Use the PRIMECLUSTER GLS command-line interface to remove virtual interface settings from the PRIMECLUSTER resource, register the resource, and change the PRIMECLUSTER GLS configuration.

For details, refer to the PRIMECLUSTER Global Link Services manual.

9. Change the cluster configuration.

Use the cluster RMS Wizard to change the GLS resource set in the cluster service of either one of the cluster nodes.

After completing the configuration, save it and execute the following operations.

- Configuration-Generate
- Configuration-Activate

10. Start the Manager's cluster service.

Use the cluster administration view (Cluster Admin) to start the Manager's cluster service.

8.2 Changing Port Numbers

This section explains how to change the ports used by the Manager services and related services of Resource Orchestrator.

Resource Orchestrator requires the following services to be running. When starting these services, ensure that the ports they are using do not conflict with the ports used by other applications or services. If necessary, change the ports used by Resource Orchestrator services.

[Windows Manager]

- Manager Services
 - Resource Coordinator Manager
 - Resource Coordinator Task Manager
 - Resource Coordinator Web Server(Apache)

- Resource Coordinator Sub Web Server(Mongrel)
- Resource Coordinator Sub Web Server(Mongrel2)
- Resource Coordinator DB Server (PostgreSQL)
- Related Services
 - Deployment Service
 - TFTP Service
 - PXE Services
 - DHCP Server (*)

[Linux Manager]

- Manager Services
 - rcxmanager
 - rcxtaskmgr
 - rcxmongrel1
 - rcxmongrel2
 - rcxhttpd
 - rcxdb
- Related Services
 - scwdepsvd
 - scwpxesvd
 - scwtftpd
 - dhcpd (*)

* Note: Necessary when managing a managed server in a separate subnet to the admin server.

Change the ports used by the above services if there is a possibility that they will conflict with other applications or services.

For Windows operating systems, an ephemeral port may conflict with a Resource Orchestrator service if the range allowed for ephemeral ports is changed. In this case, change the port number to a value not included in the range for ephemeral ports.

For details, refer to "2.1.1.4 Checking Used Port Numbers" in the "Setup Guide VE".

For information on how to change the ports used by ServerView Operations Manager, refer to the ServerView Operations Manager manual. The ports used for SNMP communication and server power control are defined by standard protocols and fixed at the hardware level, and thus cannot be changed.

For the port numbers used by Resource Orchestrator, refer to "Appendix A Port List" in the "Design Guide VE".

When using a firewall on the network, firewall settings should be updated to match the new port definitions and allow communications for any modified port.

Manager Services

Use the following procedure to change the admin server ports used by manager services:

1. Stop the manager.

Stop the manager, referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".

2. Change the port numbers.

Use the `rcxadm mgretl modify` command to set a new port number for a given service name.

[Windows Manager]

```
>"Installation_folder\SVROR\Manager\bin\rxadm" mgrctl modify -port name=number  
<RETURN>
```

[Linux Manager]

```
# /opt/FJSVrcvmr/bin/rxadm mgrctl modify -port name=number <RETURN>
```

In a clustered manager configuration, bring offline all cluster resources except for the manager's shared disk and IP address, move all cluster resources from the primary node to the secondary node, then execute the rxadm mgrctl modify command on all the nodes that are hosting cluster resources.

3. Restart manager services.

Start the manager referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".

Note

- When changing the "rcxweb" port, the following ports should be set to the same value.

- Admin client

Enter the "rcxweb" port in the Web browser URL used to log into Resource Orchestrator.

If this URL is bookmarked in the Web browser "Favorites", change the port set in the bookmark's URL.

- HBA address rename setup service

If the HBA address rename setup service is running, change the port number used to communicate with the admin server to the "rcxweb" port according to ["9.2.2 Changing the Port Number Used to Communicate with the Admin Server"](#).

[Windows Manager]

- Change the ROR console shortcut on the manager

1. Open the following folder on the admin server.

Installation_folder\SVROR\Manager

2. Right-click the "ROR Console" icon, and select [Properties] from the popup menu.

3. In the [Web Document] tab, change the port number set in the "URL" field (as shown below).

```
URL: https://localhost:23461/
```

4. Click [OK].

- When changing the "nfagent" port, the following ports on managed servers should be set to the same value.

Set the "nfagent" port set on each managed server to the same value, according to the instructions given in ["9.1.6 Changing Port Numbers"](#).

The system image and cloning images collected before the change can no longer be used, and should be deleted.

If necessary, re-collect system images and cloning images.

Related Services

Use the following procedure to change the port numbers used for the related services: However, the port numbers of the DHCP server and the dhcpd service cannot be changed.

[Windows Manager]

1. Change the port numbers.
 - a. Open the Windows Registry Editor, and search for the following subkey:
 - When using a 32-bit version of Windows:
Key name: HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\SystemcastWizard\CLONE
 - When using a 64-bit version of Windows:
Key name: HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard\CLONE
 - b. Select "PortBase" from the registry entries under this subkey.
 - c. From the menu, select [Edit]-[Modify].
The [Edit DWORD Value] dialog is displayed.
 - d. Select [Decimal] and then click [OK].
This port value will define the first port of the range used by deployment services.

However, because the related services can use up to 16 port numbers, ensure that all ports included between "PortBase" (defined here) and "PortBase+15" do not conflict with any other applications or services. Moreover, be sure to set a value lower than 65519 for "PortBase" so that the highest port number ("PortBase+15") does not exceed the largest valid port number (65534).

In a clustered manager configuration, change port numbers on both the primary and secondary node.

2. Restart the server on which the port number has been changed.

[Linux Manager]

1. Change the port numbers.

Edit the following file: /etc/opt/FJSVscw-common/scwconf.reg.

In PortBase (under HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\SystemcastWizard\CLONE), set the first value of the port number to be used by deployment services. This value should be entered in hexadecimal format. To avoid conflicts with ephemeral ports, use a value not included in the ephemeral port range defined by "net.ipv4_local_port_range".

However, as a maximum of 16 port numbers are used for image file creation and deployment, ensure that the port numbers for PortBase to PortBase +15 do not conflict with ephemeral or well-known ports.

This ensures that deployment services will use ports outside of the range defined by net.ipv4.ip_local_port_range for image operations.

Moreover, be sure to set a value lower than 65519 for "PortBase" so that the highest port number ("PortBase+15") does not exceed the largest valid port number (65534).

In a clustered manager configuration, change port numbers on both the primary and secondary node.

2. Restart the server on which the port number has been changed.



Information

The related services allow managed servers to boot from the network using a dedicated module stored on the admin server during backup, restore or cloning.

Note that changing port numbers on the admin server alone is enough to support communication during the above image operations. Therefore, no additional configuration is required on the managed servers.

8.3 Changing the Maximum Number of System Image Versions

Use the following procedure to change the maximum number of system image versions.

1. Change the maximum number of system image versions.
2. Confirm the maximum number of system image versions.

For details of the methods for changing and checking the generations of system images, refer to "5.8 rcxadm imagemgr" in the "Reference Guide (Command) VE".

Note

If the specified limit is smaller than the number of existing system image versions, older versions will not be deleted automatically. In this case, backing up a new system image, will only delete the oldest version.

Delete unused versions of system images manually if they are no longer necessary. For details, refer to "16.5 Deleting".

If the ROR console has been already opened, refresh the Web browser after changing the maximum number of system image versions.

8.4 Changing the Maximum Number of Cloning Image Versions

Use the following procedure to change the maximum number of cloning image versions.

1. Change the maximum number of cloning image versions.
2. Check the maximum number of cloning image versions.

For details of the methods for changing and checking the generations of cloning images, refer to "5.8 rcxadm imagemgr" in the "Reference Guide (Command) VE".

Note

If the specified limit is smaller than the number of existing cloning image versions, older versions will not be deleted automatically. In this case, collecting a new cloning image version will require selecting a previous image version for deletion.

Delete unused image versions manually if they are no longer necessary. For details, refer to "17.5 Deleting".

If the ROR console has been already opened, refresh the Web browser after changing the maximum number of system image versions.

8.5 Changing the Image Folder Location

Use the following procedure to change the location (path) of the image files folder.

1. Select the [Image List] tab in the ROR console and confirm the current image list.
2. Log on to the admin server with OS administrative privileges.
3. Stop the manager.

Stop the manager, referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".

4. Change the location of the image file storage folder.

Change the location of the image file storage folder according to the instructions given in "5.8 rcxadm imagemgr" in the "Reference Guide (Command) VE".

Because image files are actually copied over to the new location, this step may take some time to complete.

In a clustered manager configuration, for details on how to change the image file storage folder location, refer to "[Settings for Clustered Manager Configurations](#)".

5. Restart the manager.

Start the manager referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".

6. Select the [Image List] tab in the ROR console and confirm the image list is same as before.

Settings for Clustered Manager Configurations

Settings differ depending on the operating system used for the manager.

[Windows Manager]

1. Cancel registry replication settings.

Bring the manager's shared disk online, and take all other resources offline.

Next, remove the following registry key from the registry replication settings set for the [Deployment Service] cluster resource.

- x64

SOFTWARE\Wow6432Node\Fujitsu\SystemcastWizard\ResourceDepot

- x86

SOFTWARE\Fujitsu\SystemcastWizard\ResourceDepot

Use the following procedure to remove the registry key.

- a. In the [Failover Cluster Management] window, right-click the [Deployment Service] resource in [Summary of RC-manager]-[Other Resources], and select [Properties] from the popup menu.

The [Deployment Service Properties] window is displayed.

- b. In the [Registry Replication] tab, select the above registry key.

- c. Click [Remove].

The selected key is removed from the "Root registry key" list.

- d. After removing the registry key, click [Apply].

- e. Click [OK] to close the dialog.

2. Change the location of the image file storage folder.

Change the location of the image file storage folder according to the instructions given in "5.8 rcxadm imagemgr" in the "Reference Guide (Command) VE".

Because image files are actually copied over to the new location, this step may take some time to complete.

Run the rcxadm imagemgr command from either node of the cluster resource.

The new location should be a folder on the shared disk.

3. Restore registry replication settings.

Restore the registry key deleted in step 1 to the registry replication settings of the [Deployment Service] resource.

Use the following procedure to restore the registry key.

- a. In the [Failover Cluster Management] window, right-click the [Deployment Service] resource in [Summary of RC-manager]-[Other Resources], and select [Properties] from the popup menu.

The [Deployment Service Properties] window is displayed.

- b. Click the [Add] button on the [Registry Replication] tab.

The [Registry Key] window will be displayed.

- c. Configure the above registry key in [Root registry key].

- d. Click the [OK] button.

- e. After configuration of the registry keys is complete, click the [Apply] button.

- f. Click [OK] to close the dialog.

[Linux Manager]

1. Mount the shared disk on the primary node.

Log in to the primary node with OS administrator privileges and mount the admin server's shared disk.

2. Change the location of the image file storage directory.

Change the location of the image file storage directory according to the instructions given in "5.8 rcxadm imagemgr" in the "Reference Guide (Command) VE".

Because image files are actually copied over to the new location, this step may take some time to complete.

Run the rcxadm imagemgr command on the primary node.

Also, specify a directory on the shared disk for the new image file storage directory.

3. Un-mount the shared disk from the primary node.

Un-mount the shared disk (for which settings were performed in step 1) from the primary node.

8.6 Changing the Password for the Resource Orchestrator Database

Use the following procedure to change the password for the Resource Orchestrator database:

1. Log on to the admin server with OS administrative privileges.
2. Stop the manager.

Stop the manager, referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".

3. Change the password for the Resource Orchestrator database.

Execute the rcxadm dbctl modify command.

Enter the new password interactively.

[Windows Manager]

```
>"Installation_folde\SVROR\Manager\bin\rcxadm" dbctl modify -passwd <RETURN>
```

[Linux Manager]

```
# /opt/FJSVrcvmr/bin/rcxadm dbctl modify -passwd <RETURN>
```

In a clustered manager configuration, bring offline all manager resources except for the shared disk, move all cluster resources from the primary node to the secondary node, then execute the rcxadm dbctl modify command on all the nodes that are hosting cluster resources.

4. Restart the manager.

Start the manager referring to "2.1 Starting and Stopping Managers" in the "Operation Guide VE".

Chapter 9 Changing Resources

This chapter explains how to change settings for the admin server or resources registered on the admin server.

9.1 Changing Chassis and Managed Server Settings

This section explains how to change the settings for chassis and managed servers.

If collecting the system images and cloning images of managed servers, collect them after completing changes to managed server settings.

For details on backing up system images, refer to "[16.2 Backup](#)".

For details on how to collect cloning images, refer to "[17.2 Collecting](#)".



Note

- To change VM guest settings, use the management console of the server virtualization software used.
- A managed server that has already been registered cannot be moved to a different slot.
To move a managed server to a different slot, first delete the managed server, then move it to the new slot and register it again.

9.1.1 Changing Chassis Names

This section explains how to change chassis names.

Use the following procedure to change the name of a registered chassis.

1. In the ROR console server resource tree, right-click the target chassis and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Chassis Settings] dialog is displayed.

2. Modify the values for the following items:

Chassis name

Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").

3. Click the [OK] button.

The chassis name is changed.

9.1.2 Changing Server Names

This section explains how to change physical server names.

Names of physical OSs, VM hosts, and VM guests can be changed by a user with administrative authority. Once changed, new names are automatically reflected in the ROR console.

Use the following procedure to change the name of a physical server.

1. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Server Settings] dialog is displayed.

2. Modify the values for the following items:

Physical Server Name

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

3. Click the [OK] button.

The server name is changed.

4. If the network parameter auto-configuration function is used in the deployment of the cloning images, the "Physical Server Name" set in the definition file must also be changed.

For details on the network parameter auto-configuration function, refer to "[17.6 Network Parameter Auto-Configuration for Cloning Images](#)".

9.1.3 Changing Admin IP Addresses

This section explains how to change admin IP addresses.

To change the IP addresses of remote management controllers, refer to "[9.1.5 Changing Server Management Unit Configuration Settings](#)".

Chassis

Use the following procedure to change the IP address of a chassis.

1. Change the IP address of the management blade.
2. In the ROR console server resource tree, right-click the target chassis and select [Modify]-[Registration Settings] from the popup menu.
The [Modify Chassis Settings] dialog is displayed.
3. Change "Admin LAN (IP address)".
4. Click the [OK] button.

The chassis admin IP address is changed.

Managed Servers

Use the following procedure to change the IP address of a managed server.

However, it is still required when using the same address for both the admin and public IP address. This procedure is not required when changing only the public IP address of a server.

1. Log in to the managed server with an OS administrator account.
2. Change the IP address set within the operating system.

Change the IP address according to the OS manual.

If the admin LAN has been made redundant, change the admin IP address set in the following tools or products.

Refer to the manual of each product for usage details.

[Windows]

PRIMECLUSTER GLS

BACS

Intel PROSet

[Linux] [Solaris]

PRIMECLUSTER GLS: "NIC switching mode (Physical IP address takeover function)"



When BladeLogic is being used for server management software, remove the managed servers that have been added to BladeLogic, and add them again. When adding managed servers, specify their admin IP address.

3. Restart the managed server.
4. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.
The [Modify Server Settings] dialog is displayed.

5. Change [Admin LAN (IP address)].
6. Click the [OK] button.

The admin IP address of the managed server is changed.

Note

- It is not possible to change IP address settings of a managed server (primary server) with a spare server configured to a different subnet from the spare server.
- For VMware ESXi, register the servers again after changing the IP addresses.

Guest Domain of Oracle VM for SPARC

When an Oracle VM for SPARC guest domain is registered as a VM host, use the following procedure to change its admin IP address. However, it is still required when using the same address for both the admin and public IP address.

This procedure is not required when changing only the public IP address of a server.

1. Log in to the guest domain using an OS administrator account.
2. Change the IP address set within the operating system.

Change the IP address according to the OS manual.

If the admin LAN has been made redundant, change the admin IP address set in the "NIC switching mode (Physical IP address takeover function)" of PRIMECLUSTER GLS.

Note

When BladeLogic is being used for server management software, remove the managed servers that have been added to BladeLogic, and add them again.

When adding managed servers, specify their admin IP address.

3. Restart the guest domain.
4. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.
The [Modify IP Address Settings] dialog is displayed.
5. Change [Admin LAN IP Address].
6. Click the [OK] button.

The admin IP address of the guest domain is changed.

9.1.4 Changing SNMP Communities

This section explains how to change SNMP community settings.

- For blade servers, PRIMEQUEST servers, or SPARC Enterprise M4000/M5000/M8000/M9000 servers, or servers in Fujitsu M10-4S

Use the following procedure to change SNMP community used by chassis and managed servers.

1. Change the SNMP community set on the management blade, management board, or XSCF.

The new SNMP community should have Read-Write permission.

For details on changing SNMP communities, refer to the manual of the management blade, management board, or XSCF.

2. Change the SNMP community set on the managed server.

Use the same name for the SNMP community of the managed server on the management blade, the management board, and the XSCF.

Follow the instructions in the ServerView Agents manual to change the SNMP community used by a managed server. The new SNMP community should have Read-Write permission.

3. In the ROR console server resource tree, right-click the target chassis and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Chassis Settings] dialog is displayed.

4. Change [SNMP Community].
5. Click the [OK] button.

The SNMP community is changed.

- For Rack Mount and Tower Servers

Use the following procedure to change the SNMP community used by PRIMERGY servers.

For servers other than PRIMERGY servers, changing SNMP communities does not require any configuration change in Resource Orchestrator.

1. Change the SNMP community set on the managed server.

Follow the instructions in the ServerView Agents manual to change the SNMP community used by a managed server.

2. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Server Settings] dialog is displayed.

3. Change [SNMP Community].
4. Click the [OK] button.

The SNMP community is changed.

- For SPARC Enterprise M3000 or Fujitsu M10-1/M10-4

Use the following procedure to change the SNMP community used by the Remote Management Controller.

1. Change the SNMP community set on the remote management controller (XSCF).

For details on changing SNMP communities, refer to the XSCF manuals.

2. In the ROR console server resource tree, right-click the target chassis and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Chassis Settings] dialog is displayed.

3. Change [SNMP Community].
4. Click the [OK] button.

The SNMP community is changed.

9.1.5 Changing Server Management Unit Configuration Settings

This section explains how to modify server management unit settings.

- For rack mount or tower servers

Use the following procedure to change remote management controller settings.

1. Change settings on the remote management controller.
If the user account is changed, it should still have administrator authority.

2. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Server Settings] dialog is displayed.

3. Change the [Remote Management Controller IP address]. To modify user account information, select the [Modify remote management controller login account] checkbox, and change the [User ID] and [Password] of the [Remote management controller].

- For SPARC Enterprise M3000 or Fujitsu M10-1/M10-4

Use the following procedure to change remote management controller (XSCF) settings.

1. Change settings on the remote management controller (XSCF).
If the user account is changed, it should still have administrator authority ("platadm" privileges).
2. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.
The [Modify Server Settings] dialog is displayed.
3. Change the [Remote Management Controller IP address (ILOM/XSCF)].
To modify user account settings, select the [Modify remote management controller login account] checkbox, and change the [User ID] and [Password] fields under [Remote management controller (ILOM/XSCF)].
The user ID reserved for the system cannot be used. Create another user ID.
For details, refer to the XSCF manuals.

- For SPARC Enterprise T series

Use the following procedure to change remote management controller settings (ILOM).

1. Change settings on the remote management controller (ILOM).
If the user account is changed, it should still have administrator authority ("Admin" privileges).
2. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.
The [Modify Server Settings] dialog is displayed.
3. Change the [Remote Management Controller IP address (ILOM/XSCF)].
To modify user account settings, select the [Modify remote management controller login account] checkbox, and change the [User ID] and [Password] fields under [Remote management controller (ILOM/XSCF)].

- For PRIMEQUEST servers

Use the following procedure to change remote server management settings.

1. Change the remote server management settings.
If the user account is changed, it should still have administrator authority.
2. In the ROR console server resource tree, right-click the target chassis and select [Modify]-[Registration Settings] from the popup menu.
The [Modify Chassis Settings] dialog is displayed.
3. Select the [Modify remote server management login account] checkbox. Then, change the [User ID] and [Password] of [Remote Server Management].

- For SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S

Use the following procedure to change remote management controller (XSCF) settings.

1. Change settings on the remote management controller (XSCF).
If the user account is changed, it should still have administrator authority ("platadm" privileges).
2. In the ROR console server resource tree, right-click the target chassis and select [Modify]-[Registration Settings] from the popup menu.
The [Modify Chassis Settings] dialog is displayed.
3. Select the [Modify remote server management login account] checkbox. Then, change the [User ID] and [Password] of [Remote Server Management (XSCF)].
The user ID reserved for the system cannot be used. Create another user ID.
For details, refer to the XSCF manuals.

9.1.6 Changing Port Numbers

This section explains how to change port numbers.

When changing port numbers of the agent, the "nfagent" port of the manager must also be changed. Change this according to information in "8.2 Changing Port Numbers".

For details on port numbers, refer to "Appendix A Port List" in the "Design Guide VE".

Use the following procedure to change the port numbers for managed servers:

1. Change the port numbers.

[Windows] [Hyper-V]

Use a text editor (such as Notepad) to change the following line in the *Windows_system_folder\system32\drivers\etc\services* file.

```
# service name port number/protocol name
nfagent          23458/tcp
```

[Linux] [VMware] [Xen] [Citrix Xen] [KVM]

Use a command such as vi to change the following line in the */etc/services* file.

```
# service name port number/protocol name
nfagent          23458/tcp
```

[Solaris]

Use a command such as vi to change the following line in the */etc/services* file.

```
# service name port number/protocol name
rcvat           23458/tcp
```

2. Restart the server on which the port number has been changed.

9.1.7 Changing VM Host Login Account Information

This section explains how to change VM host login account information.

If the login account information (user ID and password) of the VM host entered when the VM host was registered is changed, change the login account information of the VM host that was registered in Resource Orchestrator.

The method for changing the VM host login account is shown below.

1. In the ROR console server resource tree, right-click the target VM host, and select [Modify]-[VM Host Login Account] from the popup menu.

The [Change Login Information] dialog is displayed.

2. Enter the new login account information that was changed on the VM host.

User ID

Enter the user ID to log in to the VM host. Specify a user ID that has VM host administrator authority.

[Hyper-V]

Users of the Hyper-V Administrators group can be specified.

Password

Enter the password of the user to log in to the VM host.

3. Click the [OK] button.

VM host login information is changed.

9.1.8 Changing the VLAN Settings of LAN Switch Blades

This section explains how to change VLAN settings of LAN switch blades.

The VLAN settings of the LAN switch blade ports connected to the physical servers can be reconfigured normally within Resource Orchestrator.

Refer to "[7.3.4.2 Configuring VLANs on Internal Ports](#)" for details on how to configure these settings.

9.1.9 Changing HBA address rename Settings

This section explains how to change the HBA address rename settings.

The WWNs and HBA ports that are set by HBA address rename can be reconfigured normally within Resource Orchestrator.

Refer to "[7.4.2 HBA address rename Settings](#)" for details on how to configure these settings.

9.1.10 Changing Boot Options

This section explains how to change boot option settings.

The boot options configured for PRIMEQUEST servers can be changed by reconfiguring them.

Use the following procedure to configure the boot option settings.

1. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Server Settings] dialog is displayed.

2. Perform the following settings:

Boot option

- For UEFI

Select [UEFI].

- For Legacy Boot

Select [Legacy boot].



Note

Changing the boot option changes the information registered with Resource Orchestrator.

As the actual boot option will not be changed, it is necessary to change the BIOS settings when performing the change.

9.1.11 Changing Admin LAN Subnets

Use the following procedure to change an admin LAN subnet.

1. From the ROR console menu, select [Settings]-[Admin LAN Subnet].

The [Admin LAN Subnet] dialog is displayed.

2. Select the subnet to change.

The [Change Admin LAN Subnet] dialog is displayed.

3. In the [Change Admin LAN Subnet] dialog, set the following items.

Subnet name

Enter a character string beginning with an alphabetic character and containing up to 16 alphanumeric characters, underscores ("_"), hyphens ("-"), and periods (".").

Network address

Enter valid values for the network address.

Subnet mask

Enter valid values for the subnet mask.

Gateway

Enter the settings for the gateway used for communication with the admin server on the admin LAN.

4. Click the [Change] button.
5. Click the [OK] button.



When changing the information for a subnet other than the one the admin server belongs to, if there is even 1 managed server belonging to the target subnet, the "Network address" and "Subnet mask" cannot be changed.

When changing the "Network address" or "Subnet mask", refer to the "[Modification Procedure when there Are Managed Servers Belonging to Different Subnets](#)".

Modification Procedure when there Are Managed Servers Belonging to Different Subnets

When there are managed servers in the target subnet, change the network address or the subnet mask using the following procedure.

1. Register the subnet information using the new network address or subnet mask.
2. Use the following procedure to change the admin LAN IP addresses of all managed servers belonging to the subnet before modification.
For details on how to configure these settings, refer to "[9.1.3 Changing Admin IP Addresses](#)".
3. Delete the subnet used before modification.

9.1.12 Changing WWN Settings for ETERNUS SF Storage Cruiser Integration

This section explains how to change WWN settings for integration with ETERNUS SF Storage Cruiser.

The WWN settings for ETERNUS SF Storage Cruiser integration can be changed by reconfiguring them.

Refer to "[10.1 Configuring WWN Settings for ETERNUS SF Storage Cruiser Integration](#)" for details on how to configure these settings.

9.1.13 Changing Target Disks of Image Operations

This section explains how to modify the target disks of image operations.

When there is a server using local boot with a SAN data configuration, use the following procedure to change the target disk for image operations.

1. When the managed server is registered as an agent, place the server into maintenance mode.
For details on maintenance mode, refer to "[Appendix C Maintenance Mode](#)".
2. Power off the managed server.
3. Execute the following command to update the disk information.

Acquire the information of disks for which image operations can be performed. At this time, the managed server can be automatically started and then automatically stopped after the disk information is acquired.

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server collect -name physical server -disk <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvnr/bin/rxadm server collect -name physical server -disk <RETURN>
```


- Execute the following command to display the information of disks for which image operations can be performed.

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rcxadm server show -name physical server -disk <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rcxadm server show -name physical server -disk <RETURN>
```

Identify the boot disk from the information regarding size or partitions in the displayed disk information.

- Execute the following command to configure the target disks of image operations.

Specify the *integer* displayed as "Disk Number: *integer*" in the boot disk information for the option of the command.

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rcxadm server set -name physical server -attr target_disk=target_disk <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rcxadm server set -name physical server -attr target_disk=target_disk <RETURN>
```

- Execute the following command to check the configured target disks of image operations.

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rcxadm server list -target_disk <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rcxadm server list -target_disk <RETURN>
```

Information

If the following commands are executed, the configurations of the target disks of image operations can be released.

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rcxadm server unset -name physical server -target_disk <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rcxadm server unset -name physical server -target_disk <RETURN>
```

For details on the command, refer to "3.4 rcxadm server" in the "Reference Guide (Command) VE".

Note

- Configurations of target disks of image operations are not updated unless commands are executed. Therefore, when a backup of an admin server is restored, configurations of target disks of image operations are returned to the state when the backup was taken.
- It is recommended to collect backups of admin servers after configuring the target disks of image operations for all physical servers that require the configuration.
- In the following cases, update the disk information, and configure the target disks of image operations again.
 - When restoring a backup of an admin server that was acquired before configuration of target disks of image operations

- When modifying target disks of image operations after a backup of the admin server has been collected
 - When replacing disks configured as the target disks of image operations
-

9.1.14 Modifying the Public LAN (MAC Address) Information Settings

This section explains how to modify the public LAN (MAC address) information settings of rack mount servers and tower servers.

The public LAN (MAC Address) information can be modified by performing reconfiguration.

For details on how to configure these settings, refer to "[7.4.3 Registering the Public LAN \(MAC Address\) Information](#)".

9.2 Changing Settings for the HBA address rename Setup Service

This section explains how to change settings for the HBA address rename setup service. Such settings include the admin server IP address, the port used to communicate with the admin server, and the IP address of the HBA address rename server.

9.2.1 Changing the IP Address of the Admin Server

This section explains how to change the IP address of the admin server.

When this setting is changed, the HBA address rename setup service automatically checks whether it can communicate with the new admin server IP address.

Changing this setting also requires changing the port on the admin server side beforehand.

Change the IP address of the admin server according to "[8.1 Changing Admin IP Addresses](#)", and change the admin IP address for the HBA address rename setup service according to step 12.

9.2.2 Changing the Port Number Used to Communicate with the Admin Server

This section explains how to change the port used between the HBA address rename setup service and the admin server.

The HBA address rename setup service uses the "rcxweb" port to communicate with the admin server.

When this setting is changed, the HBA address rename setup service automatically checks whether it can communicate with the new admin server IP address.

Changing this setting also requires changing the port on the admin server side beforehand.

Use the following procedure to change the port numbers used to communicate with the admin server:

1. Change the port number of the manager.

Change the "rcxweb" port number according to the instructions given in "[8.2 Changing Port Numbers](#)".

2. Change the port number of the HBA address rename setup service.

Refer to "Chapter 6 Settings for the HBA address rename Setup Service" in the "Setup Guide VE", and change the port to the same port number.

9.2.3 Changing the IP Address of the HBA address rename Server

This section explains how to change the IP address of the HBA address rename server.

Use the following procedure to change the IP address of the HBA address rename server.

1. Log in to the HBA address rename server with administrator authority.
2. Stop the HBA address rename setup service.

Stop the HBA address rename setup service according to "Chapter 6 Settings for the HBA address rename Setup Service" in the "Setup Guide VE".

3. Change the IP address set within the operating system.

Change the IP address according to the OS manual.

4. Restart the HBA address rename setup service.

Start the HBA address rename setup service according to "Chapter 6 Settings for the HBA address rename Setup Service" in the "Setup Guide VE".

9.3 Changing VIOM Registration Settings

Use the following procedure to perform setting changes for management software (VIOM).

1. In the ROR console management software tree, right-click the management software (VIOM), and select [Modify]-[Registration Settings] from the popup menu.

The [Modify Management Software(VIOM) Settings] dialog is displayed.

2. Perform the following settings:

User ID

Enter the ID of a VIOM user account.

Password

Enter the password of the above VIOM user account.

3. Click the [OK] button.

To change registered VIOM server profiles, follow the procedure described in "[7.1.1 Registering VIOM Server Profiles](#)" to open the Web interface of ServerView Virtual-IO Manager and change the settings. Changes made inside Virtual-IO Manager are automatically reflected in Resource Orchestrator.

9.4 Changing Settings of LAN Switch Blades and LAN Switches

This section explains how to change the settings of LAN switch blades and LAN switches.

9.4.1 Changing Basic Settings of LAN Switch Blades and LAN Switches

This section explains how to change LAN switch blade or LAN switch basic settings.

The following settings can be changed.

- LAN switch name (Node name for management)
- Management port (only when using the Converged Fabric mode of LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2)
- Admin LAN (IP address)
- User ID (LAN switch blade only)
- Password (LAN switch blade only)
- Privileged password (LAN switch blade only)
- Connection method (LAN switch blade only)
- SNMP community name



Note

When changing LAN switch settings as follows due to a configuration change, delete the registered LAN switch blade and register it again.

- For a LAN switch blade PY CB DCB SW 10Gb 18/6+6
 - When changing from VCS to another mode, or vice versa
 - Changing VCS ID or RBridge ID

- For a LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2
 - Changing Fabric ID, Domain ID or Switch ID
 - When changing the mode

For a LAN switch blade PY CB 10Gb FEX Nexus B22, only the LAN switch name can be configured.

Complete the changes to the settings on the target LAN switch blade or LAN switch before performing this procedure.

Use the following procedure to change LAN switch blade or LAN switch settings:

1. In the ROR console server resource tree or network resource device tree, right-click the target LAN switch name and select [Modify]-[Registration Settings] from the popup menu.
The [Modify LAN Switch] dialog is displayed.
2. Make changes to the values as needed.
3. Click the [OK] button.
The settings for the LAN switch are changed with the entered information.

Note

- It is possible to set the IP address of the target LAN switch to another unregistered LAN switch. However, this will result in the Resource Orchestrator configuration being inconsistent with the actual network configuration.
If the IP address of the target LAN switch is unintentionally set to the same address as that of another device, change back the IP address of the target LAN switch to its original value according to the instructions given in this section.
If there are more than one LAN switch with inconsistent IP address configurations, delete all registered LAN switches according to "[11.4.2 Deleting Network Devices](#)" first, then perform discovery and registration of LAN switches again according to "[7.11 Registering LAN Switches](#)".
- SSH connection (SSH version 2) can be selected for the following LAN switch blades.
 - LAN switch blade PY CB Eth Switch/IBP 10Gb 18/8 (1.00 or later version)
 - LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2 (1.00 or later version)
 - LAN switch blade PY CB Eth Switch/IBP 1Gb 36/8+2 (4.16 or later version)
 - LAN switch blade PY CB Eth Switch/IBP 1Gb 36/12 (3.12 or later version)
 - LAN switch blade PY CB Eth Switch/IBP 1Gb 18/6 (3.12 or later version)
 - LAN switch blade PY CB DCB SW 10Gb 18/6/6 (2.1.1_fuj or later version)

9.4.2 Changing VLANs Set for External Ports of LAN Switch Blades

VLAN IDs and types (Port/Tagged VLAN) set on the external ports of a managed LAN switch blade can be changed.

Note

- VLANs cannot be changed on PRIMERGY BX900/BX400 LAN switch blades operating in IBP mode or Converged Fabric mode.
- VLANs cannot be configured on PY CB 10Gb FEX Nexus B22 LAN switch blades.
- If the port VLAN ID is unspecified or 1, a tagged VLAN ID cannot be set to 1.
- When using end host mode for the following LAN switch blades, it is not possible to modify the port VLAN ID, or remove a tag vlan for the external ports which meet the following conditions.

When performing the operation, inactivate the target external port, or change the VLAN ID for internal ports which have the same VLAN ID as the target external port.

LAN switch blade

- PY CB Eth Switch/IBP 1Gb 36/8+2
- PY CB Eth Switch/IBP 1Gb 36/12
- PY CB Eth Switch/IBP 1Gb 18/6

Conditions

- The port is selected as Selected Port
- The port is activated
- More than one internal port has the same VLAN.



Changing VLAN IDs

This section explains how to change VLAN IDs set on the external ports of a LAN switch.

- With Port VLANs

Use the following procedure to change VLAN IDs:

1. In the ROR console server resource tree, right-click the target LAN switch blade and select [Modify]-[Network Settings] from the popup menu.

The [VLAN Settings] dialog is displayed.

2. Perform the following settings:

VLAN

Select "Change" and select the VLAN ID that has been changed.

Physical Port, Link Aggregation

Select [Untagged] from the VLAN type of the port number to configure or link aggregation group name.

3. Click the [OK] button.

The VLAN ID is changed.

- With Tagged VLANs

First delete the VLAN ID was set on the desired LAN switch blade port before setting the new VLAN ID.

Use the following procedure to change VLAN IDs:

1. In the ROR console server resource tree, right-click the target LAN switch blade and select [Modify]-[Network Settings] from the popup menu.

The [VLAN Settings] dialog is displayed.

2. Perform the following settings:

VLAN

Select "Change" and select the VLAN ID that has been changed.

Physical Port, Link Aggregation

Select [None] from the VLAN type of the port number to configure or link aggregation group name.

3. Click the [OK] button.

The VLAN ID set for the selected LAN switch blade port is released.

4. Repeat step 1 and set the new VLAN ID in the [VLAN Settings] dialog.

VLAN

Select "Create new" or "Change" in the VLAN information and select the VLAN ID to be changed.

Physical Port, Link Aggregation

Select [Tagged] from the VLAN type of the port number to configure or link aggregation group name.

5. Click the [OK] button.

The VLAN ID is changed.

Changing VLAN Types

This section explains how to change the types of VLAN (port or tagged VLAN) set on the external ports of a LAN switch.

Use the following procedure to change VLAN types:

1. In the ROR console server resource tree, right-click the target LAN switch blade and select [Modify]-[Network Settings] from the popup menu.

The [VLAN Settings] dialog is displayed.

2. Perform the following settings:

VLAN

Select "Change" and select the VLAN ID that has been changed.

Physical Port, Link Aggregation

Change the VLAN type (Untagged) or [Tagged]) of the port number to configure or link aggregation group name.

3. Click the [OK] button.

The VLAN type is changed.

Deleting VLAN IDs

This section explains how to delete VLAN IDs.

- Deleting VLAN IDs from LAN switch blades

Use the following procedure to delete VLAN IDs:

1. In the ROR console server resource tree, right-click the target LAN switch blade and select [Modify]-[Network Settings] from the popup menu.

The [VLAN Settings] dialog is displayed.

2. Perform the following settings:

VLAN

Select "Change" and select the VLAN ID that has been changed.

3. Click the [Delete] button.

The VLAN ID is deleted.

- Deleting VLAN IDs from LAN switch ports

Use the following procedure to delete VLAN IDs:

1. In the ROR console server resource tree, right-click the target LAN switch blade and select [Modify]-[Network Settings] from the popup menu.

The [VLAN Settings] dialog is displayed.

2. Perform the following settings:

VLAN

Select "Change" and select the VLAN ID that has been changed.

Physical Port, Link Aggregation

Select [None] from the VLAN type of the port number to delete VLANs or link aggregation group name.

3. Click the [OK] button.

The VLAN ID is deleted.

9.4.3 Re-discovering LAN Switches

Newly added LAN switches can be discovered by re-executing LAN switch discovery.

For details on LAN switch discovery, refer to "[Discovery](#)" in "[7.11 Registering LAN Switches](#)".

9.5 Changing Network Device Settings

This section explains how to change settings of network devices.

9.5.1 Changing Network Device Basic Information

This section explains how to change the basic information of network devices.

The following settings can be changed.

- Network Device Name
- Admin LAN (IP Address)
- SNMP Community

Can only be changed when using SNMP monitoring.

To modify settings other than those listed above, use the methods explained in "[9.5.2 Changing Network Device Settings](#)".

Complete setting modifications on the target network device before performing this procedure.

Use the following procedure to configure a network device.

1. In the ROR console network device tree, right-click the target network device and select [Modify] [Basic Information] from the popup menu.
The [Modify Network Device] dialog is displayed.
2. Make changes to the values as needed.
3. Click the [OK] button.

The settings of the network device are modified.

9.5.2 Changing Network Device Settings

This section explains how to change settings of network devices.

Use the following procedure to change the settings of a registered network device:

1. Create network configuration information for the target network device.
2. Change the network device settings based on the network configuration information created in step 1.

9.5.2.1 Creating the Network Configuration Information (XML Definition)

Create the network configuration information necessary for changing the registered network device settings.

In the following cases, it is possible to create network configuration information that can be used as input information for changes based on its original network configuration information.

- When the network configuration information used for registering the network device exists

- When the network configuration information retrieved from Resource Orchestrator using the `rxadm netconfig export` command exists



- For how to create network configuration information (XML definitions), refer to "7.7 When Managing Network Devices as Resources" in the "Design Guide VE".
- For details on the `rxadm netconfig` command, refer to "3.2 `rxadm netconfig`" in the "Reference Guide (Command) VE".

9.5.2.2 Changing Network Device Settings

This section explains how to change settings of a network device.

Network device settings can be changed using the following methods:

- When modifying network devices individually
Use the `rxadm netdevice modify` command.
- When modifying multiple network devices at one time
Use the `rxadm netconfig import` command.



- For details on the `rxadm netdevice` command, refer to "3.3 `rxadm netdevice`" in the "Reference Guide (Command) VE".
- For details on the `rxadm netconfig` command, refer to "3.2 `rxadm netconfig`" in the "Reference Guide (Command) VE".
- For details on the information that can be changed, refer to "8.1.2 Modification" in the "Reference Guide (Command) VE".

9.6 Changing VM Management Software Settings

This section explains how to change VM management software settings.

The following settings can be changed.

- Location
- IP address
- User ID
- Password

Here the method for changing settings registered with Resource Orchestrator is explained.

Complete reconfiguration within the VM management software admin console before performing this procedure.

Use the following procedure to change VM management software settings:

1. In the ROR console management software tree, right-click the target management software, and select [Modify]-[Basic Information] from the popup menu.

The [Modify Management Software(*name*) Settings] dialog is displayed.
The name of the selected VM management software is displayed in *name*.

2. Enter the following items:

Location

Select the location of the VM management software registration to change.

- If VM management software is installed on the admin server
Select [Admin Server].

- In other cases

Select [Other Server].

IP address

If [Other Server] was selected, enter the IP address of the server on which VM management software is installed.

User ID

Enter the user ID to use to control VM management software.

Password

Enter the password for VM management software.

3. Click the [OK] button.

VM management software settings are changed.

9.7 Changing Power Monitoring Environment Settings

This section explains how to change power monitoring environment settings.

Power environment settings include environmental data settings, collection cancel settings, and power monitoring device settings.

9.7.1 Changing Environmental Data Settings

Use the following procedure to change environmental data settings:

1. Select [Tools]-[Options] from the ROR console menu.

The [Options] dialog is displayed.

2. Click the [Environmental Data] category title, and input the following items in the displayed area.

Data to collect

Select the [Power] checkbox to start collecting power consumption data.

Polling interval (in minutes)

Enter the time interval of the data collection (1-6 or 10).

The number of devices that can be monitored simultaneously depends on the value of this polling interval and the load put on the admin server. The following values are guidelines.

Table 9.1 Polling Interval

Polling Interval	Number of Devices that can be Monitored Simultaneously
5 minutes	Up to 40 devices
10 minutes	Up to 60 devices

Use a polling interval of 5 minutes or longer when monitoring chassis and servers. Use a polling interval of 10 minutes if monitoring more than 40 devices.

Data storage period

Enter storage periods for each collection rate. Data older than the configured storage period will be deleted every day.

Enlarging data storage periods reduces the number of devices that can be monitored simultaneously.

Use the default storage period values when monitoring chassis and servers.

3. Click the [Apply] button.

The new settings are applied.



Note

If the [Power] checkbox under [Data to collect] is cleared, the collection of power consumption data (including the calculation of hourly, daily, and other summarized data) will not be performed anymore.

9.7.2 Canceling Collection Settings for Power Monitoring Environments

This section explains how to cancel the collection of power consumption data.

Use the following procedure to cancel the collection of power consumption data.

1. Select [Tools]-[Options] from the ROR console menu.

The [Options] dialog is displayed.

2. Click the [Environmental Data] category title, and modify the values for the following items in the displayed area.

Data to collect

Clear the [Power] checkbox.

3. Click the [Apply] button.

Collection of environmental data is canceled.

9.7.3 Changing Power Monitoring Devices

This section explains how to change power monitoring device settings.

The following settings can be changed.

- Device name
- Admin LAN (IP address)
- SNMP community name
- Voltage
- Comment

Complete setting modifications on the actual power monitoring device before performing this procedure.

Use the following procedure to change power monitoring device settings:

1. From the ROR console, right-click the power monitoring device tree, then select [Modify]-[Registration Settings] from the popup menu.

The [Modify Power Monitoring Device] dialog is displayed.

2. Make changes to the values as needed.
3. Click the [OK] button.

The power monitoring device settings will be changed with the entered information.

9.8 Changing Monitoring Information Settings

This section explains how to change and cancel monitoring information settings.

9.8.1 Changing Monitoring Information Settings

This section explains how to change monitoring information settings.

The following settings can be changed.

- Enabling or disabling of ping monitoring

- Time-out
- Recovery method
- Number of reboots

Use the following procedure to change settings:

1. In the ROR console server resource tree, right-click the target physical OS and the VM hosts, and select [Modify]-[Monitoring Settings] from the popup menu.
The [Configuring monitoring settings] dialog is displayed.
2. Make changes to the values as needed.
3. Click the [OK] button.
The settings for the monitoring information are changed to the entered settings.

9.8.2 Canceling Monitoring Information Settings

This section explains how to cancel monitoring information settings.

Use the following procedure to cancel the monitoring information settings:

1. In the ROR console server resource tree, right-click the target physical OS and the VM hosts, and select [Modify]-[Monitoring Settings] from the popup menu.
The [Configuring monitoring settings] dialog is displayed.
2. Uncheck the [Enable ping monitoring] checkbox.
3. Click the [OK] button.
The settings for the monitoring information are canceled.

9.9 Changing Storage

This section explains how to change storage settings.

9.9.1 Changing Storage Management Software Basic Information

This section explains how to change the basic settings of storage management software.

The following settings can be changed.

- Label
- Comment

Use the following procedure to change the basic settings of storage management software:

1. In the ROR console storage tree, right-click the target storage management software, and select [Modify]-[Registration Settings] from the displayed menu.
The [Resource Change Setting] dialog is displayed.
2. Modify the values for the following items:
Label
Enter up to 32 alphanumeric characters or symbols.
Comment
Enter up to 256 alphanumeric characters or symbols.
3. Click the [OK] button.
Basic information for the storage management software is modified.

9.9.2 Changing Storage Unit Basic Information

This section explains how to change the basic information of storage units.

The following settings can be changed.

- Label
- Comment

Use the following procedure to change the basic information of storage units:

1. In the ROR console storage tree, right-click the target storage unit, and select [Modify]-[Registration Settings] from the displayed menu.
The [Resource Change Setting] dialog is displayed.
2. Modify the values for the following items:
Label
Enter up to 32 alphanumeric characters or symbols.
Comment
Enter up to 256 alphanumeric characters or symbols.
3. Click the [OK] button.
Basic information for the storage unit is modified.

9.9.3 Changing Virtual Storage Resource Basic Information

This section explains how to change the basic settings of virtual storage resources.

The following settings can be changed.

- Label
- Comment

Use the following procedure to modify the basic information for virtual storage resources:

1. In the ROR console storage tree, right-click the target virtual storage resource, and select [Modify]-[Registration Settings] from the popup menu.
The [Resource Change Setting] dialog is displayed.
2. Modify the values for the following items:
Label
Enter up to 32 alphanumeric characters or symbols.
Comment
Enter up to 256 alphanumeric characters or symbols.
3. Click the [OK] button.
The basic information of the virtual storage resource is modified.

9.9.4 Changing Disk Resource Basic Information

This section explains how to modify the basic information for disk resources.

The following settings can be changed.

- Label
- Comment

Use the following procedure to modify the basic information for disk resources

1. Select the target virtual storage in the ROR console storage tree.

The disk resource list is displayed in the [Resource List] tab.

2. From the disk resource list, right-click the target disk resource, and select [Modify]-[Registration Settings] from the displayed menu.

The [Resource Change Setting] dialog is displayed.

3. Modify the values for the following items:

Label

Enter up to 32 alphanumeric characters or symbols.

Comment

Enter up to 256 alphanumeric characters or symbols.

4. Click the [OK] button.

The basic information for disk resources is modified.

9.10 Changing Server Roles

This section explains how to change server role settings.

9.10.1 Server Role Setting Modification

This section explains how to change server role settings.

Set the "Manager" server role for the VM guest on which the ROR manager is running.

This enables restriction of the following operations and functions stopped by the ROR manager, and prevents erroneous operations.

- Operations for ROR manager (VM guest)

- Power operations

- Migration between servers

VM hosts which have been configured as a server registered to the server pool, cannot be specified as a destination VM host.

- Operations for the VM host on which the ROR Manager (VM host) is running

- Power operations

- Backup and restore

- Server switchover (*1)

- Ping monitoring (*2)

- HBA address rename setting

- Deletion of servers (when using HBA address rename)

*1: Auto-recovery does not operate. Spare servers will be excluded from the switchover destination.

*2: Recovery cannot be performed even if settings have been completed.

For VM guests with the "Manager" server role, "[Manager]" is displayed after the name in the resource tree.

Use the following procedure to change settings:

1. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Server Role] from the popup menu.
2. Select [Manager].
3. Click the [OK] button.

The settings of the server role are changed.

Or use the following procedure to change the settings from the menu bar:

1. In the ROR console server resource tree, select the target server, and select [Set]-[Modify]-[Server Role] from the menu bar.
2. Select [Manager].
3. Click the [OK] button.

The settings of the server role are changed.

Note

When powering off servers in the event of a power failure or something similar, write down the server name of the VM host on which the manager is running.

After power is restored, start the VM host server first and then other servers can be started from ROR.

9.10.2 Releasing Server Role Settings

This section explains how to release server role settings.

Use the following procedure to release the settings:

1. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Server Role] from the popup menu.
2. Select [None].
3. Click the [OK] button.

The settings of the server role are changed.

Or use the following procedure to change the settings from the menu bar:

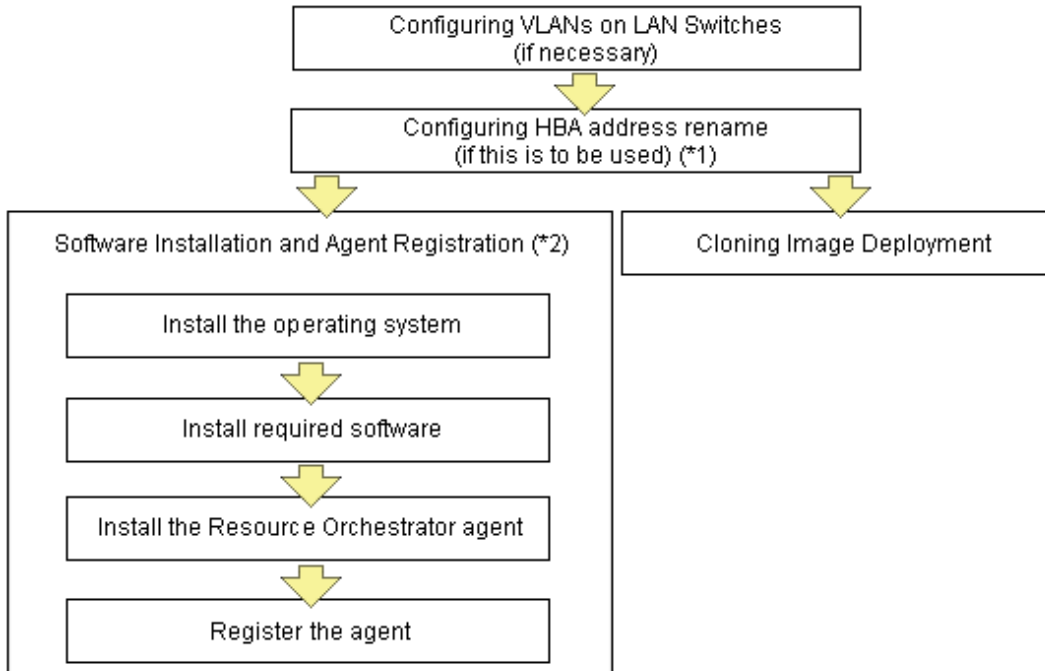
1. In the ROR console server resource tree, select the target server, and select [Set]-[Modify]-[Server Role] from the menu bar.
2. Select [None].
3. Click the [OK] button.

The settings of the server role are changed.

Chapter 10 Configuring the Operating Environments of Managed Servers

This chapter explains how to install software to the registered managed servers and set up their operating environment.

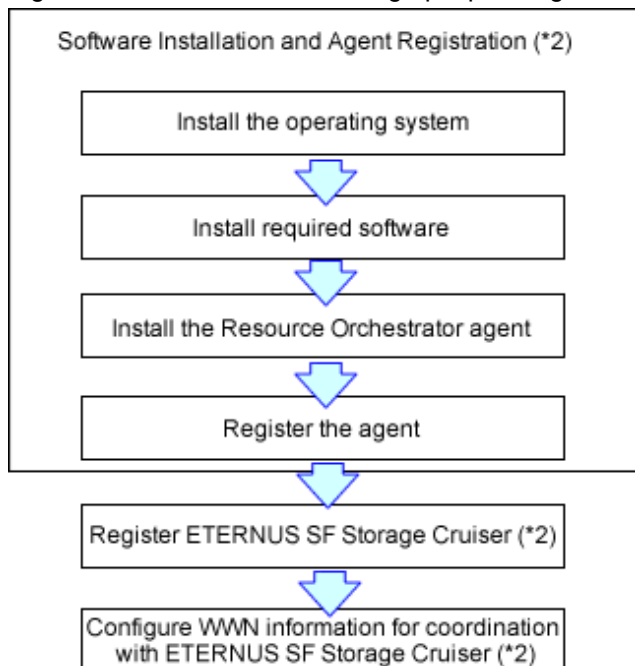
Figure 10.1 Procedure for Setting up Operating Environments (for Blade Servers and Rack Mount Servers)



*1: HBA address rename and VIOM cannot be used together within the same chassis. I/O virtualization settings for all the servers mounted in one chassis must be made using either HBA address rename or VIOM.

*2: These settings can be omitted for resources that have already been installed or registered.

Figure 10.2 Procedure for Setting up Operating Environments (for Fujitsu M10/Enterprise)



- *1: These settings can be omitted for resources that have already been installed or registered.
- *2: Necessary when performing server switchover using the storage affinity method.

- Configuring VLANs on LAN Switch Blades
Refer to "[7.3.4 Configuring VLANs on LAN Switch Blades](#)".
- HBA address rename Settings
Refer to "[7.4.2 HBA address rename Settings](#)".
- Installing Software and Registering Agents
Refer to "Chapter 7 Installing Software and Registering Agents on Managed Servers" in the "Setup Guide VE".
- Deploying Cloning Images
Refer to "[Chapter 17 Cloning \[Physical Servers\]](#)".
- Registering ETERNUS SF Storage Cruiser
Refer to "5.13 rcxadm storagemgr" in the "Reference Guide (Command) VE".
- Configuring WWN Settings for ETERNUS SF Storage Cruiser Integration
Refer to "[10.1 Configuring WWN Settings for ETERNUS SF Storage Cruiser Integration](#)".

10.1 Configuring WWN Settings for ETERNUS SF Storage Cruiser Integration

This section explains how to configure WWN settings for integration with ETERNUS SF Storage Cruiser. Specifying HBA WWNs, storage WWNs, and AffinityGroup for ETERNUS SE Storage Cruiser enables configuration of the zoning settings of Fibre Channel switches and storage unit host affinity. When performing switchover on managed servers, using the WWN settings enables the admin server to automatically change settings of storage devices. Use of this function requires registration of specific settings for ETERNUS SF Storage Cruiser in advance. Fibre Channel Switches and storage units connected to managed servers must be registered on ESC.



- WWN settings for servers and HBAs are not performed by this function.
- Configuration cannot be performed for managed servers that are configured as spare servers or are used as spare servers. Therefore, perform this configuration before configuring spare servers.

Use the following procedure to configure the WWN settings.

When changing the current WWN information, configure the new WWN information after deleting Fibre Channel Switch zoning and storage unit host affinity in the currently configured WWN information.

1. In the ROR console server resource tree, right-click the target physical server, and select [Modify]-[WWN Settings] from the popup menu.
The [WWN Settings] dialog is displayed.
2. Perform the following settings:
HBA ports
Select the following values according to the system configuration.
 - Procedures for Single-path Configurations
Specify "1" for HBA ports.

- Procedures for Multi-path Configurations

Select the number of multi-paths for HBA ports.

However, it is necessary to select "1" during installation of the operating system. Select the number of paths and reconfigure HBA address rename settings after setting up the multi-path driver.

[OVM for SPARC]

When using an IO domain in an OVM for SPARC environment, select the numbers of the HBA ports used in the control domain and the IO domain. If the primary server and the spare server share disks, exclude the numbers of HBA ports for the shared disks.

Portn WWPN

Enter or select the WWPN of an HBA collected from physical servers.

When using a multi-path configuration, enter the values of the HBAs and the corresponding CAs of servers in the same order, based on the values in "6.1.6 Settings when Switching Over Fujitsu M10/SPARC Enterprise Servers" in the "Design Guide VE".

If the primary server and the spare server share disks, do not enter the HBA ports for the shared disks.

Target CA

Select WWPNs of storage CA and AffinityGroup.

Select hyphens ("-") to keep spare servers inactive.

Also, select a hyphen ("-") when deleting Fibre Channel Switch zoning and storage unit host affinity in the configured WWN information.

When using a server on which an agent is registered as a spare server, the server must meet all of the following conditions:

- When the WWPN of the target CA is the same value as that of the primary server
- When the AffinityGroup value is different from the value of the primary server
- When agents are not registered on ETERNUS SF Storage Cruiser



Note

When using the storage affinity switchover method, if a hyphen ("-") is selected, the storage path settings will be deleted.

3. Click the [OK] button.

Perform configuration or deletion of Fibre Channel Switch zoning and storage unit host affinity based on the configured WWN information. When the target operation server is registered on ESC, the status should be as below:

- Configuration

The server should be turned on

- Deletion

The server should be turned off

When configuration and deletion of Fibre Channel Switch zoning and storage unit host affinity have been already executed, no operations will be performed on the devices.



Note

- For WWPN value specification, check that the value does not overlap with the WWPN used for HBA address rename or VIOM. If the same WWPN is used, there is a chance data on storage units will be damaged.
- When configuration or deletion of Fibre Channel switches or storage units performed, a warning dialog is displayed. Make sure that there are no problems in the settings, then click the [OK] button.
- If the target CA is not displayed, confirm the status of the following settings:
 - ESC is correctly registered on Resource Orchestrator.
 - Fibre Channel switches and storage units are correctly registered.

- Only one access path is configured on ESC for each CA of an HBA.
-

10.2 Deploying Cloning Images

For the second and subsequent servers, operating systems are created using the cloning image collected from the first server.

For details on cloning, refer to "[Chapter 17 Cloning \[Physical Servers\]](#)".

Chapter 11 Deleting Resources

This chapter explains how to delete resources.

It is possible to register and delete a managed server and LAN switch as a single resource when they are in the same chassis.

Note that operation of a server cannot be performed while the LAN switch is being registered or removed.

If the operation is performed simultaneously for multiple resources, one of the following messages is displayed.

In this case, wait until the current operation is completed before executing the desired operation again.

```
FJSVrcx:ERROR:67210: LAN_switch_name(LAN switch):is busy
```

or

```
FJSVrcx:ERROR:67210: Managed_server_name (physical server):is busy
```

11.1 Deleting Chassis

This section explains how to delete chassis.

Use the following procedure to delete the chassis.

1. In the ROR console server resource tree, right-click the target chassis, and select [Delete] from the popup menu.

The [Delete Resource] dialog is displayed.

2. Click the [OK] button.

The target chassis is deleted from the server resource tree.



Note

If server blades and partitions within the chassis were already registered, delete these server blades and partitions before deleting the chassis.

If LAN switches have been registered, delete all LAN switches before deleting the chassis.

11.2 Deleting Managed Servers

This section explains how to delete managed servers.

Use the following procedure to delete managed servers.

1. In the ROR console server resource tree, right-click the target server (or the physical OS or the VM host on the server) and select [Delete] from the popup menu.

The [Delete Resource] dialog is displayed.

If a VM host is running on the server to be deleted, any VM guests running on that host are also deleted from the server resource tree at the same time. The VM guests to be deleted appear in the [Delete Resource] dialog, so check that it is safe to delete them.

2. Click the [OK] button.

- If a physical OS or VM host exists on the target server and HBA address rename is set

The server will be powered off and the target server will be unregistered when the resource is deleted. Resource Orchestrator does not delete the host affinity settings of storage units or the zoning settings of Fibre Channel switches.

- If WWN information is set for the target server

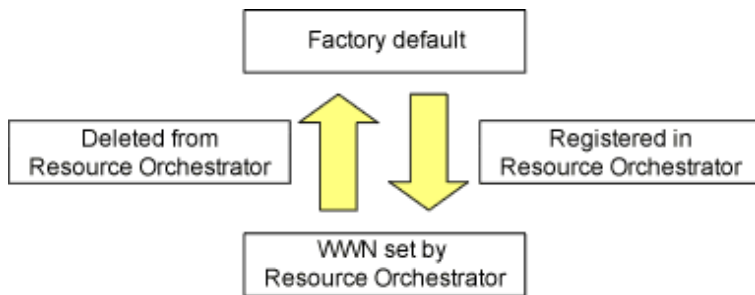
The host affinity settings of storage units and the zoning settings of Fibre Channel switches will be deleted when the Fujitsu M10/SPARC Enterprise is deleted.

- If the deleted server is a PRIMERGY BX series, a PRIMEQUEST, a SPARC Enterprise M4000/M5000/M8000/M9000, or a Fujitsu M10-4S

The target server will be unregistered and remain in the server resource tree.

Information

- If HBA address rename has already been set up on the managed server, the HBA WWN is reset to the factory default. When this occurs, the managed server is turned on temporarily, after the power is forcibly turned off once. When the operating system is running on a managed server, it is recommended to shut it down before deleting the server.



- VM guests can be deleted using the management console of the server virtualization software used. Doing so will automatically delete those VM guests from Resource Orchestrator as well.
- If the same storage device volume is to be used to operate the target server after the server has been deleted, use storage management software such as ETERNUS SF Storage Cruiser to reset the storage host affinity and fibre channel switch zoning with the factory default WWN.
- Any system images backed up from the target server are also deleted automatically.
- Settings for target disks of image operations are also deleted. To re-register the server that was deleted, configure the target disks of image operations if necessary.
- After the server has been deleted, the maintenance LED is switched OFF automatically.
- Deleting a server on which both the HBA address rename function and a VM high-availability feature (provided by the server virtualization software used) are enabled will produce the following behavior. The server will be powered off, causing the high-availability feature to trigger its VM recovery process. To avoid interruption of hosted applications during server deletion, it is recommended to move VM guests to another server beforehand. For more details on the high-availability features available for each server virtualization software, refer to "9.2.1 Configuration Requirements" in the "Design Guide VE".
- When a managed PRIMEQUEST 2000 series server is deleted, the result varies depending on the partition status, as follows:
 - When an Extended Partition configured on a PPAR with Extended Partitioning Mode set to "Disable" or on a PPAR partition with Extended Partitioning Mode set to "Enable" is deleted
The target server will remain unregistered in the resource tree.
 - When an Extended Partition configured on a PPAR with Extended Partitioning Mode set to "Enable" or on a PPAR partition with Extended Partitioning Mode set to "Disable" is deleted
The target server disappears from the server resource tree.

11.3 Canceling VIOM Integration

This section explains how to cancel VIOM integration.

Use the following procedure to cancel VIOM integration:

1. In the ROR console management software tree, right-click the target management software (VIOM), and select [Delete] from the popup menu.
The [Delete Resource] dialog is displayed.

2. Click the [OK] button.

The target management software (VIOM) is deleted.

To delete registered VIOM server profiles, follow the procedure described in "[7.1.1 Registering VIOM Server Profiles](#)" to open the Web interface of ServerView Virtual-IO Manager and delete the desired profiles from there.



Integration with VIOM cannot be canceled in the following cases.

- When there are spare server settings involving the VIOM server profile exchange method
- When there are servers using the VIOM server profile exchange method that are in the following states
 - Being switched over
 - Have been switched over (prior to failback)
 - Being failed back
- Server blades that are managed using VIOM, and are currently the target of operations by Resource Orchestrator (power control, image-related processes, etc.)

When using VIOM coordination as I/O virtualization with rack mount servers, if VIOM server profiles are left assigned when VIOM coordination is deleted, the MAC addresses on the target rack mount servers remain with I/O virtualization.

When using rack mount servers, VIOM server profiles need to be unassigned before deleting VIOM coordination.

11.4 Deleting LAN Switch Blades and Network Devices

This section explains how to delete LAN switch blades and network devices.

11.4.1 Deleting LAN Switch Blades

This section explains how to delete LAN switch blades.

Use the following procedure to delete LAN switch blades.

1. In the ROR console server resource tree, right-click the target LAN switch blade and select [Delete] from the popup menu.

The [Delete Resource] dialog is displayed.

2. Click the [OK] button.

The target LAN switch blade is unregistered.

11.4.2 Deleting Network Devices

This section explains how to delete network devices.

Use the following procedure to delete a network device.

- The Procedure Using the ROR Console

1. In the ROR console network device tree, right-click the target network device and select [Delete] from the popup menu.

The [Delete Resource] dialog is displayed.

2. Click the [OK] button.

The target network device is deleted from the network device tree.

- The Procedure From the Command Line

Use the `rcxadm netdevice delete` command.



See

For details on the `rcxadm netdevice` command, refer to "3.3 `rcxadm netdevice`" in the "Reference Guide (Command) VE".

11.5 Deleting VM Management Software

This section explains how to delete VM management software.

Use the following procedure to delete VM management software.

1. In the ROR console management software tree, right-click the target management software, and select [Delete] from the popup menu.

The [Delete Resource] dialog is displayed.

2. Click the [OK] button.

The target management software is deleted.

11.6 Clearing the Power Monitoring Environment

This section explains how to clear the power monitoring environment.

Clearing the power monitoring environment is done by deleting power monitoring targets.

For details on how to release collection settings, refer to "[9.7.2 Canceling Collection Settings for Power Monitoring Environments](#)".

11.6.1 Deleting Power Monitoring Devices

This section explains how to delete power monitoring devices.

Use the following procedure to delete power monitoring devices:

1. In the ROR console power monitoring devices tree, right-click the target power monitoring device and select [Delete] from the popup menu.

The [Delete Resource] dialog is displayed.

2. Click the [OK] button.

The target power monitoring devices are deleted from the tree view.

11.7 Deleting Admin LAN Subnets

This section explains how to delete admin LAN subnets.

Use the following procedure to delete an admin LAN subnet.

1. From the ROR console menu, select [Settings]-[Admin LAN Subnet].

The [Admin LAN Subnet] dialog is displayed.

2. Select the subnet to delete.

3. Click the [Delete] button.

The [Delete Admin LAN Subnet] dialog is displayed.

4. Click the [OK] button.

The target subnet information is deleted.



Information

When an admin LAN subnet is deleted, the simplified DHCP service for Resource Orchestrator will be disabled.

In this case, either use the OS standard DHCP service that was enabled when the admin LAN subnet was registered, or perform re-installation after uninstalling the manager.



It is not possible to delete the information of subnets that have managed servers registered.

Before deleting subnet information, delete all managed servers that have been registered on the relevant subnet.

11.8 Unregistering ETERNUS SF Storage Cruiser

This section explains how to unregister ETERNUS SF Storage Cruiser.

ETERNUS SF Storage Cruiser can be unregistered using the `rcxadm storagemgr unregister` command.

For details on the `rcxadm storagemgr unregister` command, refer to "5.13 `rcxadm storagemgr`" in the "Reference Guide (Command) VE".

11.9 VM Host Unregistration

This section explains unregistration of VM hosts in guest domains on Oracle VM for SPARC.

Use the following procedure to unregister a VM Host.

1. In the ROR console server resource tree, right-click the guest domain which is registered on the VM Host, and select [Unregister] from the popup menu.

The [VM Host unregistration] dialog is displayed.

2. Click the [OK] button.

When VM hosts are unregistered, they are converted back into VM guests.

11.10 Deleting the Public LAN (MAC Address) Information

This section explains how to delete the public LAN (MAC address) information of a rack mount server or a tower server.

1. In the ROR console server resource tree, right-click the target server, and select [Modify]-[Public LAN (MAC Address) Information] from the popup menu.

The MAC addresses of the NICs for the admin LAN and the public LAN that have been configured in the [Public LAN (MAC Address) Information] dialog are displayed.

2. Select the NIC to delete using the radio button.

3. Click [Delete].

Use the dialog to check that the target MAC address has been deleted.

Repeat steps 2 and 3 as many times as there are MAC addresses to delete.

4. Click the [OK] button.

5. Edit the definition file.

This step is only necessary when performing management using VIOM.

Delete the definition of the PCI bus number corresponding to the detached NIC.

For details on the definition file, refer to "7.1.2 When Managing Rack Mount or Tower Servers Using VIOM".

Chapter 12 Pre-configuration for Resource Registration and Modification

This chapter provides an overview of the pre-configuration function and explains how to use system configuration files.

12.1 Overview

Using the Pre-configuration function, it is possible to create system definition files that can be later used to setup a Resource Orchestrator environment. Importing system configuration files makes it easy to perform various registration settings in one operation. This prevents the operating mistakes induced by sequences of individual, manual configuration steps.

The pre-configuration function can be used in the following situations.

- New Installation

From a traditional work office (or another off-site location), define the various parameters required for Resource Orchestrator and record them in a system configuration file. Next, send this definition file to your actual system location (machine room), and import the file into Resource Orchestrator using the import functionality of the ROR console. This single operation automates the registration of all the servers defined in the system configuration file.

- Backing up a System Configuration

Using the export function of the ROR console, the current Resource Orchestrator configuration can be exported to a system configuration file.

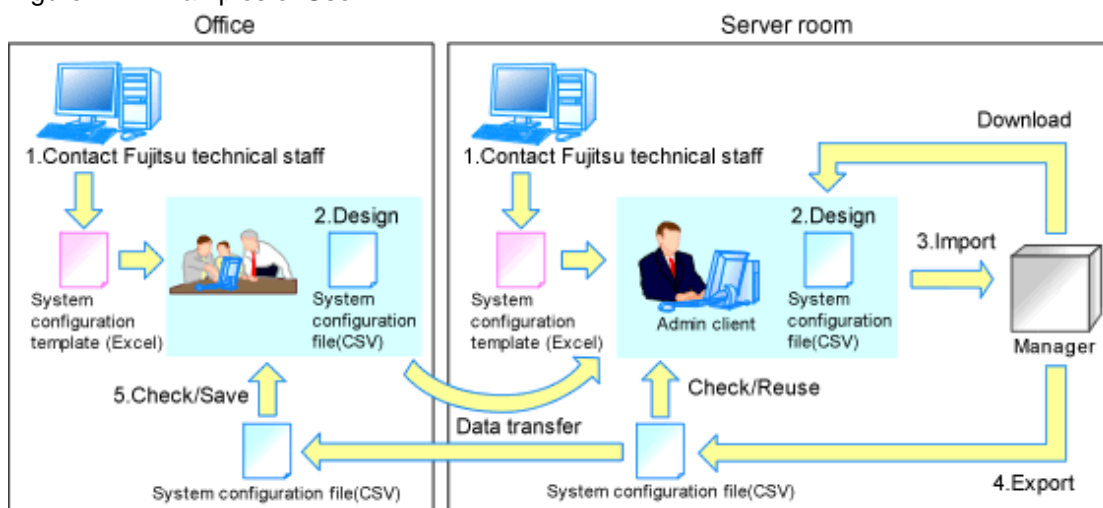
- Batch Reconfiguration

The registration settings of already registered resources can be modified easily by exporting the current configuration to a system configuration file and editing the desired configuration items before re-importing that configuration file. The actual reconfiguration is then performed as a single import operation.

- Re-use of Existing Configurations

Once a system has been fully setup, its configuration can be exported and re-used as a basis for the design of other systems. This makes it easy to design various systems located in different sites.

Figure 12.1 Examples of Use



Only system configuration files in CSV format can be imported or exported. For details on the system configuration file's format, refer to "[Appendix B Format of CSV System Configuration Files](#)".

Resource Orchestrator provides a sample in CSV format. To obtain a copy of the Excel template (hereinafter system configuration template), contact Fujitsu technical staff. This system configuration template makes it easy to create system configuration files in CSV format.

- When loading a system configuration template from a CSV file, or importing a system configuration file from the ROR console
Use the format described in "[B.2 File Format](#)" for the system configuration file.
- When saving a file in CSV format from the system configuration template, or exporting a system configuration file from the ROR console
Export will be performed using the latest file format given in "[B.2 File Format](#)".

The following operations, usually performed from the ROR console, can be equally performed using the pre-configuration function.

- Registration
 - "[7.1 Registering VIOM Coordination](#)"
 - "[7.3 When Using Blade Servers](#)"
 - "[7.11 Registering LAN Switches](#)"
 - "[7.2 Registering VM Management Software](#)"
 - "[7.8 Registering Power Monitoring Devices](#)" (*1)
 - "[7.9 Registering Admin LAN Subnets](#)"
 - "[7.3.4 Configuring VLANs on LAN Switch Blades](#)"
 - "[7.4.2 HBA address rename Settings](#)" (*2)
 - "Chapter 8 Configuring Monitoring Information" in the "Setup Guide VE"
 - "[Chapter 18 Settings for Server Switchover](#)"
- Modification
 - "[8.1 Changing Admin IP Addresses](#)" (*3)
 - "[9.1.11 Changing Admin LAN Subnets](#)"
 - "[9.1.2 Changing Server Names](#)"
 - "[9.1.3 Changing Admin IP Addresses](#)" (*3)
 - "[9.1.4 Changing SNMP Communities](#)"
 - "[9.1.5 Changing Server Management Unit Configuration Settings](#)"
 - "[9.1.7 Changing VM Host Login Account Information](#)"
 - "[9.1.8 Changing the VLAN Settings of LAN Switch Blades](#)"
 - "[9.1.9 Changing HBA address rename Settings](#)" (*2)
 - "[9.1.10 Changing Boot Options](#)"
 - "[9.3 Changing VIOM Registration Settings](#)"
 - "[9.4 Changing Settings of LAN Switch Blades and LAN Switches](#)"
 - "[9.6 Changing VM Management Software Settings](#)"
 - "[9.7 Changing Power Monitoring Environment Settings](#)"
 - "[9.8 Changing Monitoring Information Settings](#)"
 - "[18.3 Changing Server Switchover Settings](#)"

*1: To start collecting environment data, the collection settings should be manually set from the ROR console's option dialog.

*2: Restart all the managed servers that were either registered or modified following an import operation.

*3: The pre-configuration's scope of configuration is the same as that of the ROR console.

Moreover, the pre-configuration function can perform the same labels and comments settings as those available in BladeViewer. Those settings are described in "[Chapter 6 BladeViewer](#)" and "[6.5.1 Listing and Editing of Labels and Comments](#)".

Note

- The following operations cannot be performed by the pre-configuration function, and should be performed from the ROR console.
 - Deleting registered resources from Resource Orchestrator
 - Changing the name of a registered chassis, physical server (only for servers other than PRIMERGY BX servers) or a power monitoring device
 - Deleting registered admin LAN subnets
 - Discovering, registering, or changing registration settings of a LAN switch
 - Detecting physical link information from a LAN switch
 - Canceling VIOM Integration
 - Registration and deletion of SNMP trap destinations
 - Configuration and change of WWN information using ETERNUS SF Storage Cruiser integration
 - Agent registration of Oracle VM for SPARC guest domains
- The following operations cannot be performed by the pre-configuration function, and should be performed using commands.
 - Registration and deletion of ETERNUS SF Storage Cruiser integration
- Make sure that less than 200 resources are specified for registration or changing in the system configuration file specified for import. If it is necessary to specify more than 200 resources for registration or changing, do by importing multiple system configuration files.
- When using ServerView Deployment Manager on the admin LAN, the following settings cannot be defined using the pre-configuration function. For details on co-existence with ServerView Deployment Manager, refer to "B.2 Co-Existence with ServerView Deployment Manager" in the "Setup Guide VE".
 - Spare server settings (using the backup and restore or HBA address rename method)
 - HBA address rename Settings

12.2 Importing the System Configuration File

This section explains how to import a system configuration definition file (saved in CSV format) from the ROR console.

Use the following procedure to import a system configuration definition file.

1. Prepare a system configuration file in CSV format.

Point

- System configuration templates in Excel format cannot be directly imported into Resource Orchestrator. Use the template's save to CSV function to produce a system configuration file in CSV format before importing.
- Only system configuration files conforming to the format described in "[B.2 File Format](#)" can be imported. For details on the file format, refer to "[Appendix B Format of CSV System Configuration Files](#)".
- Make sure that less than 200 resources are specified for registration or changing in the system configuration file. If it is necessary to specify more than 200 resources for registration or changing, do by importing multiple system configuration files.
- When changing resources in different sections, perform import of the configuration definition files for each section.
- When importing system configuration files which begins with "RCXCSV,V1.0" in the first line, the agent cannot automatically be registered. Moreover, the registration fails in cases where a spare server is defined to a VM host in the system configuration file.

2. Open and log in to the ROR console according to "[Chapter 1 Login and Logout](#)".
3. In the ROR console, select [File]-[System Configuration File]-[Import] from the menu.
The [Import System Configuration File] dialog is displayed.
4. Specify a configuration file prepared in step 1.
5. Click [OK].

The import process starts. The system configuration file is verified first, and then resources are imported one by one, following the order defined by the system configuration file.

The processing of resource registration or change is executed after the verification.

The process status can be checked in the Recent Operations area of the ROR console.

Clicking [Cancel] in the Recent Operations area displays a confirmation dialog and stops the import process. The [Cancel] button interrupts the import process after completing the current process. Note that the processing performed up to the error point is effective in the system.

Point

- The "SpareServer", "ServerAgent" and "ServerVMHost" sections must meet the conditions below when performing pre-configuration.

- a. Spare server section ("SpareServer")

In cases where the specified spare server has no operating system installed

The physical server which is defined as a spare server must not be defined in "ServerWWNN", "ServerAgent", or "ServerVMHost" sections.

When configuring a server using I/O virtualization as a spare server

The server must meet one of the following conditions:

- HBA address rename information must already be configured on the physical server in which a spare server is defined
- A VIOM server profile must already be configured on the physical server in which a spare server is defined

In cases where the specified spare server is a VM host

The physical server which is defined as a spare server must already be registered for the Resource Orchestrator agent.

When configuring a server with WWN information set using storage affinity switchover as a spare server

WWN information must already be configured on the primary server and the spare server.

If the above conditions are not met, divide the section as different CSV files, and import them one by one.

- b. Agent section ("ServerAgent" or "ServerVMHost")

To register an agent, it must fulfill all of the following conditions. Please import agents only if they meet all these conditions.

The agent of Resource Orchestrator must already be installed on the managed server.

An OS must be running on the managed server.

The agent of the target physical server must be registered, or the agent registration section defined in the system configuration file.

- In the "Server" section, when registering or changing managed servers in different subnets than the admin server, one of the following conditions must be fulfilled:
 - The target subnet information is registered.
 - The target subnet's information is defined in the "Subnet" section of the CSV format system configuration file.

Note

- When registering a new server with the registered primary server, and configuring it as a spare server, import the "Server" section and "SpareServer" section separately.
- When changing physical server names during pre-configuration, it cannot be performed at the same time as other pre-configuration operations. Import the "Server" section separately from other sections.

6. When the import is completed successfully, a message is displayed in the Recent Operations area.

Point

- Error handling

The processing of resource registration or change is executed after the verification of the system configuration file during import.

If an error occurs during the verification process, which means an invalid value exists in the system configuration file, an error message is displayed only in the event log. Correct the system configuration file, and import it again.

Invalid content also includes invalid section headers.

If there is an error message displayed, but the values in the specified line are all correct, check whether the section header is correct or not.

If an error occurs during registration and change process, an error message is displayed in both the recent operations area and the event log. In this case, the process is finished up to the previous line setting, that is, before the system configuration file line number which message is displayed. Correct the system configuration file and rectify the problem, then import it again. The process will resume from the position where it stopped.

- Import log file

The import log is saved in the following location on the manager.

In cases where an error occurs in the verification step, which means the processing of registration or changing the resource has not started yet, no log file is created.

[Windows Manager]

Installation_folder\SVROR\Manager\var\log\config.log

[Linux Manager]

/var/opt/FJSVrcvmr/log/config.log

- Backing up the manager prior to import automatically

When importing is performed by a user, exporting is also automatically executed. The export file is saved as the backup of the manager configuration. Use this file to return to the previous values if there is an input error in the system configuration file. Note that the backup can store the latest five versions.

The system configuration file backup can be stored in the following folder on the manager.

[Windows Manager]

Folder

Installation_folder\SVROR\Manager\var\config_backup

File name

rcxconf-YYYYMMDDHHMMSS.csv (the date and time are shown in YYYYMMDDHHMMSS)

[Linux Manager]

Directory

/opt/FJSVrcvmr/var/config_backup

File name

rcxconf-YYYYMMDDHHMMSS.csv (the date and time are shown in YYYYMMDDHHMMSS)

7. Perform post-setting operations.

If the import is completed successfully, perform the following procedures if required.

- If HBA address rename is set, then restart the relevant managed server.
- If the agent is registered, perform either one of the following to enable further backup or cloning operations.
 - Restart the managed server.
 - Restart the Related Service described in "2.2 Starting and Stopping Agents" in the "Operation Guide VE".

12.3 Exporting the System Configuration File

This section explains the method for exporting a system configuration file containing the current system settings.

Use the following procedure to export the system configuration file in CSV format from the ROR console.

1. Open and log in to the ROR console according to "[Chapter 1 Login and Logout](#)".
2. In the ROR console, select [File]-[Export] from the menu.
3. The export process starts automatically.
4. When the process complete successfully, the [File Download] dialog is displayed.

Click one of the following.

- When clicking [Save]

As the [Save As] dialog is displayed, specify the destination folder and file name, and then save the file. Note that the system configuration file can be exported only in the CSV format.

- When clicking [Open]

Open the file using an application (such as Excel) associated to CSV files.

- When clicking [Cancel]

Export operations will be canceled.

Note

- If any server is in switchover state, the server name is enclosed in parentheses, such as "(name)".
 - The admin server subnet information is not output in the "Subnet" section.
 - For a LAN switch blade PY CB DCB SW 10Gb 18/6/6, the VLAN settings of external ports are not exported.
 - For the following LAN switch blades, VLAN settings are not exported.
 - PRIMERGY BX 900 and BX 400 LAN switch blades operating in IBP mode or Converged Fabric mode.
 - PY CB 10Gb FEX Nexus B22 LAN switch blades
-

Point

Error handling

If an error occurs during the export, an error message is displayed. Follow the message diagnostic to resolve the problem.

Chapter 13 NetworkViewer

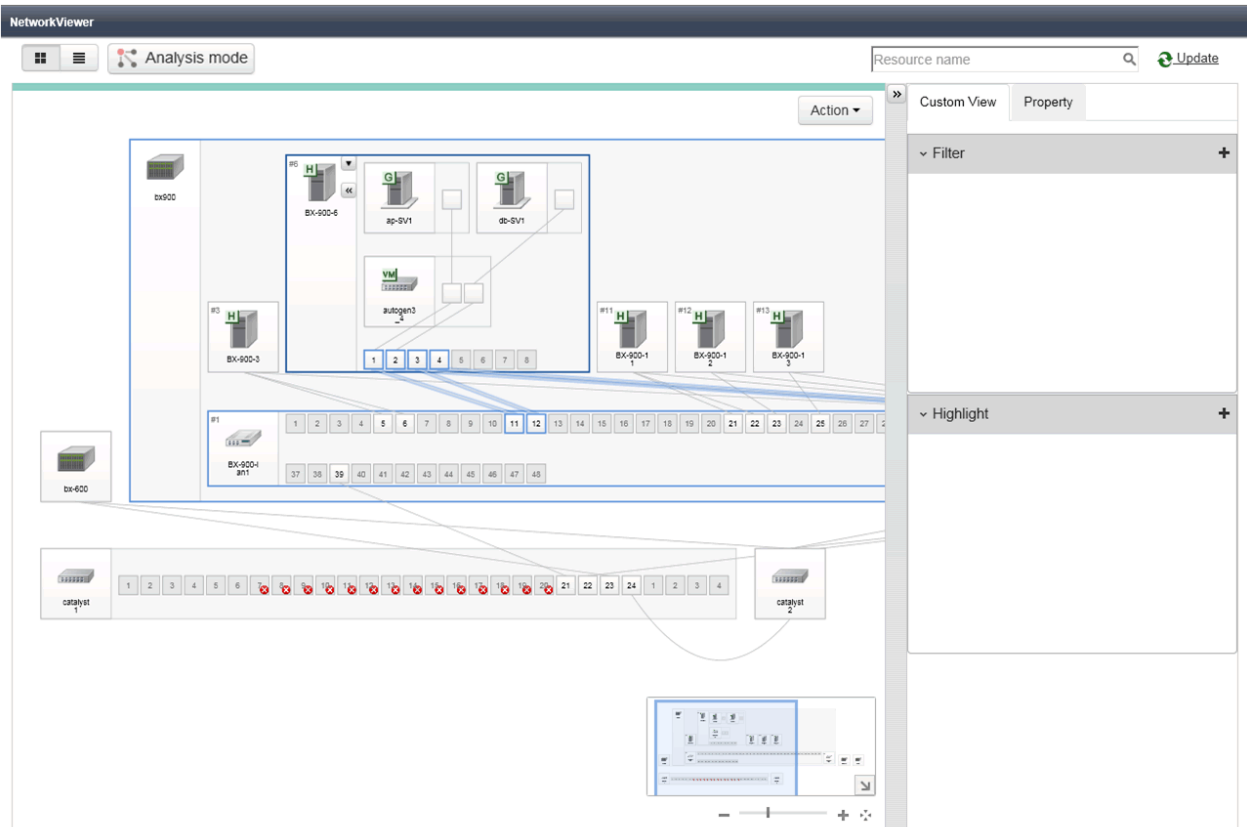
This chapter provides an overview of NetworkViewer and describes its features.

13.1 Overview

This section provides an overview of NetworkViewer.

NetworkViewer is a GUI that can display the connections of a physical network consisting of servers, LAN switches, and LAN switch blades.

Figure 13.1 NetworkViewer



The operations which can be performed using NetworkViewer are shown below.

- Display of network configurations

The following network configurations managed by Resource Orchestrator are displayed.

- Network configuration of physical and virtual servers (including virtual switches and VM guests)

- Monitoring of resource statuses

The following information for resources managed in Resource Orchestrator is displayed.

- Statuses of network links between all resources
- VLAN configuration affecting each physical and virtual server
- Resource information

- Analysis and forecasting of the scope affected by device failure

The following operations can be performed on the resources managed by Resource Orchestrator.

- Saving influence scope data at an arbitrary point of time

- Viewing the scope of impact on communication routes other than failed devices, based on influence scope data
- Forecasting of the scope of impact on communication routes other than those using failed devices, which can be performed by editing influence scope data
- Exporting and importing of influence scope data



Information

- The NetworkViewer uses the Web browser's standard fonts and is designed to be viewed in a window of 1200 by 800 pixels or larger. When using a monitor with a higher resolution than this, it is recommended to enlarge the screen size. If the Web browser is resized by a significant amount, the display quality may deteriorate.
 - NetworkViewer is updated automatically every ten seconds. To update Network links manually, click the update button.
 - When the Ethernet Fabric switch (Converged Fabric) that contains registered LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2 in the hardware component is registered, the name of the switch blade is changed to the port name which corresponds to the Ethernet Fabric switch (Converged Fabric). Moreover, when either port is selected, the port which corresponds to the other LAN switch is selected.
-

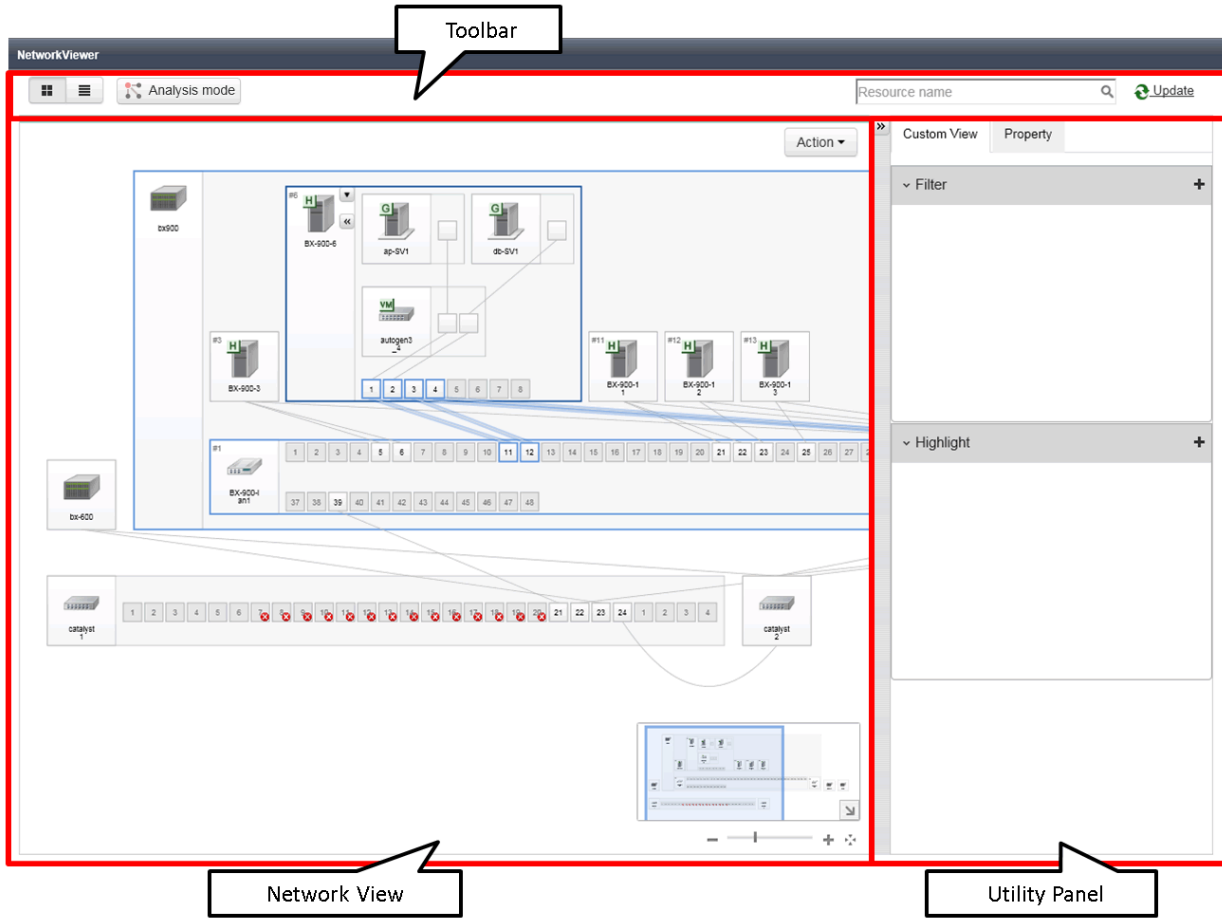
13.2 Screen Layout

This section explains NetworkViewer's layout.

13.2.1 Layout

The NetworkViewer window consists of the tool bar, the network view, and the utility panel.

Figure 13.2 NetworkViewer Layout



13.2.1.1 Toolbar

The tool bar can be used to operate the network view.

Figure 13.3 Toolbar



This section explains the layout of the tool bar.

[Map] Button

Switches from the network view to the map view.

[List] Button

Switches from the network view to the list view.

For details on the list view, refer to "13.2.3 Network View (Physical List)".

[Analysis Mode] Button

Starts the Analysis Mode window.

For details on the Analysis Mode window, refer to "13.2.6 Analysis Mode".

Resource Search

The area retrieved by the resource name.

[Update] Button

Update NetworkViewer to show the latest status.

13.2.1.2 Network View

A view to display network configurations or resource lists.

The network view can be displayed in a map view or a list view.

It can be displayed in the map format and the list format at the same time.

- Physical Map

Shows the statuses of registered resources and the network links between them.

For details, refer to "[13.2.2 Network View \(Physical Map\)](#)".

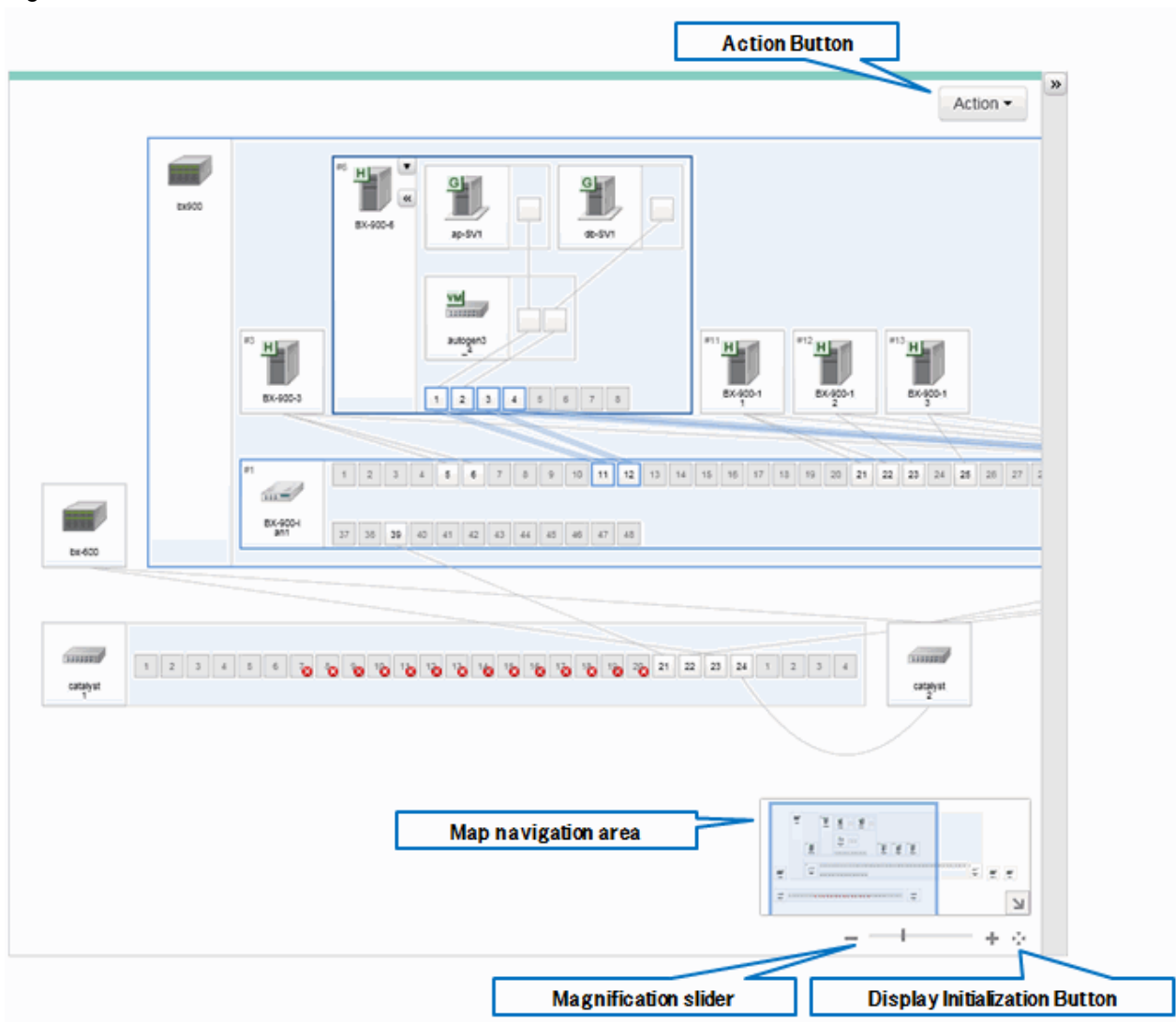
- Physical List

Shows the statuses of registered resources and parent resources in a list format.

For details, refer to "[13.2.3 Network View \(Physical List\)](#)".

For the map view, the window display location can be scrolled by dragging and dropping.

Figure 13.4 Network View



This section explains the Network view's layout.

[Action] Button

- Analysis Mode

This button performs operation of the Analysis Mode.
For details, refer to "[13.2.6 Analysis Mode](#)".

- Export View Information

This button outputs the network view information as a CSV file.

Map navigation area

All areas are displayed, including those that cannot be displayed by the network view.

The arrow button located in the lower right of the map navigation area enables opening and closing of the map navigation area.

By dropping and dragging the display frame in the map navigation area, the display location of the network view can be scrolled in coordination with the frame.

Magnification Slider

Maximizes or minimizes the network view.

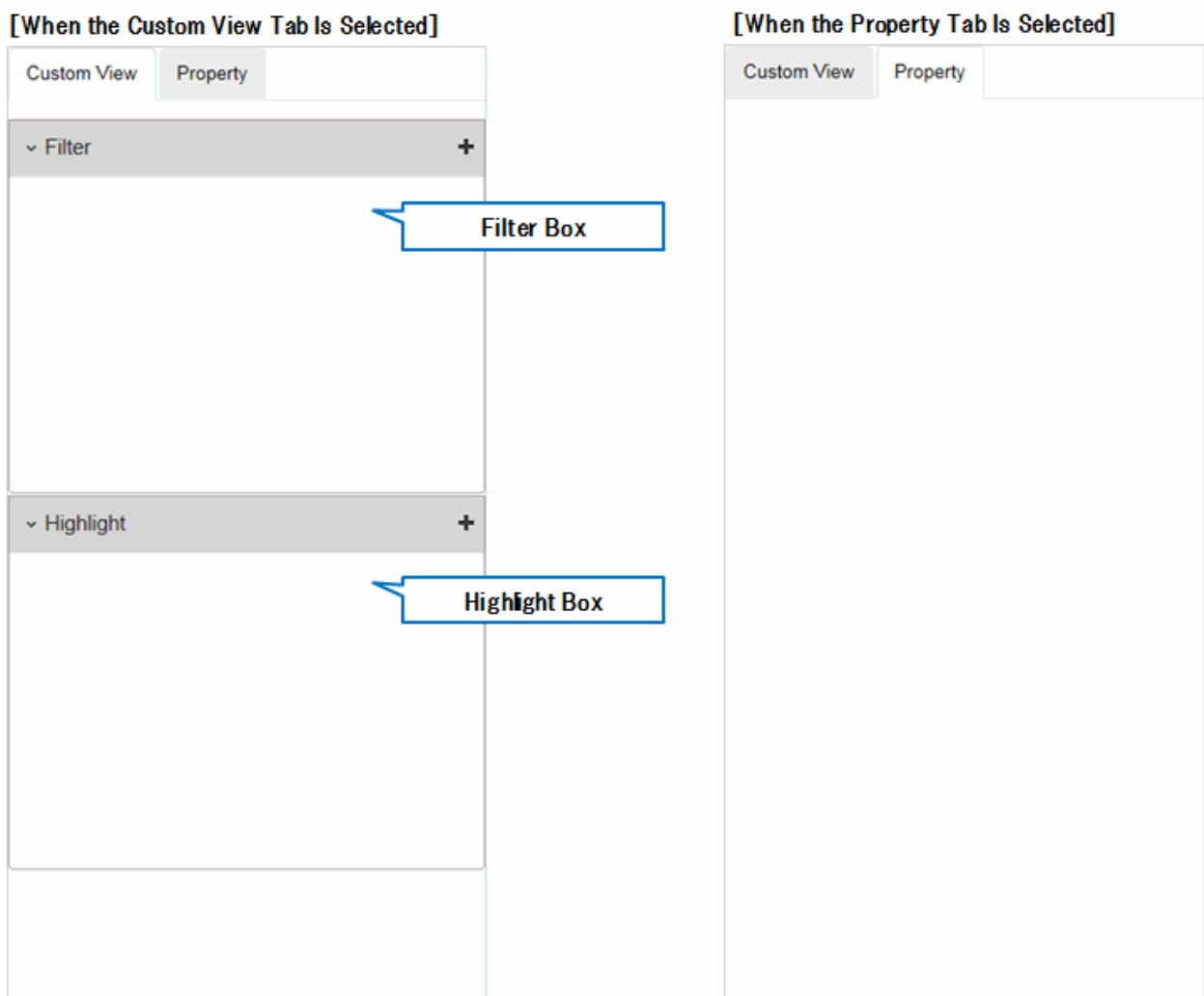
[Display Initialization] Button

The button that returns a window that has been moved to its default position.

13.2.1.3 Utility Panel

This view is the window to display the detailed information of the condition settings of network view display or resources.

Figure 13.5 Utility Panel



Custom View

Use the custom view to filter and highlight resources.

For details, refer to "[13.2.4 Utility Panel \(Custom View\)](#)".

Property

Resource details are displayed.

For details, refer to "[13.2.5 Utility Panel \(Property\)](#)".

13.2.2 Network View (Physical Map)

This section describes the information that is displayed in a physical map of the network view.

Initially the following resources managed by Resource Orchestrator and connections between the resources are displayed:

- Chassis
- Servers
- L2 switches
- Network devices

Selecting a resource displays a blue frame around that resource. Adjacent resources are indicated by light blue frames.

When a selected resource is expanded, information about links with other resources and the relations of links with resources in the expanded resource is displayed.

Figure 13.6 Display Example of Network View (Physical Map)

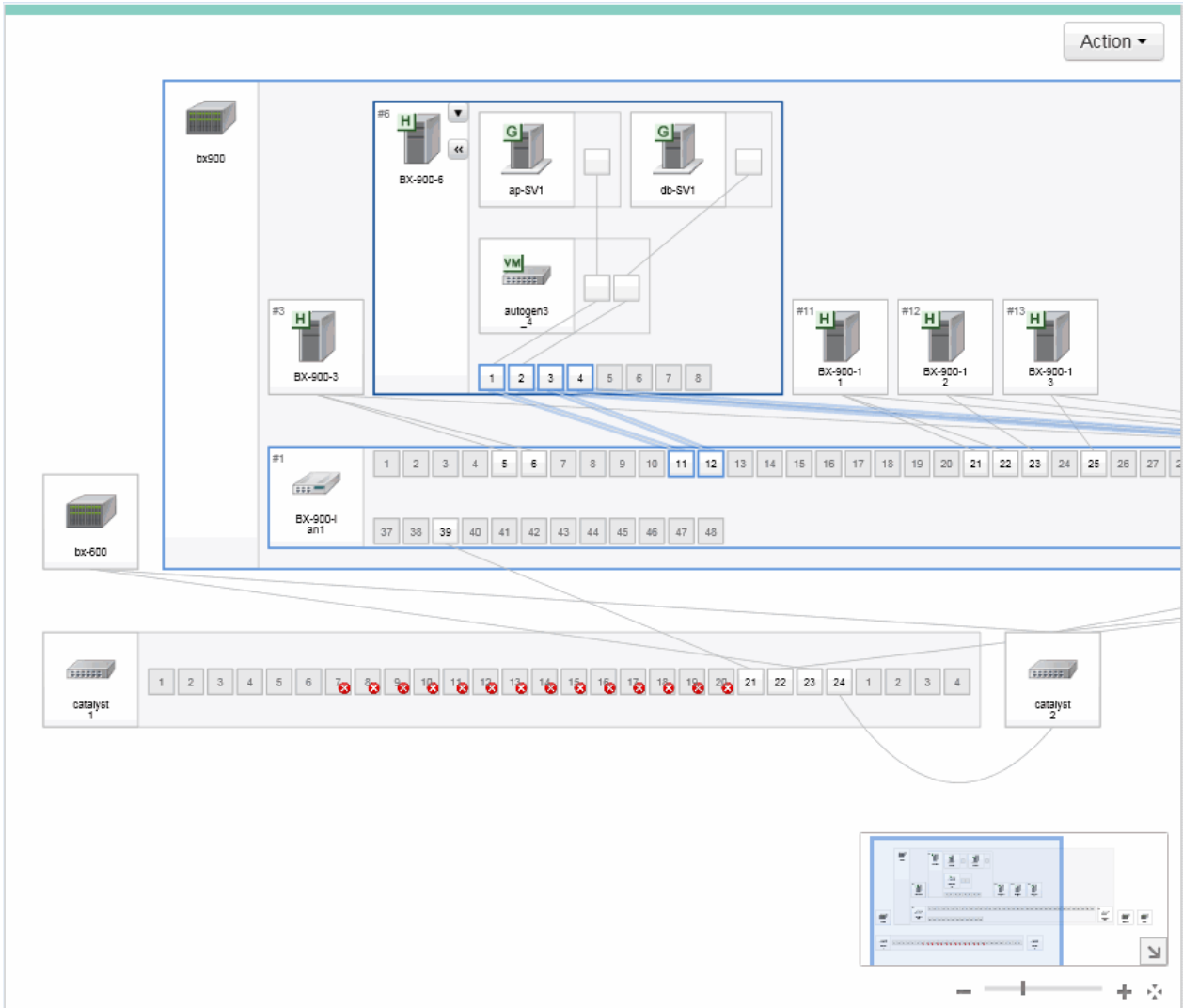
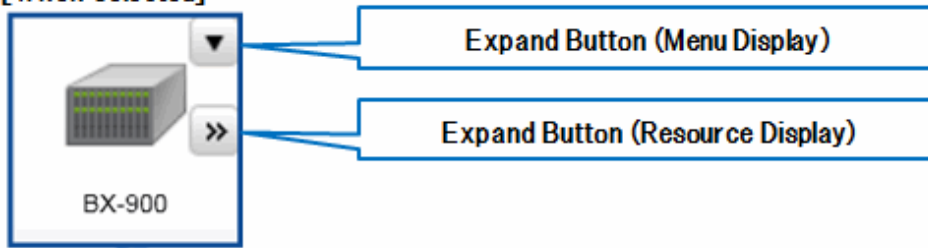
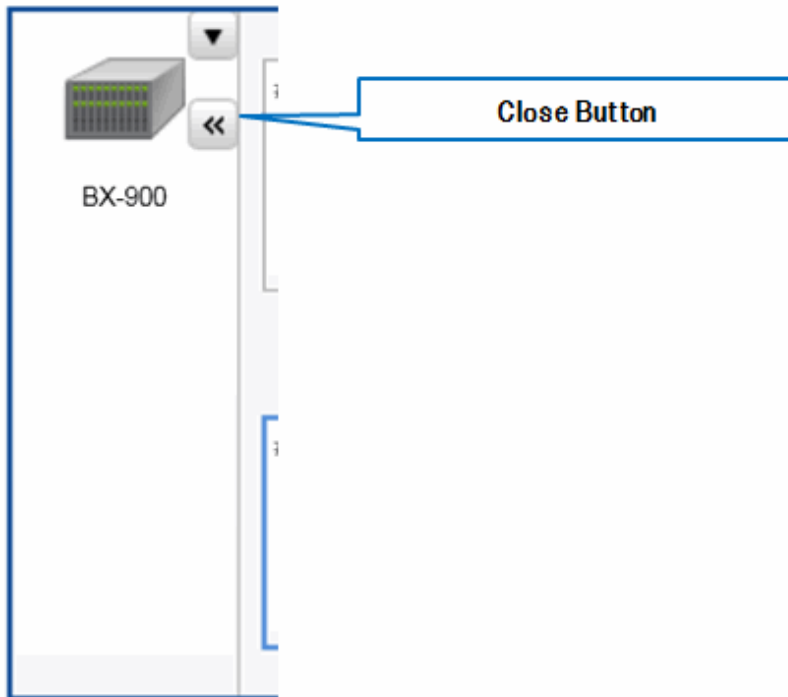


Figure 13.7 Display Example of Resources

[When Selected]



[After Expansion]



[Expand] Button

When the following is selected, the button is displayed on the upper right and to the right of the icon.
When the upper right button ("▼") is clicked, or the icon is right-clicked, the menu is displayed.
When the button on the middle right (">>") is clicked, the content of the resource is expanded.

- Chassis
- Rack mount servers
- Server blades
- LAN switch blades
- VM hosts
- VM guests
- Virtual Switches
- L2 Switches
- Management Hosts (IPCOM VX)
- SLB
- Firewalls

- Integrated network devices
- Ethernet Fabric devices
- Ports in Ethernet Fabric devices

[Close] Button

When the button on the middle right ("<<") displayed in the icon of the expanded resource is clicked, the expander of each resource is closed.

13.2.3 Network View (Physical List)

This section describes the information that is displayed in a physical map of the network view.

Figure 13.8 Display Example of Network View (Physical List)

The screenshot displays a network management interface with a summary bar and a table of resources. The summary bar shows: Total: 75 Units, Error: 0 Units, Warning: 0 Units, Stop: 18 Units. The table has columns for Name, IP Address, Status, Unit 1, Unit 2, and Type. Callouts highlight the 'Resource Number' (Total: 75 Units), the 'Reset to Default Button' (Action dropdown), and the 'Resource descriptions' (table content).

Name	IP Address	Status	Unit 1	Unit 2	Type
BX-900	192.168.3.165	normal	BX-900	-	Chassis (Blade)
BX-900-2	192.168.3.80	normal	BX-900-2	-	Chassis (Blade)
bx-600	192.168.3.120	normal	bx-600	-	Chassis (Blade)
CFX-2000	192.168.10.90	normal	-	-	Fabric
catalyst1	192.168.10.62	normal	-	-	L2-Switch
catalyst2	192.168.10.63	normal	-	-	L2-Switch
sr-x_1	192.168.10.84	normal	-	-	L2-Switch
sr-x_2	192.168.10.85	normal	-	-	L2-Switch
IPCOM-VX2700_1	192.168.10.108	normal	IPCOM-VX2700_1	-	Management Host
IPCOM-VX2700_2	192.168.10.109	normal	IPCOM-VX2700_2	-	Management Host
asa5520_1	192.168.10.82	normal	-	-	Firewall
asa5520_2	192.168.10.83	normal	-	-	Firewall
big-ip_3600_1	192.168.10.80	normal	-	-	SLB
big-ip_3600_2	192.168.10.81	normal	-	-	SLB
ipcom-EX1	192.168.10.60	normal	-	-	Multi
ipcom-EX2	192.168.10.61	normal	-	-	Multi
BX-900-11	192.168.3.176	normal	BX-900	BX-900-11	Server (Blade)
BX-900-12	192.168.3.177	normal	BX-900	BX-900-12	Server (Blade)
BX-900-13	192.168.3.178	normal	BX-900	BX-900-13	Server (Blade)
BX-900-2-1	192.168.3.81	normal	BX-900-2	BX-900-2-1	Server (Blade)
BX-900-2-2	192.168.3.82	normal	BX-900-2	BX-900-2-2	Server (Blade)
BX-900-2-3	192.168.3.83	normal	BX-900-2	BX-900-2-3	Server (Blade)
BX-900-2-4	192.168.3.84	normal	BX-900-2	BX-900-2-4	Server (Blade)

Resource Number

Displays the total number of resources displayed in a physical list as well as the number of each status (Error/Warning/Stop).

Resource Descriptions

Displays the resource information in a table format.
 An explanation of the items in the displayed table is given below.

Table 13.1 Items Displayed in the Network View (Physical List)

Display Item	Description	Example
Name	The name of the resource is displayed.	bx600-1
IP address	The admin LAN IP address of the resource is displayed. When the resource does not have an admin LAN IP address, "-" is displayed.	192.168.3.121
Device status	The status of the resource is displayed.	normal
Unit1 (*1)	The name of the unit in which the resource is stored is displayed. When the resource is a standalone physical device, "-" is displayed.	bx600
Unit 2 (*1)	The name of the unit in which the resource is stored is displayed. Displayed for indicating the chassis that exists in [Unit1]. When the resource is a standalone physical device or when the resource is stored in [Unit1], "-" is displayed.	bx600-1
Category	<p>One of the following is displayed as the resource type:</p> <ul style="list-style-type: none"> - For chassis Chassis (Blade) - For blade servers Server (Blade) - For LAN switch blades L2-Switch (Blade) - For VM guests VM Guest - For virtual switches VM Switch - For rack mount servers Server (Rack) - For chassis (PRIMEQUEST) Chassis (Partition) - For servers (PRIMEQUEST) Server (Partition) - For L2 switches L2-Switch - For firewalls Firewall - For SLBs SLB - For integrated network devices Multi - For Ethernet fabric devices Fabric - For management hosts (IPCOM VX) Management Host - For firewalls (virtual appliances) Firewall (Virtual) - For server load balancers (virtual appliances) SLB (Virtual) 	Server (Blade)

Display Item	Description	Example
	- For integrated network devices (virtual appliances) Multi(Virtual)	

*1: For the resources that form a three-tier system (Unit1->Unit2->Resource), corresponding resource name is displayed in the "Name", "Unit1", and "Unit2" fields. For the resources that form a two-tier system (Unit1->Resource), corresponding name is displayed in the "Name" and "Unit1" fields and "-" is displayed in the "Unit2" field.

Example

- When displaying a VM guest (in a three-tier system)
The VM guest name, chassis name, and the VM host name are displayed in the "Name", "Unit1", and "Unit2" fields, respectively.
- When displaying a blade server (in a two-tier system)
The blade server name, the chassis name, and "-" are displayed in the "Name", "Unit1", and "Unit2" fields, respectively.

Information

Clicking a column label in the physical list will sort the displayed resources in ascending or descending order.

However, the lines of the resources for which "-" is displayed under the clicked column label are always displayed in the lower part of the list.

[Reset to Default] Button

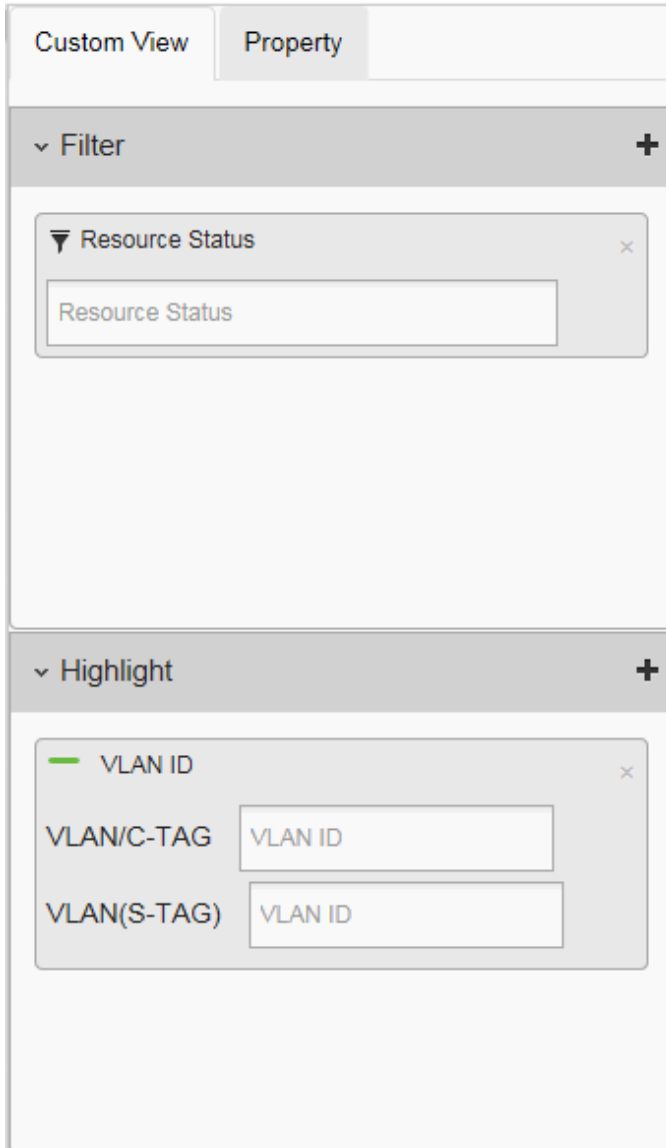
Returns the displayed physical list to its initial state.

13.2.4 Utility Panel (Custom View)

This section explains the custom view of the utility panel.

Initially two boxes are displayed: Filter and Highlight.

Figure 13.9 Display Example of Utility Panel (Custom View)



Filter

Only the resources that meet the specified conditions can be displayed.

Highlight

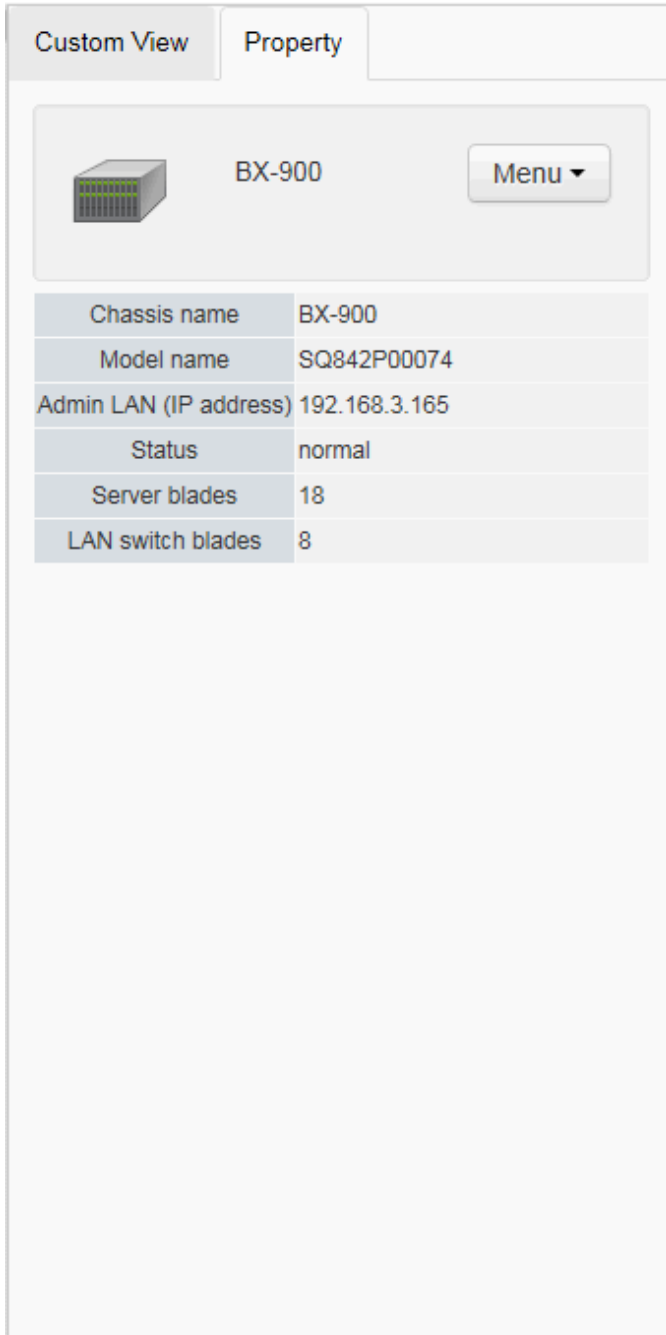
Only the resources that meet the specified conditions can be highlighted.

13.2.5 Utility Panel (Property)

This section explains the properties of the utility panel.

When the resources displayed in the network view are clicked, the detailed information of those resources is displayed.

Figure 13.10 Display Example of Utility Panel (Property)



Menu

An operation menu for resources with the detailed information displayed.

Open/Close Configuration

When the resource is closed, the content of the resource is expanded.

When the resource is expanded, the resource is closed.

Route from here

Represents a resource as the starting point of a point-to-point route search.

Route to here

Represents a resource as the end point of a point-to-point route search.

Route Search

Searches the route between two points from the starting point to the end point.

The information of the following resources is displayed.

- Chassis
- Servers
- LAN switch blades
- VM hosts
- VM guests
- L2 switches
- Management hosts (IPCOM VX)
- Firewalls
- SLB
- Ethernet Fabric devices
- Ports of network devices
- Ports of LAN switch blades
- L2 switch ports
- Server NICs (including VM Hosts)
- Integrated network devices

Depending on the selected resources, it is possible to search the following:

- When a LAN switch blade in IBP mode is selected
Port Groups
- When an Ethernet fabric switch (Converged Fabric) is selected
Virtual Fabrics

13.2.6 Analysis Mode

This section explains Analysis Mode.

Analysis Mode is the function for performing offline analysis and forecasting of the scope affected by the failure of a particular device by using influence scope data collected in advance.

The scope of display is limited to network paths between connected physical devices. This function does not display VM guests and other virtual appliances.

The GUI is based on NetworkViewer.

Figure 13.11 Display Example of Network View (Physical Map) in Analysis Mode

The screenshot shows the NetworkViewer application in Analysis Mode. The top status bar indicates the current mode and a timestamp: "Analysis Mode 2016/09/02 11:49:21 - save1-1". Below this, there are window control icons and a search bar for "Resource name".

The main network map displays a complex physical topology. Key components include:

- Top Section:** A group of servers labeled "bx900" and "bx900b" connected to a switch "bx900a".
- Middle Section:** Core network devices including "CFX-2000", "Catalyst 1", "Catalyst 2", "sr-x_1", and "sr-x_2".
- Bottom Section:** A row of firewalls and edge devices: "IPCOM-VX 2700_1", "IPCOM-VX 2700_2", "NSApppliance", "asa5520_1", "asa5520_2", "big-ip_3 600_1", "big-ip_3 600_2", "ipcom-EX 1", and "ipcom-E 2".

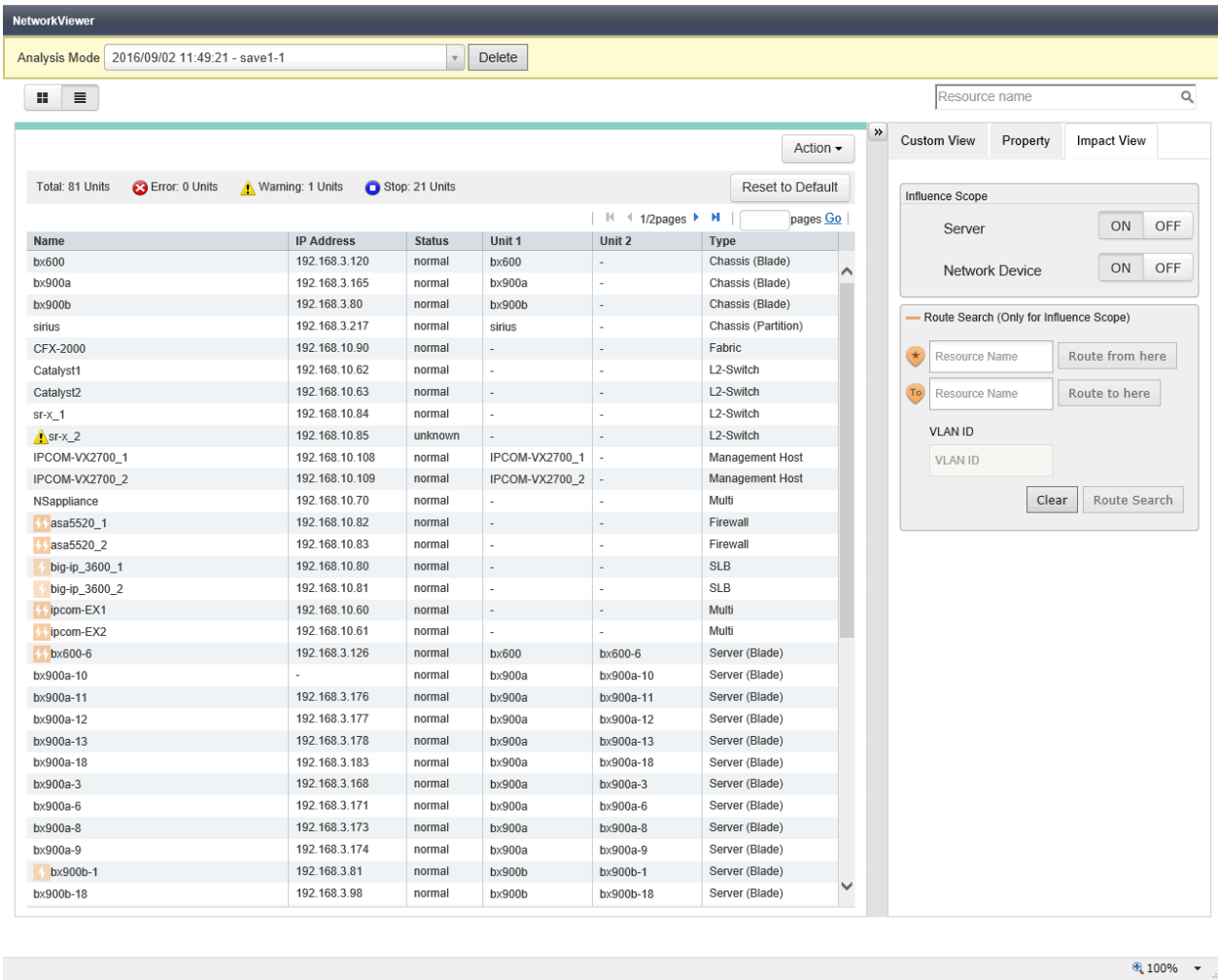
 Red lines highlight specific connections between the core switches and the edge devices.

On the right side, a sidebar provides configuration options:

- Custom View / Property / Impact View:** Tabbed interface.
- Influence Scope:**
 - Server: ON OFF
 - Network Device: ON OFF
- Route Search (Only for Influence Scope):**
 - From: Resource Name
 - To: Resource Name
 - VLAN ID: VLAN ID
 -

At the bottom right, there is a zoom control showing "100%" and a small inset window showing a detailed view of a device's configuration or status.

Figure 13.12 Display Example of Network View (Physical List) in Analysis Mode






13.2.7 Resource Icons

This section describes the icons used to represent resource statuses on NetworkViewer.

13.2.7.1 Resource Display

The following table details the resource statuses associated with each icon.

Table 13.2 Resource Icons

Icon	Meaning
	Chassis
	Server
	LAN switch blade















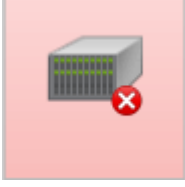

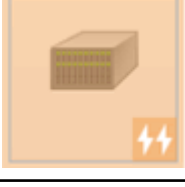
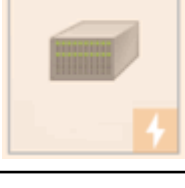
Icon	Meaning
	LAN switch blade in IBP mode
	LAN switch blade in VCS mode
	LAN switch blade in Converged Fabric mode
	VM host
	VM guest
	Virtual switch
	L2 switch
	Management host (IPCOM VX)
	SLB (Server Load Balancer)
	Firewall
	Integrated network device
	Ethernet fabric device

Table 13.3 Resource Status Icons

Icon	Status	Meaning
	normal	No new errors, warnings, or stops were detected.

Icon	Status	Meaning
	warning	A warning was detected.
	unknown	The status could not be obtained.
	error	An error was detected.
	fatal	A fatal error was detected, the resource is now unusable.
	stop	The resource was detected to have been powered off.
	affected	Operation is affected due to trouble involving other resources. All routes to and from particular resources are blocked and some services may be unavailable. This icon is only displayed in Analysis Mode.
	affected	Operation is affected due to trouble involving other resources. The routes to and from particular resources are partially blocked but services are still available. This icon is only displayed in Analysis Mode.

Point

- For virtual switches, the status of the VM host to which they belong is displayed.

Table 13.4 Point-to-Point Route Search Icon



Icon	Meaning
	Represents the resource as the starting point of a route search.
	Represents the resource as the end point of a route search.

Table 13.5 Port Icons






Icon	Meaning
	Connected port
	Not connected port

Table 13.6 Port Status Icons

Icon	Status	Meaning
	normal	No ports with "error" or "disabled" status were detected. The state of the port is always displayed as normal status for LAN switch blades that operate in Converged Fabric mode or LAN switch blade PY CB 10Gb FEX Nexus B22.
	error	An error was detected from the port (e.g. the opposite port of the NIC, LAN switch, or Ethernet Fabric was disabled, or the cable between this link and its opposite port or NIC was disconnected). When ports of a network device other than a LAN switch blade are disabled, the state of the port is displayed as error.
	disabled	The port was detected to have been disabled (offline).

 **Point**


For the ports of the following resources, the status of the resource to which they belong is displayed.

- Servers
- VM guests
- Virtual switches

13.2.7.2 Other Icons

The following tables detail the icons displayed in the NetworkViewer.

Table 13.7 Admin Server Icon

Icon	Status	Meaning
	Admin server	Indicates the server used as the admin server.

13.2.8 Network Links






This section explains the network links displayed in the NetworkViewer.

13.2.8.1 Link Display (Physical Map)

The following table details the physical and virtual links displayed between resources.

The color of links changes depending on resource status, VLAN search status, and the selection state of resources.

Table 13.8 Links related to Unselected Resources

Status	Default/VLAN	Link	Meaning
normal	Default		Represents a physical or virtual link.
	Selecting VLAN		
error	Default		Represents a link with an error status (e.g. an error occurred in the LAN switch blade or LAN switch port, or the cable between this link and its opposite port or NIC is disconnected).
	Selecting VLAN		
warning	Default		When error status is found in some links among multiple links connecting resources, the warning status is shown.











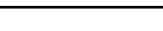
Status	Default/VLAN	Link	Meaning
	Selecting VLAN		
disabled	Default		Represents a disabled port.
	Selecting VLAN		

Table 13.9 Links related to the Selected Resource

Status	Default/VLAN	Link	Meaning
normal	Default		Represents a physical or virtual link.
	Selecting VLAN		
error	Default		Represents a link with an error status (e.g. an error occurred in the LAN switch blade or LAN switch port, or the cable between this link and its opposite port or NIC is disconnected).
	Selecting VLAN		
warning	Default		When error status is found in some links among multiple links connecting resources, the warning status is shown.
	Selecting VLAN		
disabled	Default		Represents a disabled port.
	Selecting VLAN		

13.3 Operations

This section explains operation of NetworkViewer.

13.3.1 Starting NetworkViewer

The procedure to start the NetworkViewer is as given below.

1. Start the ROR console.
2. Click the [NetworkViewer] button displayed in the upper right of the [Resource] tab of the ROR console. NetworkViewer is displayed in another window.
When starting the network view, the physical map is displayed in the network view.

Initially the physical map displays the following resources and the connections between them:

- Chassis
- Servers
- L2 switches
- Network devices

13.3.2 Display Switchover of Network View (Map View and List View)

The network view can be switched by clicking the [Map] button or the [List] button in the NetworkViewer tool bar.

- When switching from the map view to the list view.
Click the [List] button.

- When switching from the list view to the map view

Click the [Map] button.

When starting NetworkViewer, the physical map is displayed in the network view.

13.3.3 Resource Search

Resources can be searched using the [Resource Search] box in the NetworkViewer tool bar.

Point

Resource search enables you to easily check the resources related to specific resources or the network configurations centering on specific resources.

The procedures to search resources are as given below.

- When the user knows the resource name to search for
 1. Enter the target resource name in the [Resource Search] box.
 2. Clicking the [Enter] key displays the network view with the target resource located in the center of the window.
The resource to search is displayed with the search target icon.
- When the user does not know the resource name to search for
 1. Entering characters in the [Resource Search] box displays a list of the resources managed by Resource Orchestrator that have names partially matching the entered characters.
 2. Select the target resource name from the displayed list.
The network view is displayed with the selected resource in the center of the window.
The resource to search is displayed with the search target icon.

Figure 13.13 Example of a Search Resources Partially Matched Operation

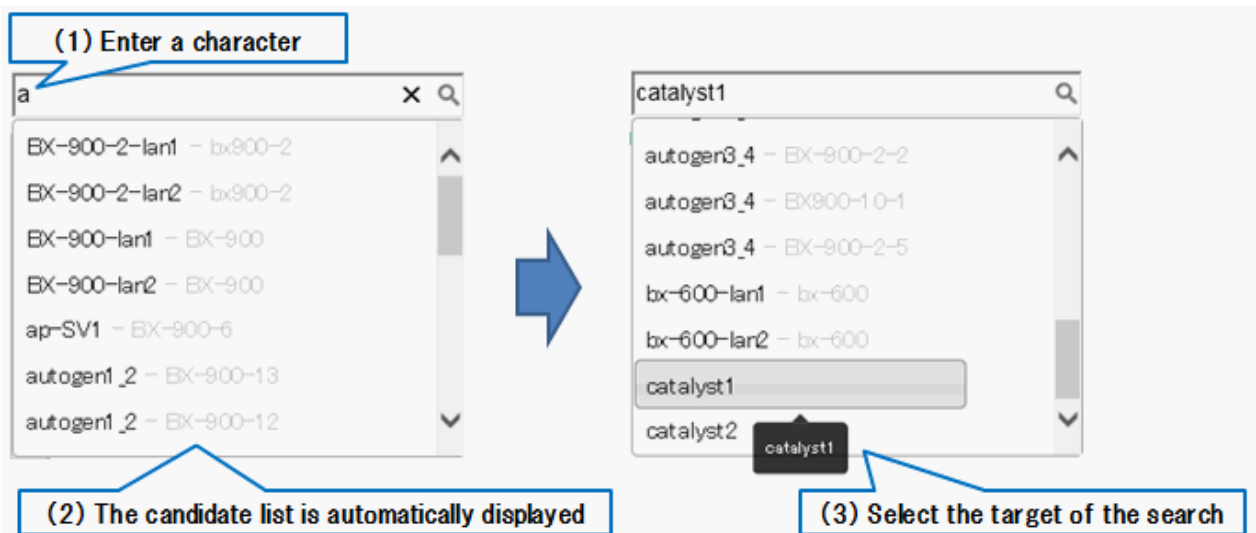
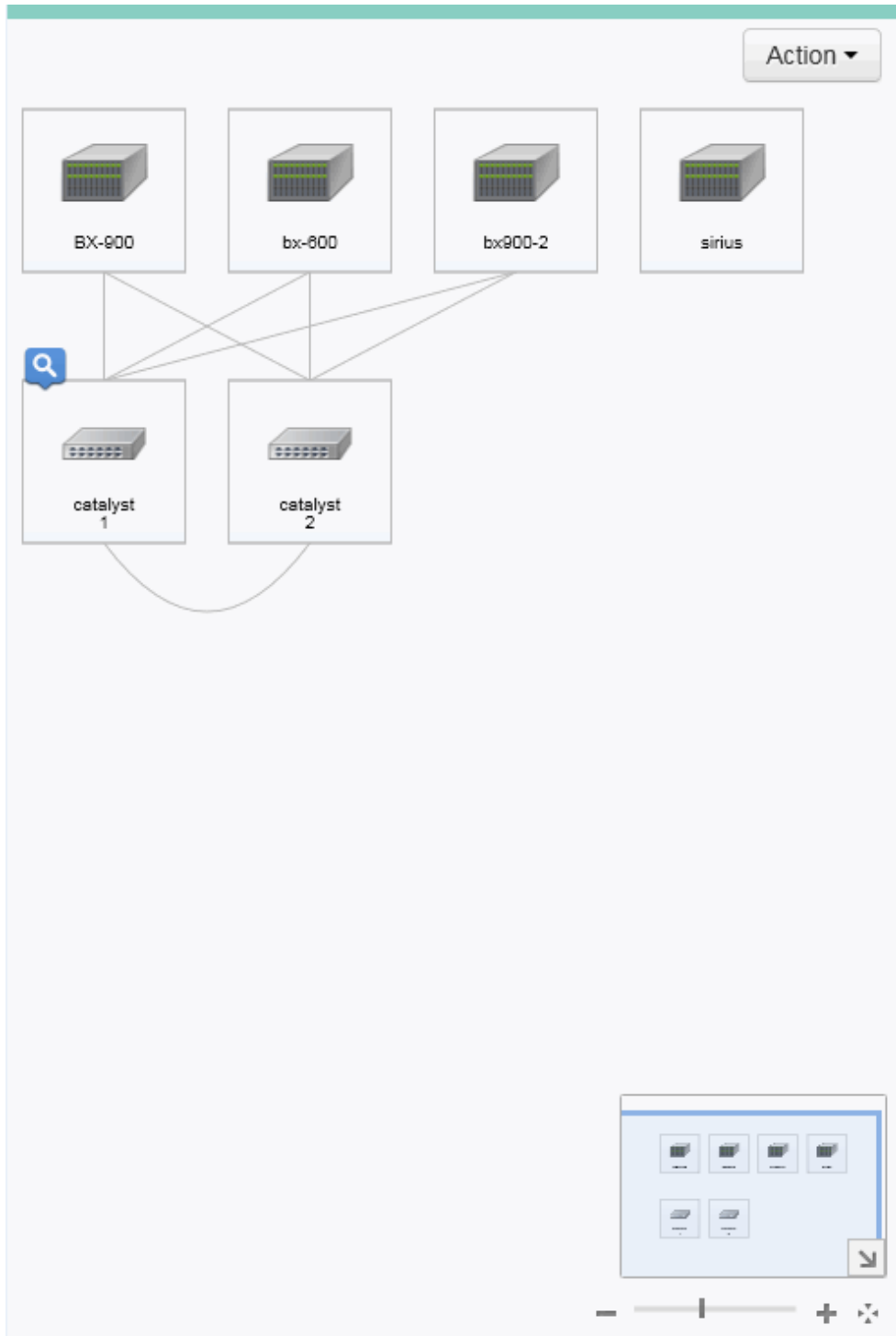


Figure 13.14 Example of Network View Display after Resource Search



13.3.4 Filtering Resources to Display

Filtering of the utility panel (custom view) of the NetworkViewer enables display of only the resources that meet the specified conditions.

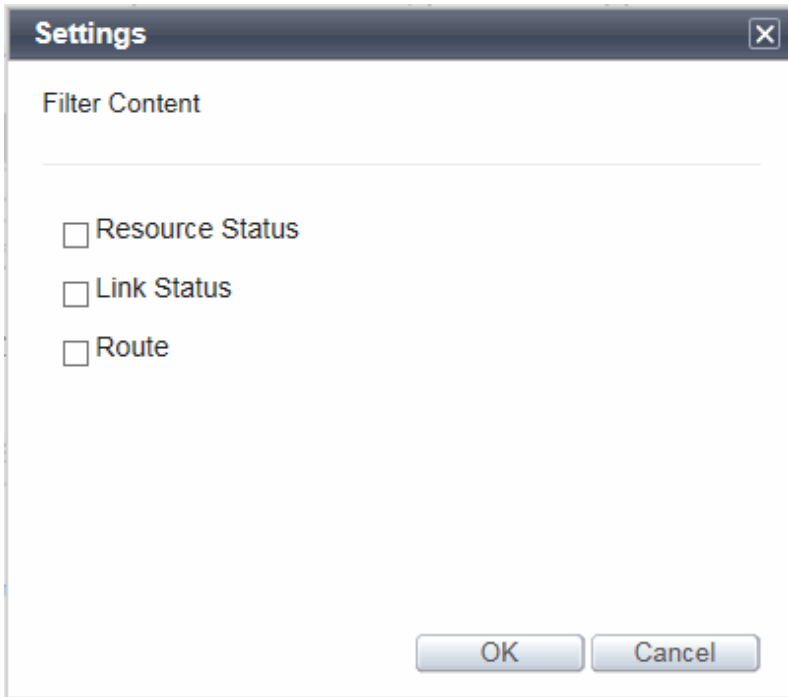
Point

Even if there are a large number of managed resources, the time to check during operations can be shortened, as the resources to display can be filtered.

The procedure to filter displayed resources is given below.

1. The settings window is displayed by clicking the [+] button in the upper right of the label in the filter box.

Figure 13.15 Filter Settings Window



2. Check the items to configure as the filtering conditions.
3. Click the [OK] button.
4. The input field for the item for filtering checked in the filter box in step 2 is displayed.
5. Clicking the input field displays a pull-down list.
Select a filtering condition from the pull-down list to display only the resources that meet that condition.

Resources can be filtered using the following conditions:

- Resource Status
Only the resources that match the specified resource status are displayed.
- Link Status
Only the links that match the specified link status are displayed.
- Route Search
Enables you to search for routes between two resources.
For details, refer to "[13.3.7 Point-to-Point Route Search](#)".



Information

- When multiple conditions are specified in the item for filtering, resources meeting any of the conditions are displayed.
- When multiple items for filtering are checked, the resources meeting all conditions of items for filtering are displayed.
- For resources with parent-child relationships, when the child resource meets the conditions, the parent resource is displayed regardless of the conditions.



Example

Example of resource statuses

- When the status of the VM host is "normal"
- When the status of the VM guest is "error"

In the above status, when "error" is configured as one of conditions for the resource status, both the VM guest and the VM host are displayed.

13.3.5 Highlight Display of Resources

Using highlighting from the utility panel (custom view) in the NetworkViewer enables highlighting of only the resources that meet the specified conditions.

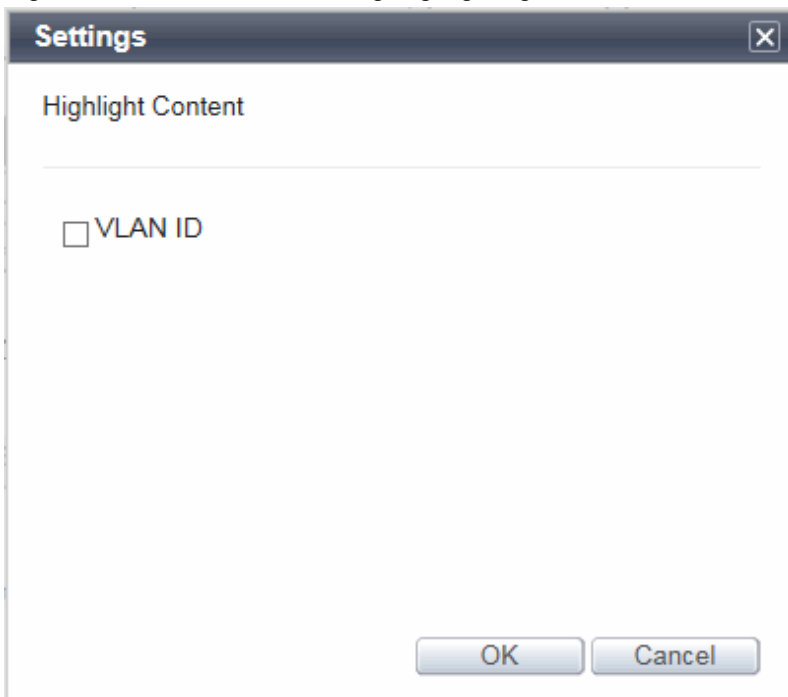
Point

In a complicated network configuration, since the related routes can be visibly checked by highlighting, the time taken for check operations can be shortened.

The procedure to highlight resources is given below.

1. Clicking [+] in the upper right of the highlight box displays the configuration window.

Figure 13.16 Window for Setting Highlighting



2. Check the items to configure as the conditions for highlighting.
3. Click the [OK] button.
4. The input field for the item to highlight checked in step 2 in the highlight box is displayed.
5. Clicking the input field displays a pull-down list.
Select a condition from the pull-down list to highlight only the resources that meet that condition.

The following conditions can be specified for highlighting certain resources:

- VLAN ID
Only highlights the resources that match the specified VLAN ID.

- For Ethernet Fabric devices (Converged Fabric)

Conditions for both "VLAN/C-TAG" and "VLAN(S-TAG)" can be configured in the VLAN ID input field. When both conditions are configured, resources meeting both conditions are the targets of display.

- For devices other than Ethernet Fabric devices (Converged Fabric)

Only the condition "VLAN/C-TAG" in the VLAN ID input field has a meaning.

Even if the condition "VLAN(S-TAG)" is configured, it is ignored, and resources meeting the conditions of "VLAN/C-TAG" are displayed.

The icons displayed when a VLAN is displayed are those from "13.2.7.1 Resource Display" enclosed with a green frame.

If a problem occurs on a resource, a status icon indicating the problem is shown on top of the resource's own icon.

For details on status icons, refer to "13.2.7.1 Resource Display".

13.3.6 Network View Information Output during Display

The information displayed in the network view in the NetworkViewer can be output as a CSV file.



Point

The current resource list and the latest link information can be easily checked.

The procedure for outputting the view information is as given below.

1. Click the [Action] button in the network view.
A list of actions is displayed.
2. Select "Export View Information" from the list of actions.
The current network view information can be output in CSV format.

The CSV file is output in the following format.

- When the physical map or the physical list is displayed

```
[Node]
resource_name,resource_ip,resource_status,unit1,unit2,type
:
[Link]
resource_name_1,resource_ip_1,port_name_1,port_status_1,resource_name2,resource_ip_2,port_name_2,
port_status_2
:
```

Table 13.10 Column List of the Node Area

Column	Description	Output Example
resource_name	The name of the resource is output.	vm_guest_1
resource_ip	The admin LAN IP address of the resource is output. When the resource does not have an admin LAN IP address, "-" is output.	192.168.10.60
resource_status	The status of the resource is output.	normal
unit1	The name of the chassis in which the resource is stored is output. When the resource is a standalone physical device, "-" is output.	chassis_1
unit2	The name of the chassis in which the resource is stored is output. Output for indicating the chassis that exists in [unit1]. When the resource is a standalone physical device or when the resource is stored in [unit1], "-" is output.	vm_host_1
type	The type of the resource is output.	VM Guest

Column	Description	Output Example
	<ul style="list-style-type: none"> - For chassis Chassis (Blade) - For blade servers Server (Blade) - For LAN switch blades L2-Switch (Blade) - For VM guests VM Guest - For virtual switches VM Switch - For rack mount servers Server (Rack) - For chassis (PRIMEQUEST) Chassis (Partition) - For servers (PRIMEQUEST) Server (Partition) - For L2 switches L2-Switch - For firewalls Firewall - For SLBs SLB - For integrated network devices Multi - For Ethernet Fabric devices Fabric - For management hosts (IPCOM VX) Management Host - For firewalls (virtual appliances) Firewall (Virtual) - For server load balancers (virtual appliances) SLB (Virtual) - For integrated network devices (virtual appliances) Multi(Virtual) 	

 **Information**

- When the list is sorted by specific items, the resources are output in the [Node] area in the CSV file in the sorted order.
- When filtering resources, only the filtered information is output.

Table 13.11 Column List of the Link Area

	Column	Description	Output Example
Link connection source port information	resource_name_1	The name of the connection source resource is output.	catalyst_1

	Column	Description	Output Example
	resource_ip_1	The IP address of the connection source resource is output. When the resource does not have an IP address, "-" is displayed.	192.168.10.62
	port_name_1	The name of the port of the connection source resource is output.	Gi1/0/4
	port_status_1	The status of the port of the connection source resource is output.	normal
Link connection target port information	resource_name_2	The name of the connection target resource is output.	srx_1
	resource_ip_2	The IP address of the connection target resource is output. When the resource does not have an IP address, "-" is displayed.	192.168.10.63
	port_name_2	The name of the port of the connection target resource is output.	4
	port_status_2	The status of the port of the connection target resource is output.	normal

Information

This is output in random order.

When the resources are filtered, the link information for which both connection source and target resources are displayed is output in the [Link] area.

13.3.7 Point-to-Point Route Search

Selecting two resources displayed in the network view displays a route with which point-to-point communication is possible.

Information

When there are multiple links in the selected resource, the resource and links other than the route of the point-to-point might be displayed.

The following resources can be selected by the point-to-point route search.

- Servers
- VM hosts
- VM guests
- Virtual switches
- LAN switch blades
- L2 switches
- Management hosts (IPCOM VX)
- Firewalls
- SLB
- Integrated network devices
- Ethernet Fabric devices

The procedure to display the point-to-point route is as given below.

Operation Procedure Using the Network View Icon

1. Click the expansion button ("▼") of the resource that is the starting point of the search.
2. Select "Route from here" from the popup menu.
Check if the "physical-logical relationship search icon (starting point)" is assigned to the physical resource in the network view.
3. Click the expand button ("▼") of the resource that is the end point of the search.
4. Select "Route to here" from the popup menu.
Check if the "physical-logical relationship search icon (end point)" is assigned to the physical resource in the network view.
5. Click the expansion button ("▼") of the resource that is the starting point or end point of the search.
6. Select "Route Search" from the popup menu.
The search results are displayed in the network view.

Decision Procedure Using the Route Search of the Filter Box of the Utility Panel (Custom View)

1. Click [+] in the upper right of the filter box to display the window for setting filter options.
2. Check the route search checkbox and click [OK].
The route search input field is displayed.
3. Select the resource to be the starting point in the network view.
4. Click the [Route from here] button in the route search input field.
Check if the "physical-logical relationship search icon (starting point)" is assigned to the physical resource in the network view.
5. Click the resource which is the end point in the network view.
6. Click the [Route to here] button in the route search input field.
Check if the "physical-logical relationship search icon (end point)" is assigned to the physical resource in the network view.
7. Click the [Search] button in the route search input field.
The search results are displayed in the network view.

Decision Procedure Using the [Menu] Button of the Utility Panel (Property)

1. Select the resource to be the starting point in the network view.
2. Click the [Menu] button of the property.
3. Click "Route from here".
Check if the "physical-logical relationship search icon (starting point)" is assigned to the physical resource in the network view.
4. Click the resource which is the end point in the network view.
5. Click the [Menu] button of the property.
6. Click "Route to here".
Check if the "physical-logical relationship search icon (end point)" is assigned to the physical resource in the network view.
7. Click the [Menu] button of the property.
8. Click "Route Search".
The search results are displayed in the network view.

Note

- The display of resources included in the resource that has been selected cannot be closed while selecting the resources for the route search.
- The search results may differ, depending on whether the resource has been deployed.
Execute Route Search when you want to search for a correct route with a deployed resource.
- Network links not displayed in the network view cannot be searched.

13.3.8 Operation of Influence Scope Data

This section explains the operation of influence scope data.

13.3.8.1 Saving Influence Scope Data

Create and save influence scope data for use in Analysis Mode based on the configuration information and trouble information of current resources.

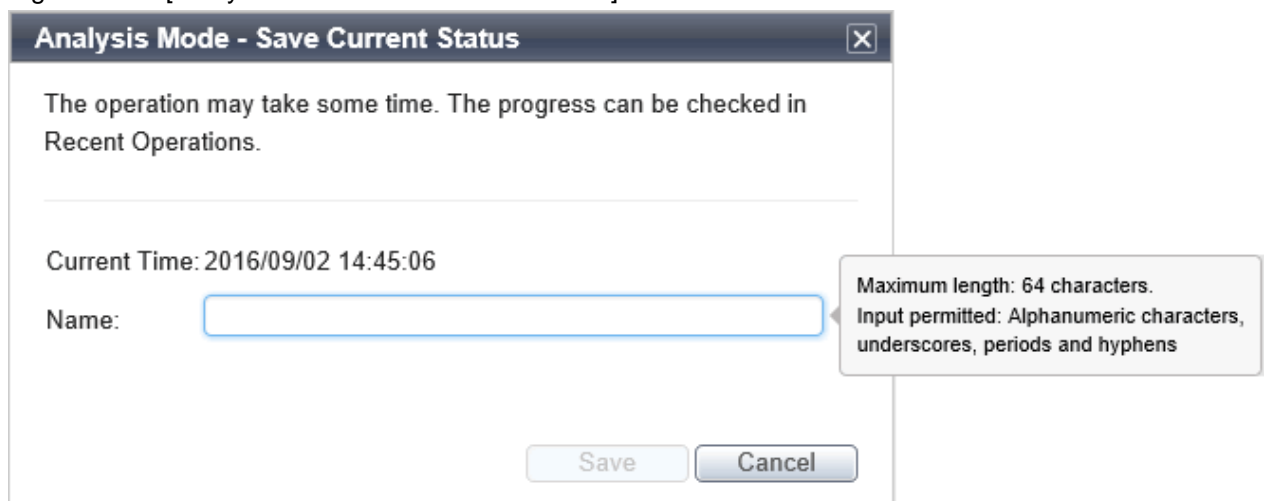
1. Click the [Action] button in the network view.

A list of actions is displayed.

2. Select [Analysis Mode]-[Save Current Status] from the list of actions.

The [Analysis Mode - Save Current Status] window is displayed.

Figure 13.17 [Analysis Mode - Save Current Status] Window



Current Time

The date and time on the server at the point when the [Analysis Mode - Save Current Status] window was started.

Name

Enter a name for the influence scope data.

Enter a string composed of up to 64 alphanumeric characters, underscores, (" _"), periods ("."), and hyphens, ("-").

3. Click the [Save] button.

The influence scope data is created and saved.

Example

An example, where the date and time is "2016/09/02 10:42:22" and the name used when saving is "testdata", is shown below.

```
Name of influence scope data:2016/09/02 10:42:22 - testdata
```

Point

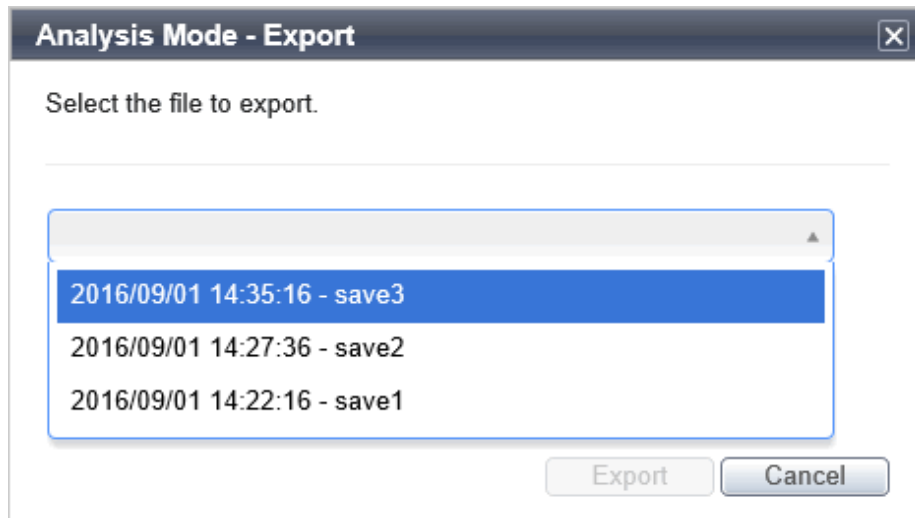
Up to a total of five sets of influence scope data, including data which has been imported, can be saved by each user.

13.3.8.2 Export

Influence scope data that has been saved can be exported.

1. Click the [Action] button in the network view.
A list of actions is displayed.
2. Select [Analysis Mode]-[Export] from the list of actions.
The [Analysis Mode - Export] window is displayed.

Figure 13.18 The [Analysis Mode - Export] Window



Clicking the pull-down displays the list of influence scope data saved by the logged-in user.

3. Select the influence scope data to export.
4. Click the [Export] button.
The explorer window for saving a file is displayed.
5. Select the desired location to save the file to.
The influence scope data is exported.

Information

Exported influence scope data also contains the influence scope data saved using the change resource status function. For the change resource status function, refer to "[13.3.9.4 Change Resource Status](#)".

13.3.8.3 Import

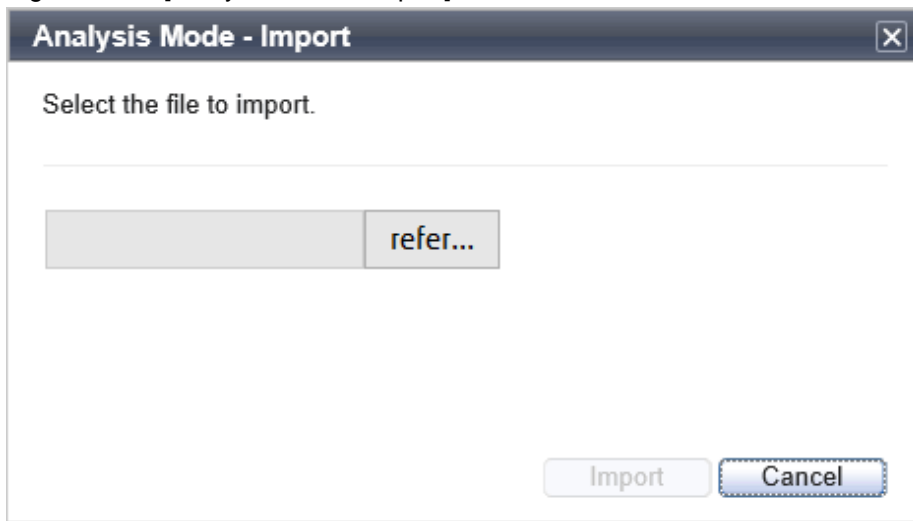
Influence scope data that has been exported can be imported.

1. Click the [Action] button in the network view.
A list of actions is displayed.

2. Select [Analysis Mode]-[Import] from the list of actions.

The [Analysis Mode - Import] window is displayed.

Figure 13.19 [Analysis Mode - Import] Window



3. Click the [Browse] button.

The explorer window for selecting a file is displayed.

4. Select the influence scope data to import.

5. Click the [Import] button.

The influence scope data is imported.



Up to a total of five sets of influence scope data, including data which has been saved, can be imported by each user.

13.3.9 Operation of the [Analysis Mode] Window

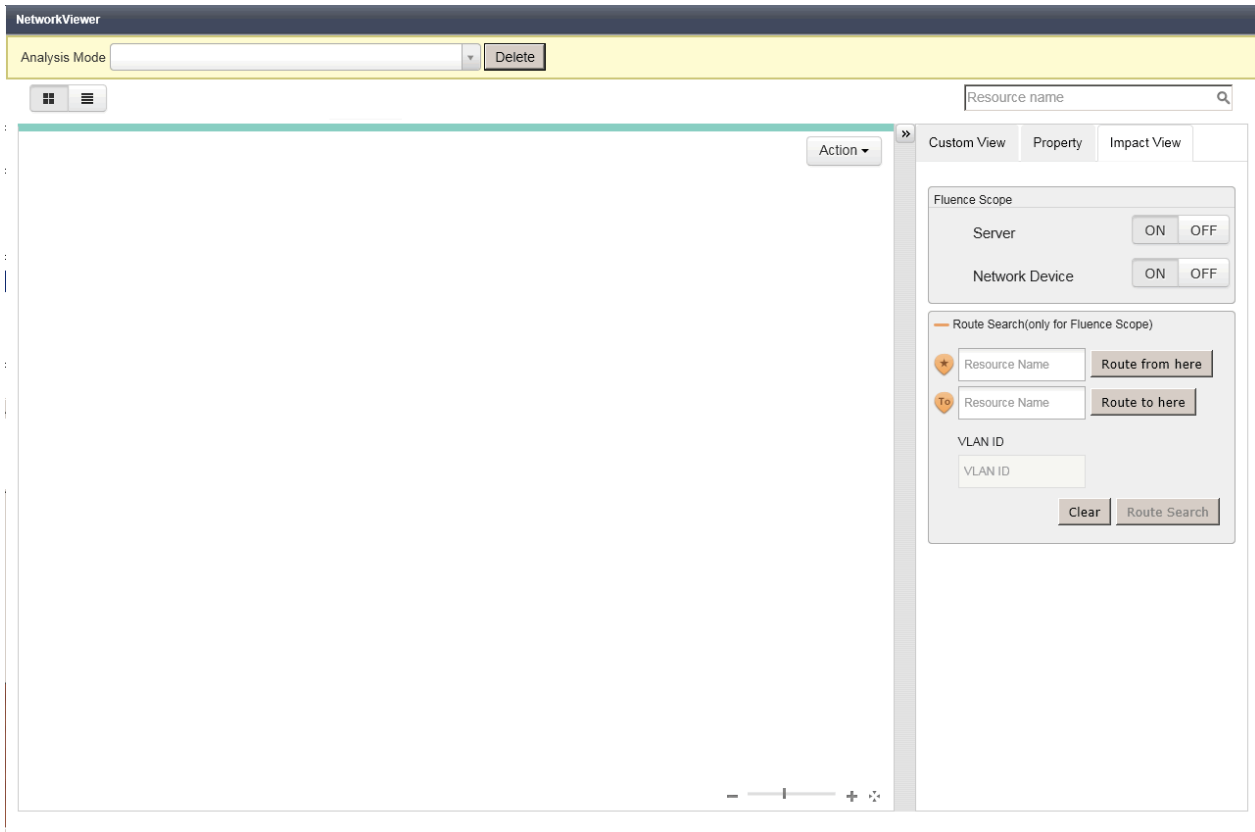
This section explains how to operate the [Analysis Mode] window.

13.3.9.1 Starting the [Analysis Mode] Window

The [Analysis Mode] window is displayed when one of the following operations is performed:

- The [Action] button in the network view is clicked. Then [Analysis Mode]-[Open] is selected from the list of actions.
- The [Analysis Mode] button on the Toolbar is clicked.

Figure 13.20 [Analysis Mode] Window



Information

When there is no influence scope data that has been saved, the [Analysis Mode] window is not displayed. Instead, the [Analysis Mode - Save Current Status] window is displayed.

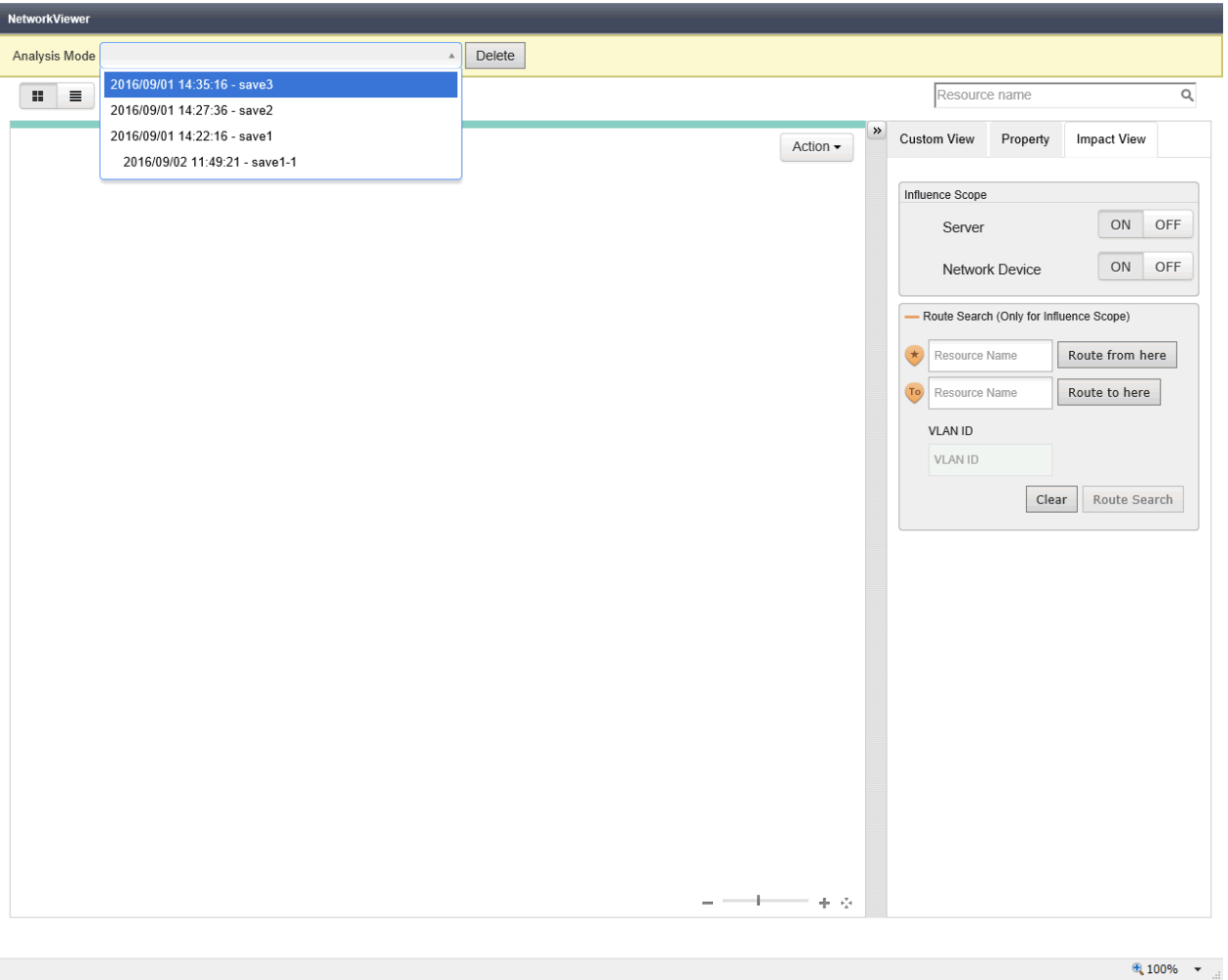
Save one or more sets of influence scope data, referring to "[13.3.8.1 Saving Influence Scope Data](#)".

13.3.9.2 Displaying Influence Scope Data

Use the following procedure to display influence scope data.

1. In the pull-down menu at top of the [Analysis Mode] window, the list of influence scope data saved by the logged-in user is displayed.

Figure 13.21 Influence Scope Data List



.....
Modified failure state data that was saved using the Change Resource Status function is displayed indented under the original influence scope data.

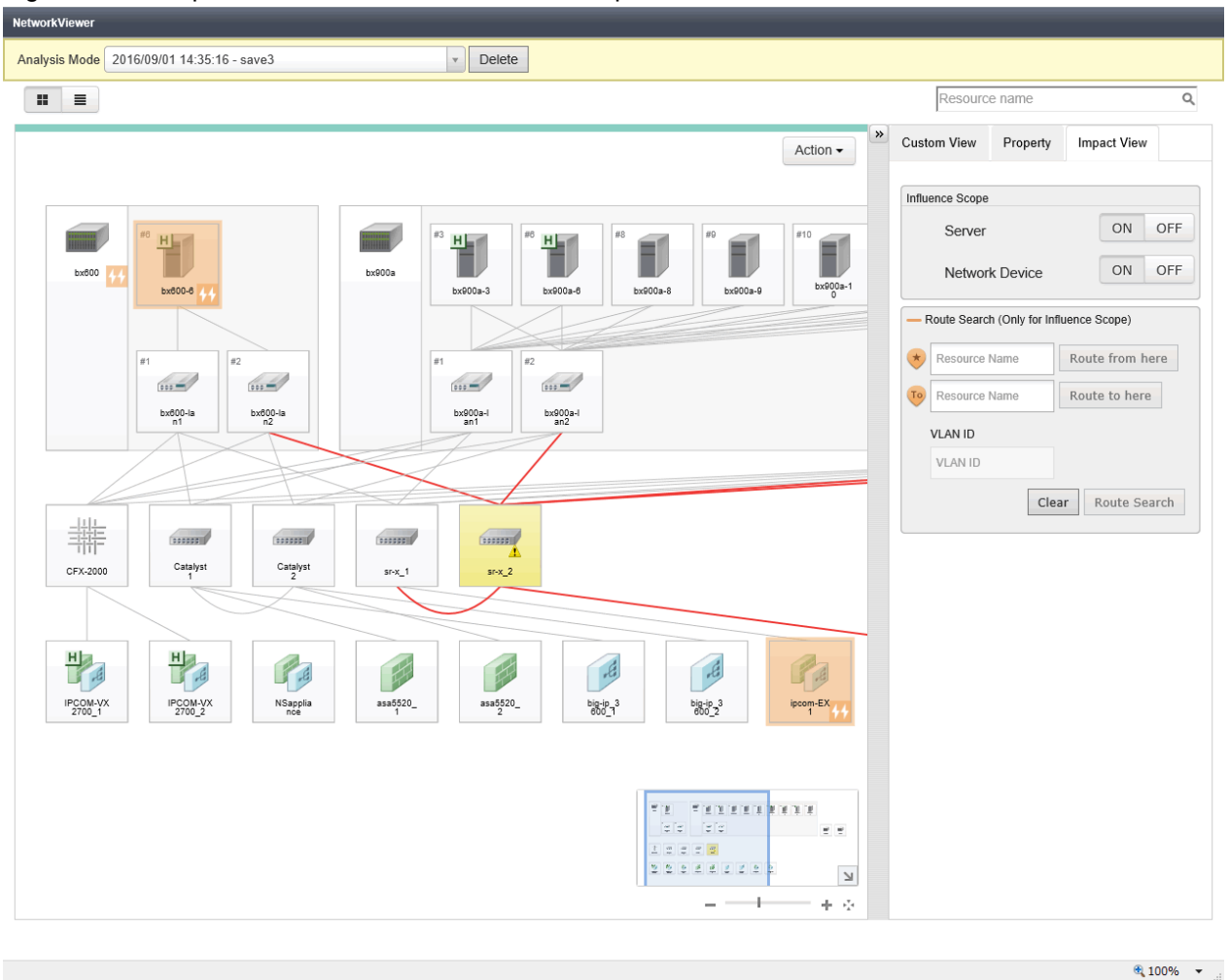
For the change resource status function, refer to "[13.3.9.4 Change Resource Status](#)".

.....

2. Select influence scope data from the pull-down list.

A map view of the influence scope data is displayed in the network view.

Figure 13.22 Map View of the Selected Influence Scope Data

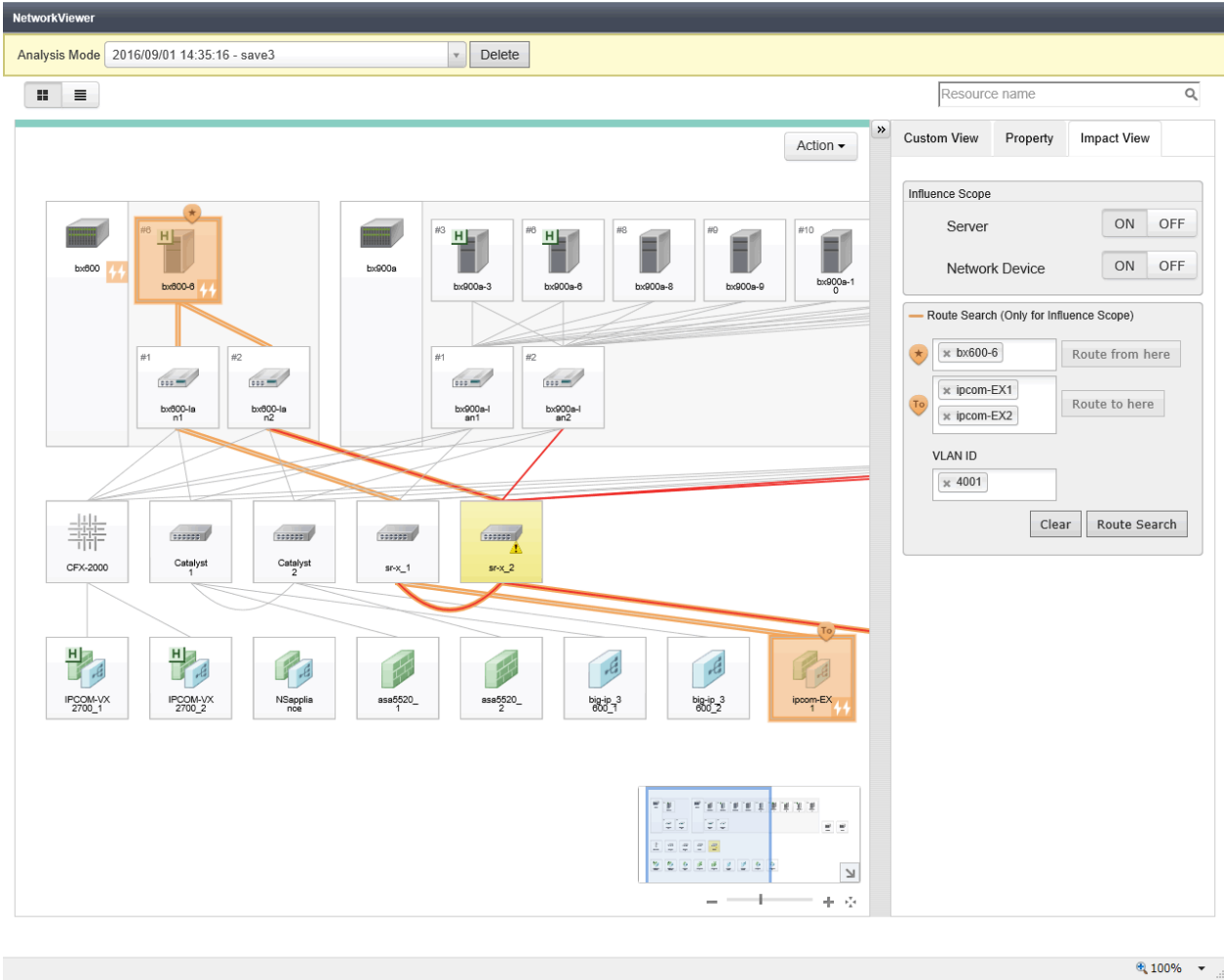


13.3.9.3 Utility Panel (Impact View)

This section explains the Impact View of the utility panel.

This view provides two boxes: [Influence Scope] and [Route Search (Only for Influence Scope)].

Figure 13.23 Display of Routes in the Influence Scope



Influence Scope

Items to display in the influence scope can be selected from the following:

- Servers
- Network devices

By default both servers and network devices are "ON".

Route Search (Only for Influence Scope)



This function displays (in orange) the routes included in the scope affected by the device failure among the routes displayed in the network view.

The following resources can be set for the start and end points of routes.

- Servers
- VM hosts
- Firewalls (*)
- SLBs (*)
- Integrated network devices (*)



* Note: Can be selected when performing "7.5.1 Enabling the Network Device Management Function".

Point

Only one resource can be selected for the start point () , while multiple resources can be selected for the end point ().

Note

Select the resource to use as the start or end point of the route in advance, and display it in the network view.

If the resource that is to be the start or end point of the route is not displayed in the network view, the [] icon or the [] icon will not be displayed on the relevant resource.

In that case, clear the route of the influence scope. Then, with the resources that are to be the start and end points of the route displayed in the network view, set the start and end points of the route again.


The routes within the scope affected by the device failure can be displayed by performing the following procedure:

1. Select the resource to be the start point of the route.

When Selecting a Resource Icon in the Network View

- a. Select a resource icon displayed in the network view.
- b. Click [Route from here] in the [Route Search (Only for Influence Scope)] box.

When Selecting from the [Route Search (Only for Influence Scope)] Box

- a. Click the input box next to the [] icon in the [Route Search (Only for Influence Scope)] box.
- b. Select a resource from the list of candidates for the start point which is displayed in the pull-down.

The [] icon is appended to the resource icon selected as the start point.


In addition, a gray [To] icon is appended to the resource icons which are the candidates of the end point.

2. Select a resource for the end point of the route.

When Selecting a Resource Icon in the Network View

- a. Select a resource icon with the gray [To] icon which is displayed in the network view.
- b. Click [Route to here] in the [Route Search (Only for Influence Scope)] box.

When Selecting from the [Route Search (Only for Influence Scope)] Box

- a. Click the input box next to the [] icon in the [Route Search (Only for Influence Scope)] box.
- b. Select a resource from the list of candidates for the end point which is displayed in the pull-down.

The color of the [To] icon appended to the resource icon selected as the end point changes from gray to orange.

Point

When selecting multiple end points, repeat this procedure.

3. To display the affected scope for only a particular VLAN, specify the VLAN ID in [VLAN ID].

When no VLAN ID is specified, the affected scope for all VLANs is displayed.

4. Click [Route Search] in the [Route Search (Only for Influence Scope)] box.

The routes within the scope affected by the device failure are displayed in orange.

13.3.9.4 Change Resource Status

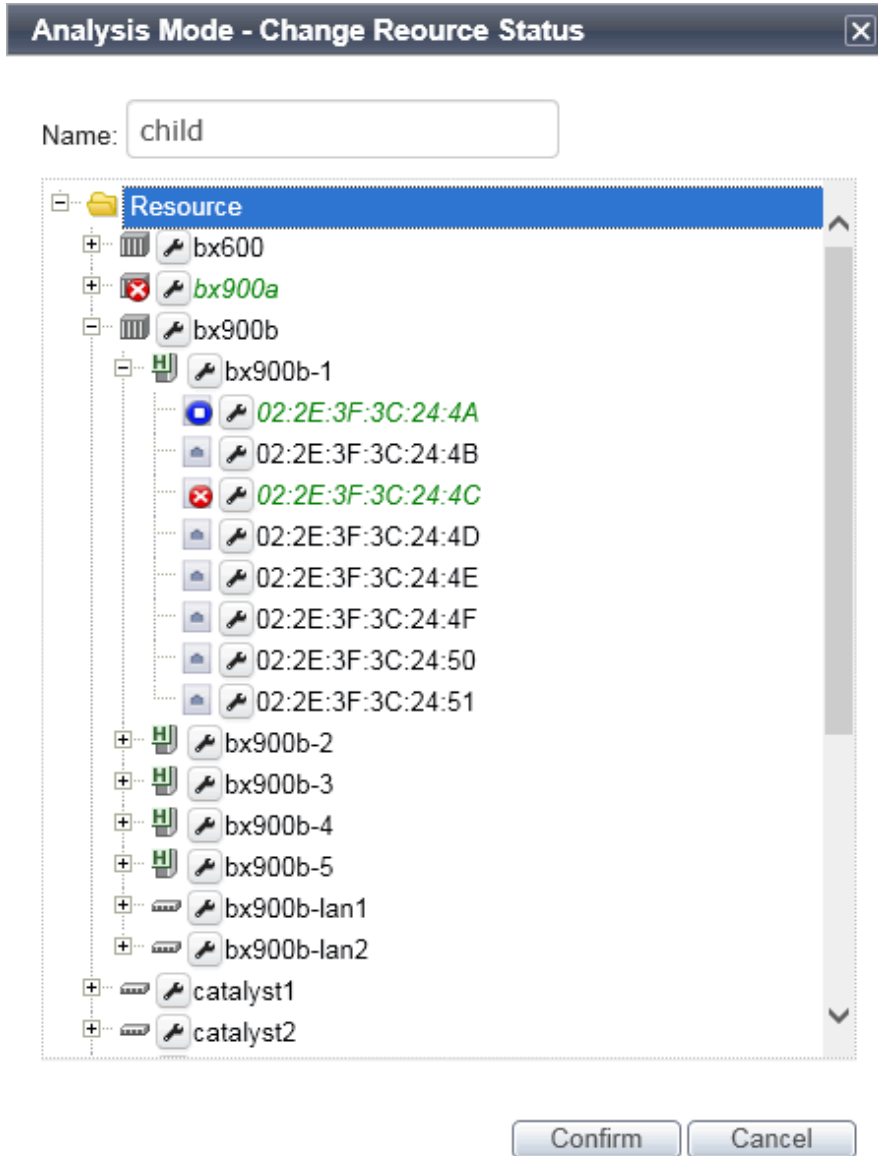
This section explains the Change Resource Status function for influence scope data.

This function changes the statuses of resources displayed in the network view and saves the modified failure state data. This enables you to confirm the affected scope when trouble occurs on a particular resource, using the [Analysis Mode] window.

The [Change Resource Status] window can be displayed by performing the following operations.

1. Click the [Action] button on the [Analysis Mode] window.
2. Select [Change Resource Status] from the list of actions.

Figure 13.24 [Change Resource Status] Window



Name

Specify the name of the modified failure state data with the changed resource status.

Tree Display Area

Resources displayed in the network view are displayed in a tree format.

Resource Icon Display Area

An icon indicating the resource type is displayed.

When the resource status is something other than [normal], the icon representing the resource status is allocated.

When the cursor is hovered over the icon, a tooltip providing the following information is displayed.

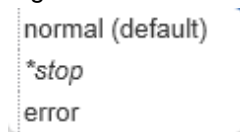
- IP address
- Device name
- Location

When the resource does not have the above information, a hyphen ("-") is displayed.

Configuration Button (Spanner Icon)

Clicking the configuration button (the spanner icon) displays the following configuration menus.

Figure 13.25 The "Change Status" Menu



Change Status

Set one of the following statuses as the resource status:

- normal
- stop
- error

In Analysis Mode, when the status of a resource is one of the following, it is handled as [error].

- warning
- unknown
- fatal

Therefore, when using the Change Resource Status function, specify these statuses instead of [error].

Note

As [stop] indicates a normal stoppage, the influence scope for resources with the [stop] status is not displayed. In order to display the influence scope when devices have been stopped for maintenance, specify [error].

Point

The asterisk ("*") appended to the beginning of a state name indicates that the corresponding status is set for the resource.

"(default)" appended to the end of a state name indicates that the corresponding status is the status prior to changing of the resource status.

However, "(default)" is not displayed if the resource status before change is one of the following:

- warning
- unknown
- fatal

Resource Name Display Area

The name of the resource is displayed.

When the cursor is hovered over the icon, a tooltip providing the following information is displayed.

- IP address
- Device name
- Location

When the resource does not have the above information, a hyphen ("-") is displayed.

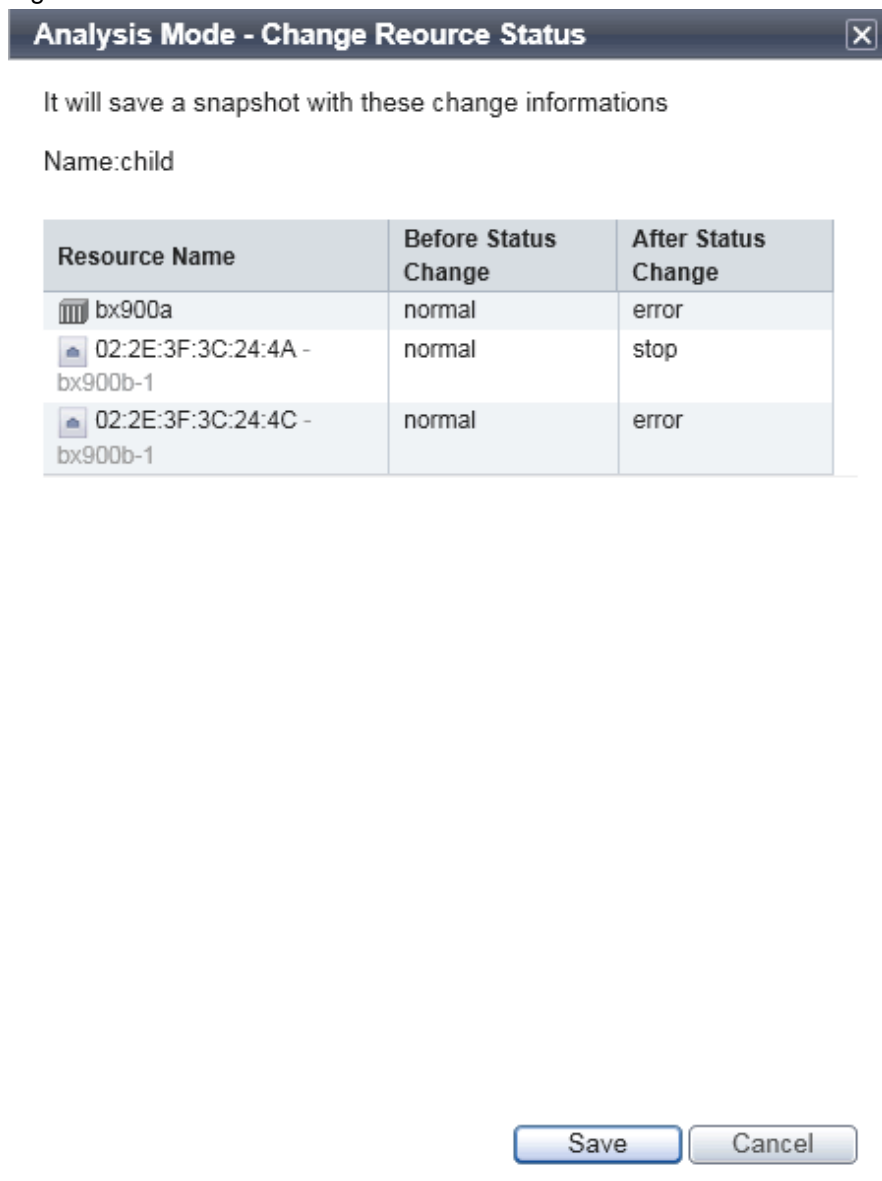
Point

Resource names for which the resource status is being changed are displayed in green and italics.

The [Confirm] Button

Confirm the content of changes to resource statuses.

Figure 13.26 Confirmation Window



The [Save] Button

When the [Save] button is clicked, the influence scope data with changed resource statuses is saved as modified failure state data.



Up to five sets of modified failure state data can be saved.

13.3.9.5 Deleting Influence Scope Data and Modified Failure State Data

Use the following procedure to delete influence scope data.

1. Select the influence scope data in the [Analysis Mode] window.
2. Click the [Delete] button.

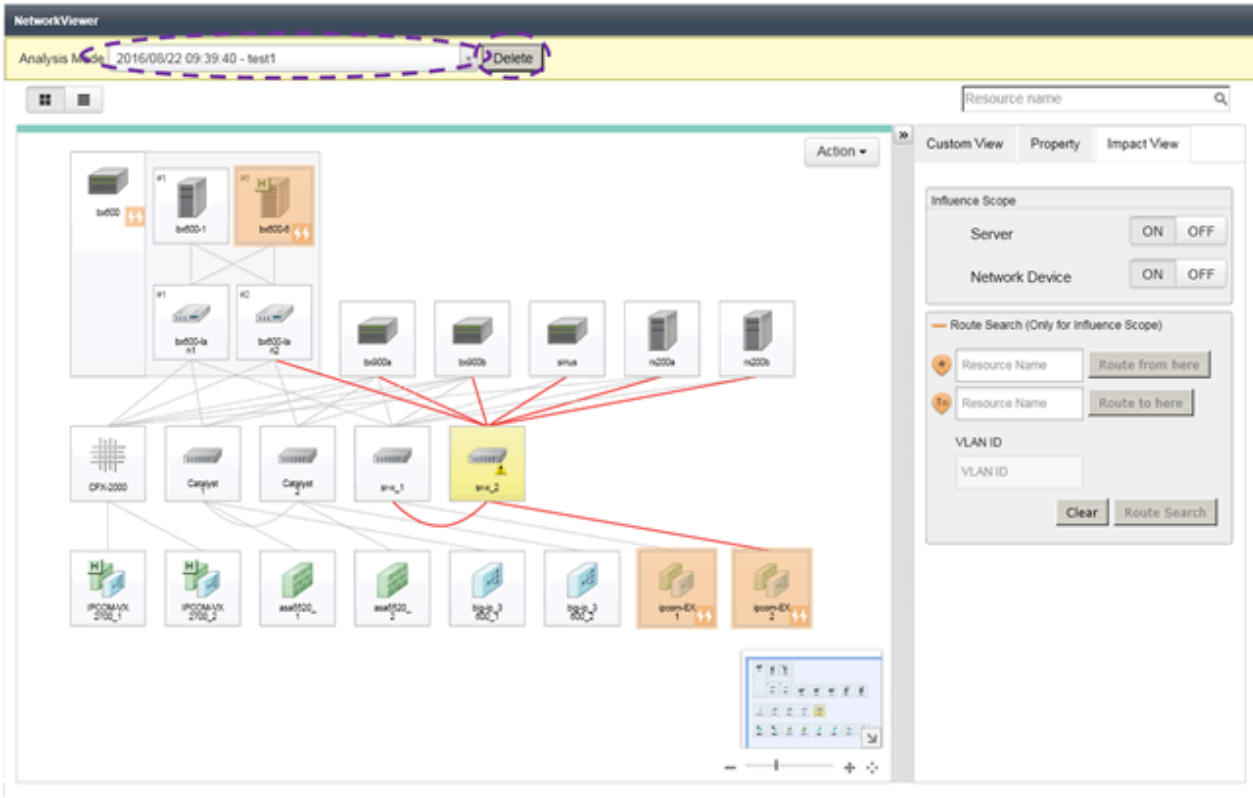
The [Delete Influence Scope Data] window is displayed.

3. Click the [OK] button.

The influence scope data is deleted.

When influence scope data contains modified failure state data, the modified failure state data is also deleted.

Figure 13.27 Deleting Influence Scope Data and Modified Failure State Data



Modified failure state data can be deleted using the same procedure.

13.3.10 Other Functions

The following functions are available in Analysis Mode as well as in NetworkViewer.

- [Map] button
- [List] button
- Resource search

- [Action] button
 - Export view information
- Map navigation area
- Magnification slider
- [Display Initialization] button
- Custom view
 - Filter
 - Resource status
 - Link status
 - Route search
 - Highlight
 - VLAN ID
- Property
- Expand buttons for resource icons (Menu)
- Expand buttons for resource icons
- Close buttons for resource icons

For details, refer to explanation of each function of NetworkViewer.

13.4 Advisory Notes

This section explains the advisory notes of NetworkViewer.

Browser

- Internet Explorer 8 cannot be used. Use another browser.

For details of usable browsers, refer to "Required Software: Admin Clients" in "6.1.1.4 Required Software" in the "Overview".

View

- The following LAN switch blades are supported by the Network Map.
 - BX600 GbE Switch Blade 30/12
 - PY CB Eth Switch/IBP 1Gb 36/12
 - PY CB Eth Switch/IBP 1Gb 36/8+2
 - PY CB Eth Switch/IBP 1Gb 18/6
 - PY CB Eth Switch/IBP 10Gb 18/8
 - PY CB Eth Switch 10/40Gb 18/8+2
 - PY CB DCB SW 10Gb 18/6/6
 - PY CB 10Gb FEX Nexus B22
- The settings of [Extended Partitioning Mode] for PRIMEQUEST servers are not displayed in the Network View. They can be checked from the ROR console. Refer to "[7.6.2 Registering PRIMEQUEST Servers](#)".
- As Windows bridge connections are not supported, network links will not be displayed.
- Chassis and servers are displayed for PRIMERGY BX series, PRIMEQUEST, and PRIMERGY RX/TX.
- The virtualization software that can display the network configuration in a virtual server is VMware and Hyper-V.

- For VMware and Hyper-V virtual switches, network links are only displayed when using the standard switches.
- When using switches other than the standard ones, such as distributed virtual switches, those virtual switches and their network links are not displayed.
- The display of Logical Networks in Hyper-V environments is not supported.
- When connecting wires between virtual LAN switches and VMware VM guests are not correctly displayed, log in to the VM management software, start the VM guest, and then execute the update of the network information.
- When SCVMM is not registered with ROR, the resources of Hyper-V might not be correctly displayed.
- Neither the logical port nor the relation of links of the link aggregation is displayed.
- When two or more VM hosts with the same name exist, the relation between the VM host and the Virtual LAN Switch might not be correctly displayed.
- VLAN is not displayed for ports where trunk VLANs or private VLANs are set and ports in promiscuous mode.
- The display of NIC teaming is not supported when the following NIC teaming software is used.
 - One Command NIC Teaming and Multiple VLAN Manager
 - NIC Teaming (LBFO)
- Link information of the virtual switches of Hyper-V 2012 R2 and NICs of virtual machines that are not managed by SCVMM will not be displayed.
- When the UMC function () is enabled for the CNA of the physical server, NICs other than those with function number 0 are not displayed.
- Only the network links of PRIMERGY BX series LAN switch blades and the network devices of PRIMERGY RX/TX servers are displayed. The network links of PRIMEQUEST servers and network devices are not displayed.
- Even the link between resources is deleted, it may remain temporarily in the link display. To update Network links manually, click the [Update] button.
- The Network Map cannot display network links between BX600 GbE Switch Blade 30/12 and the following LAN switch blades:
 - PY CB Eth Switch/IBP 1Gb 36/12
 - PY CB Eth Switch/IBP 1Gb 36/8+2
 - PY CB Eth Switch/IBP 1Gb 18/6
- The links of an external port are not displayed for LAN switch blades that operate in Converged Fabric mode or LAN switch blade PY CB 10Gb FEX Nexus B22.
- VLAN search status is only displayed for port to port or port to NIC. If both ends are not port or NIC, the VLAN search status is not displayed.
- Some Untagged VLANs which have been configured with an AMPP function for VCS fabrics may not be displayed.

Acquisition of Link Information

- Using the following procedure, it is possible to acquire the information regarding physical links between LAN switches.
 - a. From the ROR console menu, select [Tools]-[Topology]-[Detect physical links].
The [Detect Physical Links] dialog is displayed.
 - b. Click the [OK] button.

Note

- Detect physical links can be used when using discovery of LAN switches in order to register LAN switches. When there are LAN switches that have been registered using the definition file of the network configuration information, this menu item cannot be used.

- When a LAN switch is located between LAN switches registered using the menu item, "Discover LAN switches", links may not be displayed properly.



Example

.....

In such a case, the following inconsistencies may be displayed. A LAN switch port maybe seen as being connected to multiple switches (multiple links are shown attached to that switch port).

.....

- The links composing link aggregation might not be correctly displayed.
-

Chapter 14 Power Control

This chapter explains how to remotely control the power state of managed resources.

14.1 Server Power Control

This section explains how to remotely control the power states of physical servers, VM hosts, and VM guests.

Use the following procedure to perform power control operations.

1. In the ROR console server resource tree, right-click the desired server (or the physical OS or VM host running on the server) or VM guest, select [Power] from the popup menu, and select one of the following options:

ON

This option powers on a halted resource and starts its operating system.

OFF

This option powers off an active resource after shutting down its operating system.

OFF (Forced)

This option forcibly powers off an active resource without first shutting down its operating system.

Reboot

This option restarts an active resource after shutting down its operating system.

Reboot (Forced)

This option forcibly restarts an active resource without first shutting down its operating system.

The confirmation dialog is displayed.

2. Click [OK].

The specified power control operation is executed.

3. The progress of the specified operation is displayed in the Recent Operations area. Check that the operation status is shown as "Completed", and that the resource in the server resource tree or [Resource List] tab has changed to the expected power state.



Information

A reboot or forced reboot of a physical server or VM host is done by shutting down the server once, and powering it on again (instead of a system reset).



Note

- VM guests must be properly configured in order to use the power off or reboot options. Attempting to shut down or reboot a VM guest that is not properly configured will result in an error. For details, refer to "9.2.1 Configuration Requirements" in the "Design Guide VE".
- Depending on the server virtualization environment, a VM guest may automatically migrate to another VM host when a power control operation is performed. This may cause power control operations to fail and return an error when used on VM guests. For details, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".
- 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 configuring the VM guest's startup and shutdown options in the server virtualization software used. For details, refer to the server virtualization software manual.
- Take caution regarding the following points when shutting down or rebooting a PRIMEQUEST managed server.
 - If rebooting is attempted for a server that has been placed into hardware maintenance mode, the operation fails and only powering-off is performed.

[Windows]

- Take caution regarding the following points when shutting down or rebooting a managed server running a Windows operating system.
 - If Windows is not configured to shut down when the computer's power button is pressed, the power operations in Resource Orchestrator may not function properly.
To check this option, access the Control Panel, open the [Power Options], and check the settings of the [Advanced] tab in the [Power Options Properties] window.
 - If a file is being edited by a logged-in user, a dialog prompting the user to save the file is displayed, and the system may not shut down immediately.
In such cases, shutdown does not take place until the user takes the appropriate action or a specified time (approximately five minutes) has elapsed.

[OVM for SPARC]

When the function is not supported by OVM for SPARC, stopping and rebooting of the VM guest cannot be performed. Based on the virtual machine status, either directly operate the virtual machine, or perform a forced stop or forced reboot. When executing power operations of VM guest using this product, binding / unbinding of resources is also executed.

- When starting a VM guest
Binding of resources is executed.
- When stopping a VM guest
Unbinding of resources is executed.
- When restarting a VM guest
Binding/unbinding of resources is not executed.

In this product, VM guest configuration information is saved automatically after power operations are performed. When you disable the auto-save function of configuration information in this product, add a definition to the definition file which configures the execution of configuration information preservation. For details of a definition file, refer to "9.2.3 Definition Files of Each Product" in the "Design Guide VE".

[VMware] [Hyper-V] [Xen] [Citrix Xen] [KVM] [Solaris Zones] [OVM for x86 3.x] [OVM for SPARC]

- Take caution regarding the following points when powering-off or rebooting a VM host.
 - When using a server virtualization software's high-availability feature, confirm that the server is set to VM maintenance mode within that virtualization software. This can be confirmed from the virtualization software client.
 - Perform power operations only after setting VM maintenance mode (either from the VM management software client or using the resource control command).
Refer to the server virtualization software manual, or to "3.4 rcxadm server" in the "Reference Guide (Command) VE" for details. Depending on the server virtualization software used, some restrictions may apply to the use of VM maintenance mode settings. For details about such restrictions, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".

14.2 Chassis Power Control

This section explains how to remotely control the power state of a chassis.

Power operations are only possible for PRIMERGY BX server chassis.

The power state of a blade chassis can be controlled using the rcxadm chassis command.

For details, refer to "3.1 rcxadm chassis" in the "Reference Guide (Command) VE".

Chapter 15 Control of VM Environments

This chapter explains the Resource Orchestrator functions that are specific to VM guests and VM hosts.

Some functions may or may not be available depending on the server virtualization software used. Refer to "9.1 Deciding Server Virtualization Software" in the "Design Guide VE" for details.

Other functions are similar in use to those available for regular physical OSs (without server virtualization software).

15.1 Migration of VM Guests between Servers

This section explains how to migrate a VM guest to a VM host on a different physical server.

Two methods of VM guest migration are available in Resource Orchestrator. Although such methods are named differently depending on the server virtualization software used, Resource Orchestrator makes use of the following naming convention.

For details on migration pre-requisites and terminology, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".

- Live Migration

Migration of a VM guest without shutting down its VM host.

- Cold Migration

Migration of a VM guest while its VM host is shut down. A VM guest after migration is set to the same power status as it was before the migration.

The availability of those methods depends on the power status of VM guests, as described below.

Table 15.1 Migration Methods Available for Each Power Status

VM Guest Power Status	Migration Method	
	Cold Migration	Live Migration
ON	Available	Default
OFF	Default	N/A

Default: This method is available and selected by default.

Available: This method is available.

N/A: This method is not available.

A VM guest after migration is set to the same power status as it was before the migration. For example, performing a cold migration on an operating VM guest will temporarily shut it down during migration, before starting it up again after completion of the migration process. It is therefore recommended to set the target VM guest to the desired post-migration power status before performing migration.

Use the following procedure to migrate a VM guest.

1. In the ROR console server resource tree, right-click a VM guest to migrate and select [Migrate VM Guest] popup menu.
2. The [VM Guest Migration] dialog is displayed.

Set the following items:

Destination

Select a destination VM host.

Migration Method

Select the desired migration type.

3. Click [OK].

The selected VM guest is migrated to its new host.

VM guests can be migrated from the command-line, using the `rcxadm server migrate` command.

For details, refer to "3.4 rcxadm server" in the "Reference Guide (Command) VE".

15.2 VM Maintenance Mode of VM Hosts

This section explains how to set and release VM maintenance mode on VM hosts.

For details on VM maintenance mode, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE".

VM maintenance mode can also be set or released from the command-line, using the `rcxadm server set` command.

For details, refer to "3.4 rcxadm server" in the "Reference Guide (Command) VE".

15.3 VM Home Position

This section explains VM Home Position.

By configuring the VM Home Position in advance, it is possible to restore VM guests to their original VM host using only one operation when they have been migrated to a different VM host for operation or maintenance needs.

This enables restoration of multiple VM guests to their original locations without the need to record their original locations.

15.3.1 Setting VM Home Position

When configuring a VM Home Position, the relationships of operating VM guests and registered VM hosts are retained.

Setting is only available when more than one VM guest exists.

Information

- When registering a new VM host, as the relationship between the VM host and operating VM guests is not yet retained, reconfiguration of VM Home Position is necessary.
 - When a new VM guest is detected, reconfigure the VM Home Position so the relationship between that VM guest and its VM host is set.
 - When configuring the home position of a system, all VM Home Positions of VM guests are set to the current configuration.
 - When configuring home positions for each VM host, VM guests will be associated with the VM host on which they are operating. The relationships are retained, even when a VM guest associated with the VM host is operating on another VM host.
 - VM guests that have been migrated to somewhere other than the cluster set with the VM management product cannot be returned to their original VM host using the VM home position.
-

Configuring a System's VM Home Position

Use the following procedure to configure a VM Home Position for all VM hosts on a system:

1. Select [Operation]-[VM Home Position]-[Settings] from the ROR console menu.

The [Configure VM Home Position Settings] dialog is displayed.

2. Click [OK].

The VM Home Position is set.

Configuring a VM Host's VM Home Position

Use the following procedure to configure the VM Home Position for a selected VM host:

1. In the ROR console server resource tree, right-click VM host and select [VM Home Position]-[Settings] from the popup menu.

The [Configure VM Home Position Setting] dialog is displayed.

2. Click [OK].

The VM Home Position is set.

15.3.2 Migrating to VM Home Position

Migrate VM guests back to their original VM hosts using the relationship information that was registered in advance.

The method used for VM guest migration is automatically selected from cold migration and live migration after each VM guest's power status is checked.

Migrating all VM Guests to their VM Home Positions

Use the following procedure to migrate the VM guests of a system to their VM Home Position:

1. Select [Operation]-[VM Home Position]-[Back to Home] from the ROR console menu.

The [Migrate VM Guests to their VM Home Positions] dialog is displayed.

2. Click [OK].

Migration of VM guests to their VM Home Positions will be performed.

Migrating VM Guests of a Selected VM Host to their VM Home Position

Use the following procedure to migrate VM guests associated with a selected VM host to their VM Home Position:

1. In the ROR console server resource tree, right-click a VM host and select [VM Home Position]-[Back to Home] from the popup menu.

The [Migrate VM Guests to their VM Home Position] dialog is displayed.

2. Click [OK].

Migration of VM guests to their VM Home Position will be performed.

When migrating VM guests to their VM Home Position, use the `rcxadm server migrate` command.

For details on the `rcxadm server` command, refer to "3.4 `rcxadm server`" in the "Reference Guide (Command) VE".

15.3.3 Clearing VM Home Position

When the VM Home Position is cleared, the relationships of VM hosts and VM guests are cleared.

Clearing a System's VM Home Position

Use the following procedure to clear the VM Home Position of all VM host's on a system:

1. Select [Operation]-[VM Home Position]-[Clear] from the ROR console menu.

The [Clear VM Home Position Settings] dialog is displayed.

2. Click [OK].

The VM Home Position settings are cleared.

Clearing a VM Host's VM Home Position

Clear VM Home Position of selected VM hosts using the following procedure.

1. In the ROR console server resource tree, right-click a VM host, and select [VM Home Position]-[Clear] from the popup menu.

The [Clear VM Home Position Setting] dialog is displayed.

2. Click [OK].

The VM Home Position setting is cleared.

15.4 External Software

This section explains how to configure the settings required by Resource Orchestrator to interact with third party software.

VM Management Console

To launch an external VM management console (provided by the virtualization software used) from the ROR console, users must be granted the permission to launch this management console in the Java Plug-in policy settings. For details on the VM management consoles that can be started from the ROR console, refer to "9.2.1 Configuration Requirements" in the "Design Guide VE".

Use the following procedure to enable launch of the VM management console.

1. In the ROR console server resource tree, right-click the target VM host or VM guest, and select [VM Management Console] from the menu that is displayed.

The [Launch VM Management Console] dialog is displayed.

2. Click [OK].

If launch of the VM management console from the ROR console has not been enabled yet, a [Download] dialog for the Java policy setup script is displayed.

3. Click [OK].

This will download the Java policy setup script. Save the script to an arbitrary location.

4. Execute the saved Java policy setup script. This will configure Java policy settings and allow launch of the VM management console.

5. Close all Web browsers.

After closing all open Web browsers, start a new Web browser and re-log into the ROR console. The VM management console can now be launched from the ROR console.

Information

Depending on script-related settings, the command prompt opened by the Java policy setup script may close right after finishing its execution, making it impossible to confirm whether the script ended successfully.

In this case, select [start]-[Run] from the Windows start menu, and execute the following command.

```
wscript "Full_path_name_of_the_Java_policy_setup_script"
```

Note

If the VM management screen is started on VMware vSphere 5.0 or later, it may connect with the VM management product or the VM host, and login may fail.

In this case, input the password from the VM management screen, and log in.

Chapter 16 Backup and Restore

This chapter explains how to use the backup and restore functions provided in Resource Orchestrator.

16.1 Overview

The backup and restore functions allow the backup and restoration of system images from physical OSs or VM hosts.

The system image backup and restore function enables backup of images of physical OSs and VM hosts over the network, and stores them on a disk on the admin server.

A system image backup can be used for the following purposes.

- Software maintenance

A system image backup can be created as a precautionary measure before performing maintenance tasks such as applying patches, installing, or modifying installed software.

- Hardware maintenance

A system image backup can be used to guard against hardware problems such as disk failures.

Note

- Regardless of the boot environment (local/SAN/iSCSI) and RAID configurations, only the contents of the first disk (boot disk) recognized by the managed server's BIOS can be backed up and restored.

For a server using local boot with a SAN data configuration, it is necessary to configure the target disk of image operations.

For details, refer to "[9.1.13 Changing Target Disks of Image Operations](#)".

The contents of other disks (data disks) cannot be backed up and restored. To properly backup and restore such data disks, it is recommended to use dedicated backup software, or the copy functions available in storage devices.

When the first disk contains multiple partitions (Windows drive, Linux/VMware partition), all partitions are backed up.

Table 16.1 Examples of system image backup and restore targets

Disk	Windows Disk Name	Windows Drive Name	Target of Backup and Restore
First	Disk 0	C:	Yes
		E:	Yes
Second	Disk 1	D:	No
		F:	No

- As managed servers are restarted during backup and restore operations, their applications should be stopped beforehand.
- Restore operations can only be performed for the servers from which a backup has been collected.
- When backups have been collected from a managed server with UMC enabled, perform the restore operation on the server with UMC enabled.
- The first partition must be a primary partition.
- Backups can be collected with the following file systems. Note that LVM (Logical Volume Manager) partitions are not supported.
 - NTFS
 - EXT3
 - EXT4
 - LinuxSwap

Point

When Red Hat Enterprise Linux 7 is installed with default options, the file system is XFS.

- The operations for backup and restore of VM hosts differ depending on the server virtualization software used. For an explanation of the behavior differences that occur when VM guests are included in the VM host's boot disk, refer to "9.2.2 Functional Differences between Products" in the "Design Guide VE". If VM guests on the boot disk are not to be backed up (and restored), VM guest files should be moved to another disk.
- To preserve the configuration of the server virtualization software used, VM guests should be backed up at the same time as VM hosts. During backup, because the target VM host will be automatically set to VM maintenance mode, the VM host should be in a state that allows VM maintenance mode to be set.
When backing up a VM host in a high-availability configuration, all VM guests stored on shared disks should be migrated to another VM host beforehand.
After backing up the VM host, migrate the VM guests back to their original VM host.
Refer to the server virtualization software manual and "9.2.2 Functional Differences between Products" in the "Design Guide VE" for information on how to back up and migrate VM guests, or about the VM maintenance mode.
- To preserve the configuration of the server virtualization software used, VM guests backed up at the time of the VM host's backup should also be restored when restoring a VM host. Note that this is not required if no changes likely to alter the virtualization software configuration were made (e.g. changes such as addition or deletion of a VM guest, or changing the placeholder for VM guest definition files).
During restore, because the target VM host will be automatically set to VM maintenance mode, the VM host should be in a state that allows VM maintenance mode to be set.
If the target VM host is in a high-availability configuration, all VM guests stored on shared disks should be migrated to another VM host beforehand.
After restoring the VM host, migrate the VM guests back to their original VM host.
Refer to the server virtualization software manual and "9.2.2 Functional Differences between Products" in the "Design Guide VE" for information on how to restore and migrate VM guests, or about the VM maintenance mode.
- Deleting a managed server will delete its backed up system images at the same time.
- It is not possible to backup, restore, or delete a system image from a managed server for which a system image (including different versions) is already being backed up, restored, or deleted.
- When restoring a system image on a server whose name was changed after the deployment of a cloning image, check that the "*server_name*" displayed on the server resource tree and the System Image List match the new server name before restoring the system image.
- For managed servers on which the Watchdog function is enabled, backup or restore operations on that server may be aborted by an automatic restart or shutdown. The Watchdog is a function which automatically restarts or shuts down non-responsive servers when their operating system does not respond for a given period.
Therefore, it is highly recommended to disable the Watchdog function before a backup or restore operation.
For details on the Watchdog function, refer to the server manual.
- If the disk size of the source (backed up) server differs from that of the destination (restored) server, restore is possible only in cases where the disk size of the destination server is larger than that of the source server.
In that case, unused disk space will remain on the destination server. To use this unused disk space, a partition should first be created from it.
Restoring a system image to a server on which the disk size is smaller than that of the source (backed up) server is not possible. This also applies to server switchover and failback operations that are based on backup and restore, as well as cloning operations.
Therefore, it is also necessary to ensure that spare servers of cloning destination servers have a large enough disk.
- When backing up or restoring system images, or collecting and deploying cloning images, up to four processes can be executed simultaneously. If four processes are already being executed, any additional image operations will enter a standby state.
Moreover, server switchover which is executed using the backup and restore method or any restore process performed during failback will also enter a standby state. When Auto-Recovery or manual switchover using the backup and restore method is used, please limit the number of image operations (backup or restore of system images, or collection and deployment of cloning images) performed at the same time to 3.
- When using backup and restore for PRIMEQUEST servers, check that the boot option settings and BIOS settings of the target servers match. When the settings are different, execute the function after changing the settings so they match. For details on how to change

boot options, refer to ["9.1.10 Changing Boot Options"](#).

When using PRIMEQUEST 1000 Type2, disable the x2APIC mode of the UEFI.

- For the PRIMEQUEST 2000 series, backup and restore is only possible when using Windows managers. PXE boot is only supported by on-board LAN NICs.
 - When the target managed server is Linux and the disk is recognized using the by-id name, the collected system image cannot be restored after changing disks.
-

16.2 Backup

This section explains how to collect a system image backup.

System images can only be backed up from managed servers that are not in "stop" status.

System images can also be backed up using commands.

Refer to "Chapter 4 Image Operations" in the "Reference Guide (Command) VE" for details.

Preparations

If the managed server has the following configuration, configure the target disk of image operations before performing backup.

- Local boot with a SAN data environment

For the configuration procedure, refer to ["9.1.13 Changing Target Disks of Image Operations"](#).

Execute the command below before performing backup if the managed server has the following configuration.

- When using the ext4 file system of Red Hat Enterprise Linux 6 or Red Hat Enterprise Linux 7, and one of the following conditions is met
 - In a SAN boot environment using HBA address rename
 - When using a rack mount or tower server and the server is registered with "Disable" of "Association with server management software (ServerView)" is selected

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

- In a SAN boot environment using HBA address rename, and the following model or OS

- PRIMERGY BX960 S1
- XenServer6 or later

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

Backing up a System Image

Use the following procedure to back up a system image from a managed server.

- When backing up a VM host in a high-availability configuration, all VM guests stored on shared disks should be migrated to another VM host beforehand.

During backup, because the target VM host will be automatically set to VM maintenance mode, the VM host should be in a state that allows VM maintenance mode to be set.

After backing up the VM host, migrate the VM guests back to their original VM host.

Refer to the server virtualization software manual and "9.2.2 Functional Differences between Products" in the "Design Guide VE" for information on how to migrate VM guests, or about the VM maintenance mode.

- When using PRIMECLUSTER GLS for admin LAN redundancy, backup of a system image may fail if the following message is displayed in the event log.

```
FJSVrcx:WARNING:41306:server:NIC takeover on Admin LAN was detected
```

If this occurs, wait for the following message to show in the event log before performing backup again.

```
FJSVrcx:INFO:23301:server:admin LAN information was successfully updated
```

16.3 Restore

This section explains how to restore a system image backup.

System images can also be restored using commands.

Refer to "Chapter 4 Image Operations" in the "Reference Guide (Command) VE" for details.

Restoring a System Image

Use the following procedure to restore a system image to a managed server.

1. Place the target server into maintenance mode.
 - a. In the ROR console server resource tree, right-click the target server (or its physical OS or VM host) and select [Maintenance Mode]-[Set] from the popup menu.

The [Set Maintenance Mode] dialog is displayed.

As the target server is restarted during restoration, all of its applications should be stopped beforehand. When restoring a VM host, all of its VM guests should also be stopped.
 - b. Click the [OK] button.

The target server is placed into maintenance mode.
2. Restore a system image.
 - To restore the system image from the server resource tree:
 - a. In the ROR console server resource tree, right-click the target server (or its physical OS or VM host) and select [Backup/Restore]-[Restore] from the popup menu.

The [Restore] dialog is displayed.
 - b. Select the system image to be restored.
 - c. Click the [OK] button.

Restoration of the system image is started.

The process status can be checked in the Recent Operations area of the ROR console.

When the [Cancel] button is clicked in the Recent Operations area, the confirmation dialog to quit the process is displayed.
 - To restore a system image from the [Image List] tab:
 - a. In the ROR console, select the [Image List] tab.

The System Image List is displayed.

- b. Right-click the system image to be restored and select [Restore] from the popup menu.

The [Restore] dialog is displayed.

- c. Click the [OK] button.

Restoration of the system image is started.

The process status can be checked in the Recent Operations area of the ROR console.

When the [Cancel] button is clicked in the Recent Operations area, the confirmation dialog to quit the process is displayed.

When restoring a VM host, be sure to also restore the VM guest backups that correspond to the restored VM host backup version.

For details on restoring VM guests, refer to the server virtualization software manual.

3. Release the target server from maintenance mode before resuming its applications.

- a. In the ROR console server resource tree, right-click the target server (or its physical OS or VM host) and select [Maintenance Mode]-[Release] from the popup menu.

The [Release Maintenance Mode] dialog is displayed.

- b. Click the [OK] button.

The target server is released from maintenance mode.



Note

If the target VM host is in a high-availability configuration, all VM guests stored on shared disks should be migrated to another VM host beforehand.

During restore, because the target VM host will be automatically set to VM maintenance mode, the VM host should be in a state that allows VM maintenance mode to be set.

After restoring the VM host, migrate the VM guests back to their original VM host.

Refer to the server virtualization software manual and "9.2.2 Functional Differences between Products" in the "Design Guide VE" for information on how to migrate VM guests, and about the VM maintenance mode.

Even when the restore operation is canceled, the target server cannot be returned to its previous status after the image is deployed.

When the managed server has the following configuration, restoration may not be performed correctly unless the target disk of image operations has been configured.

- Local boot with a SAN data environment

For the configuration procedure, refer to "[9.1.13 Changing Target Disks of Image Operations](#)".

When the managed server has the following configuration, restoration may not be performed correctly unless the following command is executed beforehand.

- When using the ext4 file system of Red Hat Enterprise Linux 6 or Red Hat Enterprise Linux 7, and one of the following conditions is met
 - In a SAN boot environment using HBA address rename
 - When using a rack mount or tower server and the server is registered with "Disable" of "Association with server management software (ServerView)" is selected

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

- In a SAN boot environment using HBA address rename, and the following model or OS
 - PRIMERGY BX960 S1

- XenServer6 or later

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvnr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

16.4 Viewing

This section explains how to browse and view existing system image backups.

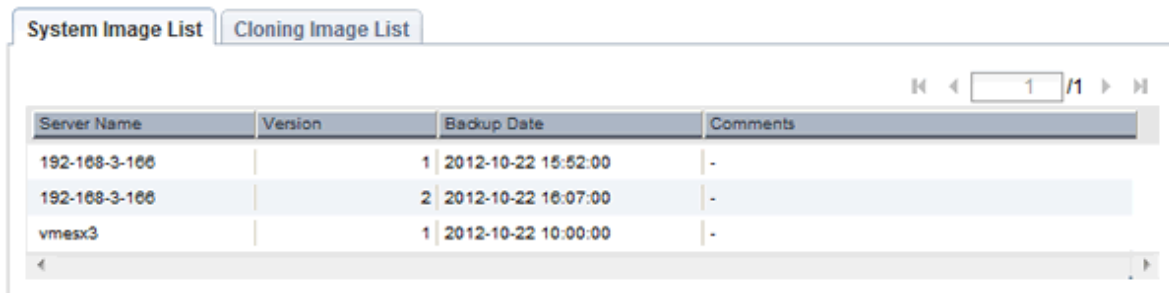
System images can also be listed using commands.

Refer to "Chapter 4 Image Operations" in the "Reference Guide (Command) VE" for details.

In the ROR console, select the [Image List] tab.

The System Image List is displayed.

Figure 16.1 System Image List



Server Name	Version	Backup Date	Comments
192-168-3-166	1	2012-10-22 15:52:00	-
192-168-3-166	2	2012-10-22 16:07:00	-
vmesx3	1	2012-10-22 10:00:00	-

Refer to "A.8 [Image List] Tab" for details on the System Image List.

To view the most recent system image backup of a managed server, select a server OS from the server resource tree and click the [Resource Details] tab.

The latest system image backup collected from the selected server is displayed under "Latest System Image".

For details about system image information, refer to "A.6 [Resource Details] Tab".

16.5 Deleting

This section explains how to delete system image backups.

System images can also be deleted using commands.

Refer to "Chapter 4 Image Operations" in the "Reference Guide (Command) VE" for details.

Deleting a System Image

Use the following procedure to delete a system image.

1. In the ROR console, select the [Image List] tab.

The System Image List is displayed.

2. In the System Image List, right-click the system image to delete and select [Delete] from the popup menu.

The [Delete a System Image] dialog is displayed.

3. Click the [OK] button.

The selected system image is deleted.



.....
A system image cannot be recovered once it has been deleted.
.....

Chapter 17 Cloning [Physical Servers]

This chapter explains how to use the server cloning function.

17.1 Overview

Cloning is a function used to deploy a cloning image collected from a single managed server (source server) to other managed servers (destination servers).

This function shortens the time required for an initial installation as it can be used to install the same operating system and software on multiple servers.

Software maintenance can also be performed quickly and easily by deploying a cloning image collected from a server on which patch application or software addition or modification has been performed.

The information below is not copied when the cloning image is collected from the managed server; and will be automatically reconfigured when the cloning image is deployed. This enables a single cloning image to be deployed to different servers.

- Hostname
- IP address and subnet mask for the admin LAN
- Default gateway for the admin LAN

Settings other than the above (such as those for applications and middleware) are not automatically reconfigured, set them manually before and after the cloning operation when necessary.

The public LAN settings (IP address and redundancy settings) for servers to which the cloning image is deployed can be configured easily by using the network parameter auto-configuration function.

For details on the network parameter auto-configuration function, refer to "[17.6 Network Parameter Auto-Configuration for Cloning Images](#)".

Cloning cannot be performed for Linux managed servers on which iSCSI disks have been configured.



Note

- When using ServerView Deployment Manager on the admin LAN, this function is disabled. Use the cloning function of ServerView Deployment Manager. For details, refer to "B.2 Co-Existence with ServerView Deployment Manager" in the "Setup Guide VE".
- When using server cloning, regardless of the boot environment (local/SAN/iSCSI) or RAID configurations, only content from the boot disk (first disk recognized by the BIOS on managed servers) is actually cloned. Data disk content (second disk onwards) cannot be cloned. It is recommended to use other backup software, or copy features available in storage systems for such purposes. For a server using local boot with a SAN data configuration, it is necessary to configure the target disk of image operations. If cloning images are deployed without configuring the target disk for image operations, data may be overwritten on an unintended disk.

For details, refer to "[9.1.13 Changing Target Disks of Image Operations](#)".

Note that all partitions (Windows drives or Linux partitions) included in the boot disk will be cloned.

Table 17.1 Cloning Target Examples

Disk	Windows Drive	Cloning Target
First	C:	Yes
	E:	Yes
Second	D:	No
	F:	No

- Because managed servers are restarted during the cloning process, it is necessary to stop all applications running on those servers beforehand.

- The first partition must be a primary partition.

When multiple partitions exist within the disk of the cloning target, the drive letters for the drives other than the system drive may be changed after cloning images are deployed. Change the drive letter back to the original letter, after deploying cloning images.

- Dynamic disks cannot be used.
- Cloning images can be collected with the following file systems. Note that LVM (Logical Volume Manager) partitions are not supported.
 - NTFS
 - EXT3
 - EXT4
 - LinuxSwap

Point

When Red Hat Enterprise Linux 7 is installed with default options, the file system is XFS.

- When using Windows Server 2012 as a managed server, cloning images cannot be collected from system disks that include ReFS data areas.
- All of the following conditions must be met for the managed server to collect the cloning image from and the managed server to deploy the cloning image to.
 - All server models must be identical.
 - The hardware configuration of each server must be identical, including optional cards, expansion boards, and the slots they are mounted in.
 - When using the UMC function, the number of functions is the same.
 - The type of all functions is NIC.
 - The same BIOS settings must have been made for all servers according to the procedure in "6.2.7 Configuring BIOS Settings of Managed Servers" in the "Design Guide VE".
 - All servers must use the same redundancy configuration (if any) and the same number of redundant paths for LAN and SAN connections. All servers must also be able to access the same network and storage devices.
Note that LAN or fibre channel switches connected in a cascade configuration are viewed as a single device.
- Some applications may require manual adjustments to function properly after cloning.
If necessary, manually perform such adjustments before or after the cloning process.
- When backing up or restoring system images, or collecting and deploying cloning images, up to four processes can be executed simultaneously. If four processes are already being executed, any additional image operations will enter a standby state. Moreover, server switchover which is executed using the backup and restore method or any restore process performed during failback will also enter a standby state. When using auto-recovery and manual switchover operations with the backup/restore method, execute a maximum of three system image backup/restore or cloning image collection/deployment operations at the same time.
- After collecting or deploying a cloning image, software required for connecting to external servers, etc. when the OS is started may not start correctly.
In this case, restart the operating system after collecting or deploying the cloning image.
- For managed servers on which the Watchdog function is enabled, cloning operations on that server may be aborted by an automatic restart or shutdown. The Watchdog is a function which automatically restarts or shuts down non-responsive servers when their operating system does not respond for a given period.
It is therefore highly recommended to disable the Watchdog function before a cloning operation.
For details, refer to the manual of the managed server.
- When using MAK license activation with Windows Server 2008 or Windows Server 2008 R2, Sysprep can be executed a maximum of three times.
Since Sysprep is executed when deploying a cloning image, cloning image collection and deployment cannot be executed four or

more times.

Therefore, it is recommended not to collect cloning images from managed servers that have had cloning images deployed, but to collect them from a dedicated master server.

- As there is a chance that data will be damaged, do not perform collection or deployment of a cloning image while performing an iSCSI connection using a software initiator.

When using data disks, use the hardware initiator.

- When the managed server is Linux and the disk is recognized using the by-id name, cloning cannot be used.

17.2 Collecting

When installing servers using the cloning function, first collect a cloning image from a source server. Collected cloning images can later be used for the deployment of other servers.

A cloning image can be collected only from a managed server on which an agent has been registered.

For details on registering agents, refer to "Chapter 7 Installing Software and Registering Agents on Managed Servers" in the "Setup Guide VE".

A cloning image can be collected from a managed server that satisfies all of the following conditions:

- The status is either "normal" or "warning"
- Has been placed into maintenance mode

Cloning images cannot be collected from VM hosts or VM guests.

Preparations

- Install the desired operating system and necessary applications on the managed server from which a cloning image will be collected. Additionally, apply any required patches and other necessary settings. Make sure that the source server operates properly after those steps.

- If the managed server has the following configuration, configure the target disk of image operations before collecting cloning images.

- Local boot with a SAN data environment

For the configuration procedure, refer to ["9.1.13 Changing Target Disks of Image Operations"](#).

- When the configurations of managed servers are as below, execute the following commands before collecting cloning images.
 - When using the ext4 file system of Red Hat Enterprise Linux 6 or Red Hat Enterprise Linux 7, and one of the following conditions is met
 - In a SAN boot environment using HBA address rename
 - When using a rack mount or tower server and the server is registered with "Disable" of "Association with server management software (ServerView)" is selected

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe  
<RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

- In a SAN boot environment using HBA address rename, and the following model

- PRIMERGY BX960 S1

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rcxadm server set -name physical server -attr bootagt=winpe
<RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rcxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

- Check whether the DHCP client is enabled on the managed server to collect the cloning image from.
- Cloning images with the same name can be saved up until the maximum number of image versions. When collecting a new cloning image when the maximum number of image versions has already been reached, select the cloning image to delete. The maximum number of image versions is three by default. This setting can be changed by following the instructions given in "[8.4 Changing the Maximum Number of Cloning Image Versions](#)".
- When deploying cloning images, the destination server temporarily starts up with its hostname set to either the physical server name or the source server's hostname. If the same server names are detected on the same network, a network duplication error will occur. Some programs may experience problems when started with a different hostname. If such programs have been installed, configure their services not to start automatically. This has to be configured before collecting the cloning image. Some programs may experience problems when the same server name exists. If such programs have been installed, configure their services not to start automatically. This has to be configured before collecting cloning images.
- When using the network parameter auto-configuration function, check the operation before performing collection. For details, refer to "[17.6.1 Operation Checks and Preparations](#)".
- When the target of operation is a PRIMEQUEST server, confirm that the boot option settings on the target server and the boot option set in BIOS are configured for Legacy boot. When the settings of one of the servers are UEFI, configure the settings after changing to Legacy boot. For details on how to change boot options, refer to "[9.1.10 Changing Boot Options](#)".
- When using local disks as system disks, and iSCSI storage as data disks, refer to the advisory notes described in "Table: Supported Storage Configurations" in "8.1.1 Storage Configuration" in the "Design Guide VE".

[Windows]

- Enable NetBIOS over TCP/IP.
- A volume license is required for cloning. The volume license must be entered during the installation of Resource Orchestrator Agent. Refer to "2.2.1.2 Collecting and Checking Required Information" and "2.2.2 Installation [Windows] [Hyper-V]" in the "Setup Guide VE" for details.

If no volume license is entered during the agent installation, or if this information is changed after installation, edit the following license configuration file on the source server. Note that the structure and location of this file depend on the version of Windows that is being used.

- For Windows Server 2003
Installation_folder\Agent\scw\SeparateSetting\sysprep\sysprep.inf
Edit the following line to enter a valid product ID.

```
ProductID= Windows product key (*)
```

* Note: 5-digit values separated by hyphens

 **Example**

```
ProductID=11111-22222-33333-44444-55555
```

Note

If there is a mistake in the product ID value or format, an error occurs when the collected cloning image is deployed. Make sure to enter a valid product ID when editing the definition file.

- For Windows Server 2008 or later

Installation_folder\Agent\scw\SeparateSetting\ipadj\activation.dat

In the [ActivationInfo] section, set the following parameters using a "parameter=value" syntax. Refer to the following table for details on each parameter.

Table 17.2 Structure of the Definition File

Format	Parameters	Value
KMS	.cmd.remotescript. 1.params.kmscheck (Mandatory)	KMS host search type. Select one of the following: - AUTO Automatically searches KMS hosts. - MANUAL Specify the KMS host. When "MANUAL" is selected, make sure to set .cmd.remotescript. 1.params.kmsname.
	.cmd.remotescript. 1.params.kmsname	The host name (FQDN), computer name, or IP address of the KMS host.
	.cmd.remotescript. 1.params.kmsport	KMS host port number. The default is 1688.
MAK	.cmd.remotescript. 1.params.makkey (Mandatory)	MAK key.
Comm on	.cmd.remotescript. 1.params.ieproxy	Host name (FQDN) and the port number of the proxy server. The host name and port number are separated by a colon (":").
	.cmd.remotescript. 1.params.password	Administrator password. An existing password setting will be displayed as an encrypted character string. To edit the password, overwrite it with plain text, delete the "encrypted=yes" line, and perform the encryption procedure indicated in the example. If this parameter is not set, the password will be re-initialized.
	encrypted	The encryption status of the Administrator password. "yes" means that the password is encrypted. If this line exists, the rcxadm deployctl command does not operate.

Example

- With KMS (Automatic Search)

```
[ActivationInfo]
.cmd.remotescript.1.params.kmscheck=AUTO
.cmd.remotescript.1.params.ieproxy=proxy.activation.com:8080
.cmd.remotescript.1.params.password=PASSWORD
```

- With KMS (Manual Settings)

```
[ActivationInfo]
.cmd.remotescript.1.params.kmscheck=MANUAL
.cmd.remotescript.1.params.kmsname=fujitsu.activation.com
.cmd.remotescript.1.params.kmsport=4971
.cmd.remotescript.1.params.ieproxy=proxy.activation.com:8080
.cmd.remotescript.1.params.password=PASSWORD
```

- With MAK

```
[ActivationInfo]
.cmd.remotescript.1.params.makkey=11111-22222-33333-44444-55555
.cmd.remotescript.1.params.ieproxy=proxy.activation.com:8080
.cmd.remotescript.1.params.password=PASSWORD
```

If the Administrator password has been changed, execute the following command. The password specified in the .cmd.remotescript.1.params.password parameter of the definition file is changed to the encrypted string, and the line "encrypted=yes" is added to indicate that the password is encrypted.

For details, refer to "5.6 rcxadm deployctl" in the "Reference Guide (Command) VE".

```
>"Installation_folder\Agent\bin\rcxadm" deployctl passwd -encrypt <RETURN>
```

- With MAK (Already Encrypted Password)

```
[ActivationInfo]
.cmd.remotescript.1.params.makkey=11111-22222-33333-44444-55555
.cmd.remotescript.1.params.ieproxy=proxy.activation.com:8080
.cmd.remotescript.1.params.password=xyz123456
encrypted=yes
```

Collecting Cloning Images

Use the following procedure to collect cloning images:

1. Place the target server into maintenance mode.
 - a. In the ROR console server resource tree, right-click the desired server (or its physical OS), and select [Maintenance Mode]-[Set] from the popup menu.

The [Set Maintenance Mode] dialog is displayed.
 - b. Click the [OK] button.

The target server is placed into maintenance mode.

2. Stop all operations running on the source server.

When a cloning image is collected, the source server is automatically restarted. Therefore, all operations running on the source server should be stopped before collecting the image.

Cancel the settings in the following cases:

- NIC redundancy has been configured for admin LANs and public LANs (*)
- Tagged VLANs have been configured on NICs

* Note: However, there is no need to cancel public LAN redundancy settings made via the network parameter auto-configuration function.

The following settings are disabled during cloning image collection, which may result in services failing to start on server startup. To avoid this, automatic startup should be disabled for any service that depends on the following settings.

- Hostname
- IP address and subnet mask for the admin LAN
- Default gateway for the admin LAN

Note

When using SUSE Linux Enterprise Server, it is necessary to configure the managed server so that only the NIC used for the admin LAN is active when the server is started. For details on how to modify the configuration, refer to the operating system manual. If this procedure is not performed, startup of network interfaces will take time, and errors may occur during the process.

3. Collect a cloning image.

- a. In the ROR console server resource tree, right-click the physical OS of the source server and select [Cloning]-[Collect] from the popup menu.
The [Collect a Cloning Image] dialog is displayed.

- b. Perform the following settings:

Cloning Image Name

Enter a name to identify the collected cloning image.

New

When creating a new cloning image, select [New] and enter a new cloning image name.

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

Update

When updating an existing cloning image, select [Update] and select a cloning image from the list.

Cloning images with the same name can be saved up until the maximum number of image versions.

If the selected cloning image has already reached this limit, it is necessary to delete one of its existing versions in order to create a new cloning image. This can be done directly in this dialog by selecting the version to be deleted from the displayed list.

The selected version will be automatically deleted when collection of the new cloning image completes.

The maximum number of image versions is three by default.

This setting can be changed by following the instructions given in ["8.4 Changing the Maximum Number of Cloning Image Versions"](#).

Comment (Optional)

Enter a comment that identifies the cloning image.

Up to 128 characters other than percent signs ("%"), back slashes ("\"), double quotes ("), and line feed characters can be specified.

If [Update] was selected for the [Cloning Image Name] option, the comment of the most recent image version is displayed.

If no comment is specified, a hyphen ("-") will be displayed in the ROR console.

It is recommended to enter comments with information such as hardware configuration (server model, disk size, and number of network interfaces), software configuration (names of installed software and applied patches), and the status of network parameter auto-configuration function.

[Release Maintenance Mode after collection] checkbox

Enable this option to automatically release the source server from maintenance mode after image collection and maintenance work.

If this option disabled, maintenance mode should be released manually after collecting the cloning image.

- c. Click the [OK] button.

The process of collecting the cloning image starts.

The process status can be checked in the Recent Operations area of the ROR console.

When the [Cancel] button is clicked in the Recent Operations area, the confirmation dialog to quit the process is displayed.

4. Restart applications on the source server.

Restore the settings of any service whose startup settings were changed in step 2 and start these services.

Restore the settings for the following cases:

- NIC redundancy for admin LANs and public LANs has been released
- The settings of tagged VLANs for NICs have been released

Check that applications are running properly on the source server.

5. Release the source server from maintenance mode.

This step is not required if the [Release Maintenance Mode after collection] checkbox was enabled in the [Collect a Cloning Image] dialog.

- a. In the ROR console server resource tree, right-click the source server (or its physical OS) and select [Maintenance Mode]-[Release] from the popup menu.

The [Release Maintenance Mode] dialog is displayed.

- b. Click the [OK] button.

The target server is released from maintenance mode.

- While a cloning image is being collected, no other operations can be performed on that image or other versions of that image (images sharing the same image name).
- Communication errors between the admin and source servers (resulting in an image collection failure or an [unknown] status on the source server) may be caused by improper use of the network parameter auto-configuration function (described in "[17.6 Network Parameter Auto-Configuration for Cloning Images](#)").
 - Auto-configuration settings were made for the admin LAN
 - Auto-configuration settings were made for the public LAN using IP addresses contained within the admin LAN subnet range

Log in to the source server and check for the presence of such settings in the definition file for the network parameter auto-configuration function.

If incorrect settings were made, perform the following operations to fix communication errors.

- Fix network settings on destination servers

Run the `rcxadm lanctl unset` command described in "[17.6.3 Clearing Settings](#)" to reset network settings to their original values.

If the admin LAN IP address is not set on the source server, set it manually to restore communications between the admin server and the source server.

- Re-collect the cloning image

Correct any errors found in the source server's network parameter auto-configuration function definition file and re-collect the cloning image from the source server.

Delete any cloning image that was collected with incorrect network parameters.

17.3 Deploying

Once collected, cloning images can be deployed to one or more destination servers.

Cloning images collected from the source server can only be deployed to destination servers which satisfy all of the following conditions:

- Destination servers should be in either "normal", "warning", "unknown", or "stop" status.
- Destination servers should have been placed into maintenance mode.
- Destination servers should be of the same model as the source server.
- I/O virtualization should be used, when destination servers are spare servers.

Cloning images cannot be deployed to managed servers where VM hosts or VM guests are running.

Preparations

- If the managed server has the following configuration, configure the target disk of image operation before deploying cloning images.
 - Local boot with a SAN data environment

For the configuration procedure, refer to "[9.1.13 Changing Target Disks of Image Operations](#)".

- When the configurations of managed servers are as below, execute the following commands before deploying cloning images.
 - When using the ext4 file system of Red Hat Enterprise Linux 6 or Red Hat Enterprise Linux 7, and one of the following conditions is met
 - In a SAN boot environment using HBA address rename
 - When using a rack mount or tower server and the server is registered with "Disable" of "Association with server management software (ServerView)" is selected

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe  
<RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

- In a SAN boot environment using HBA address rename, and the following model
 - PRIMERGY BX960 S1

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe  
<RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

If the above command has not been executed on the server from which the cloning image is being collected, the cloning image may not be collected correctly. Delete that cloning image and then redo the cloning image collection.

- It is recommended to back up destination servers before deploying cloning images, as this will simplify the recovery procedure in case of the deployed cloning image is faulty.

For details on backing up, refer to "[16.2 Backup](#)".

Note

- Cloning images cannot be deployed to servers that have been set up as spare servers for other managed servers, when not using I/O virtualization. Cancel any such settings before deploying a cloning image.
- When deploying cloning images to servers with the target disk of image operations configured, deploy the cloning images to individual servers separately.
If cloning images are deployed without configuring the target disk for image operations, data may be overwritten on an unintended disk.
- VLAN settings (on adjacent LAN switch ports) cannot be deployed during server cloning. LAN switch VLAN settings should be set up before deploying a cloning image.
For details on how to configure VLAN settings on LAN switch blades, refer to "[7.3.4 Configuring VLANs on LAN Switch Blades](#)".
- When deploying a cloning image back to its source server, the source server should be backed up before deployment.
For details on backing up, refer to "[16.2 Backup](#)".

If the deployed cloning image is faulty and causes deployment errors, use the following procedure to collect a new cloning image.

1. Restore the system image that was backed up before cloning image deployment.
 2. Fix any incorrect settings on the source server
 3. Collect a new cloning image
 4. Delete the faulty cloning image
- When deploying cloning images to multiple managed servers, if the managed servers belong to different subnets, cloning images cannot be deployed.
 - When using PRIMEQUEST servers, cloning images cannot be deployed to partitions for which UEFI has been set.
When collecting and deploying cloning images, configure the BIOS settings and boot option settings after changing to Legacy boot.
For details on how to change boot options, refer to "[9.1.10 Changing Boot Options](#)".
 - When using local disks as system disks, and iSCSI storage as data disks, refer to the advisory notes described in "Table: Supported Storage Configurations" in "8.1.1 Storage Configuration" in the "Design Guide VE".
-

Deploying Cloning Images

Use the following procedure to deploy a cloning image to one or more destination servers:

1. Place the destination server(s) into maintenance mode (only for agent-registered servers).
 - a. In the ROR console server resource tree, right-click the desired server (or its physical OS), and select [Maintenance Mode]-[Set] from the popup menu.
The [Set Maintenance Mode] dialog is displayed.
 - b. Click the [OK] button.
The target server is placed into maintenance mode.
2. Deploy a cloning image.
 - Deploying a cloning image to a single destination server
 - a. In the ROR console server resource tree, right-click the destination server (or its physical OS) and select [Cloning]-[Deploy] from the popup menu.
The [Deploy a Cloning Image] dialog is displayed.
The available cloning images are displayed.
Only cloning images that have been collected from a server of the same model as the destination server are available for deployment.
 - b. Select the cloning image to deploy, and set the following items.

Server name after deployment
Enter the name of the server to which the cloning image is to be deployed.
By default, the physical OS name is entered if the physical OS is registered. If the physical OS is not registered, the physical server name is entered.

[Windows]
A string composed of up to 63 alphanumeric characters, underscores, ("_"), and hyphens, ("-").
The string cannot be composed solely of numbers.

[Linux]
A string composed of up to 64 alphanumeric characters, and the following symbols:
"%", "+", ",", "-", ".", "/", ":", "=", "@", "_", "~"

Note

When using SUSE Linux Enterprise Server, it is not possible to configure server names that include periods (".") for the post-deployment server names of cloning images.

Information

Since the entered server name is also used as the hostname of its corresponding destination server, it is recommended to use only characters defined in RFC (Request For Comments) 952:

- Alphanumeric characters
- Hyphens, ("-")
- Periods, (".") [Linux]

[Release from Maintenance Mode after deployment] checkbox

Enable this option to automatically release the destination server from maintenance mode after cloning image deployment. If this option disabled, maintenance mode should be released manually after collecting the cloning image.

- c. Click the [OK] button.

The cloning image deployment process starts.

The process status can be checked in the Recent Operations area of the ROR console.

When the [Cancel] button is clicked in the Recent Operations area, the confirmation dialog to quit the process is displayed.

Note

Note that canceling the deployment of a cloning image does not restore the destination server to the state before the deployment took place.

- Deploying a cloning image to multiple destination servers

- a. In the ROR console, select the [Image List] tab.

A list of cloning images is displayed under the cloning image list.

- b. Right-click the cloning image to deploy and select [Deploy] from the popup menu.

The [Deploy a Cloning Image] dialog is displayed.

A server that can be deployed is displayed.

- c. Check the checkbox of the server to deploy a cloning image to, and set the following items:

[Release from Maintenance Mode after deployment] checkbox

Enable this option to automatically release the destination server from maintenance mode after cloning image deployment. If this option disabled, maintenance mode should be released manually after collecting the cloning image.

The [Server Name] column displays the names of each destination servers.

By default, server names (computer name or hostname) or physical server names are displayed.

The names specified in this column will be assigned to destination servers as their computer names (for Windows systems) or system node names (for Linux systems).

Those names can be changed using the following procedure.

1. Double-click the [Server name after deployment] cell of a server.

The [Server name after deployment] cell becomes editable.

2. Enter a new server name.

[Windows]

A string composed of up to 63 alphanumeric characters, underscores, ("_"), and hyphens, ("-").

The string cannot be composed solely of numbers.

[Linux]

A string composed of up to 64 alphanumeric characters, and the following symbols:

"%", "+", ",", "-", ":", "/", ":", "=", "@", "_", "~"

Information

Since the entered server name is also used as the hostname of its corresponding destination server, it is recommended to use only characters defined in RFC (Request For Comments) 952:

- Alphanumeric characters
- Hyphens, ("-")
- Periods, (".") [Linux]

- d. Click the [OK] button.

The cloning image deployment process starts.

The process status can be checked in the Recent Operations area of the ROR console.

When the [Cancel] button is clicked in the Recent Operations area, the confirmation dialog to quit the process is displayed.

Note

When this process is canceled, cloning image deployment to all destination servers is canceled.

Note that canceling the deployment of a cloning image does not restore the destination server to the state before the deployment took place.

3. Restart applications on the destination server(s).

Perform the following settings if necessary:

- The settings of NIC redundancy for admin LANs and public LANs
- The settings of tagged VLANs for NICs

After deployment, destination servers are set to use the admin server as their default gateway.

Reconfigure such network settings if necessary. Check that applications are running properly on destination servers.

At this point, if an application is still using the source server's hostname or IP address (e.g. within application-specific settings or configuration file), manually update such settings with the destination server values.

Note

When a managed server is a PRIMEQUEST, set the PSA-MMB IP address after deployment. For details, refer to the PRIMERGY Partition Model manual.

4. Release maintenance mode.

This step is not required if the [Release from Maintenance Mode after deployment] checkbox was enabled in the [Deploy a Cloning Image] dialog.

- a. In the ROR console server resource tree, right-click the source server (or its physical OS) and select [Maintenance Mode]-[Release] from the popup menu.

The [Release Maintenance Mode] dialog is displayed.

- b. Click the [OK] button.

The target server is released from maintenance mode.

Note

- When deploying a cloning image that was collected from a Windows server, the following information is reset on each destination server. This is a result of the execution of Microsoft's System Preparation (Sysprep) tool.

If necessary, restore the following settings to their original values after the cloning image has been deployed:

- Desktop icons and shortcuts
 - Drive mappings
 - The "Startup and Recovery" settings accessed from the [Advanced] tab of the [System Properties] window
 - Virtual memory settings
 - TCP/IP-related settings
 - The "What country/region are you in now?" settings in the locations defined in the [Location Information] window
 - Disk quota settings
 - Storage Provider settings
 - Microsoft Internet Explorer settings (RSS feeds subscription information, information stored by the Autocomplete function, saved passwords)
 - Microsoft Outlook Express settings (mail/directory server passwords)
 - Network card driver settings (drivers without a digital signature should be replaced by the latest updated drivers with a digital signature)
 - Access rights to the '\\Documents and Settings\\Default User' folder
- While a cloning image is being deployed, collection, deployment, and deletion cannot be performed simultaneously on the cloning images with the same name.
 - If a cloning image is deployed to a system with a larger disk capacity than the disk space required for the cloning image, any excessive disk space becomes unused disk space. This unused disk space can be used for other purposes.
 - Destination servers are rebooted several times during cloning image deployment. Make sure that deployment has completed before restarting operations and making further settings.
 - The number of reboots during deployment increases when using the HBA address rename function.
 - Communication errors between the admin and destination servers (resulting in an image deployment failure or an [unknown] status on the destination server) may be caused by improper use of the network parameter auto-configuration function (described in "[17.6 Network Parameter Auto-Configuration for Cloning Images](#)"). Examples of improper use are given below.

- Auto-configuration settings were made for the admin LAN
- Auto-configuration settings were made for the public LAN using IP addresses contained within the admin LAN subnet range

Log in to the destination servers on which errors occurred and check for the presence of such settings in the definition file for the network parameter auto-configuration function.

If incorrect settings were made, perform the following operations to fix communication errors.

- Fix network settings on destination servers
 - If the source and destination servers are the same
Restore the system images backed up before cloning image deployment.
 - If the destination server is different from the source server
Run the `rcxadm lanctl unset` command described in "[17.6.3 Clearing Settings](#)" to reset network settings to their original values.

If the admin LAN IP address is not set on the source server, set it manually to restore communications between the admin server and the source server.

- Re-collect the cloning image

Correct any errors found in the definition file for the network parameter auto-configuration function and re-collect the cloning image.

Re-deploy the cloning image to the destination servers for which deployment failed.

Delete any cloning image that failed to deploy.

- If activation of Windows Server 2008 or later failed during deployment, message number 47233 is displayed. This message indicates that deployment of Windows Server 2008 or later completed, but activation failed. For details on the appropriate corrective action, refer to "Message number 47233" in "Messages".
- When a cloning image is deployed to multiple servers, it may be necessary to enable IGMP snooping on admin LAN switches. If IGMP snooping is not enabled, transfer performance may deteriorate when ports with different speeds co-exist in the same network, or multiple image operations are run simultaneously.

17.4 Viewing

This section explains how to display collected cloning images.

In the ROR console, select the [Image List] tab.

A list of cloning images is displayed under the cloning image list.

Use this list to manage the cloning images used by Resource Orchestrator.

Figure 17.1 Cloning Image List

Cloning Image Name	Version	Collection Date	OS	Comments
BX900_1_clone	1	2012-10-22 10:51:00	Microsoft Windows Server 2003	.

For details on the "Cloning Image List", refer to "A.8 [Image List] Tab".

17.5 Deleting

This section explains how to delete a cloning image.

Use the following procedure to delete cloning images:

1. In the ROR console, select the [Image List] tab.
A list of cloning images is displayed under the cloning image list.
2. In this list, right-click the name of the cloning image to delete and select [Delete] from the popup menu.
The confirmation dialog is displayed.
3. Click the [OK] button.
The selected cloning image is deleted.



Note

While the cloning image is being deleted, no operations can be performed on other versions of the same cloning image (images that share the same image name).

17.6 Network Parameter Auto-Configuration for Cloning Images

This section explains the network parameter auto-configuration function for cloning images.

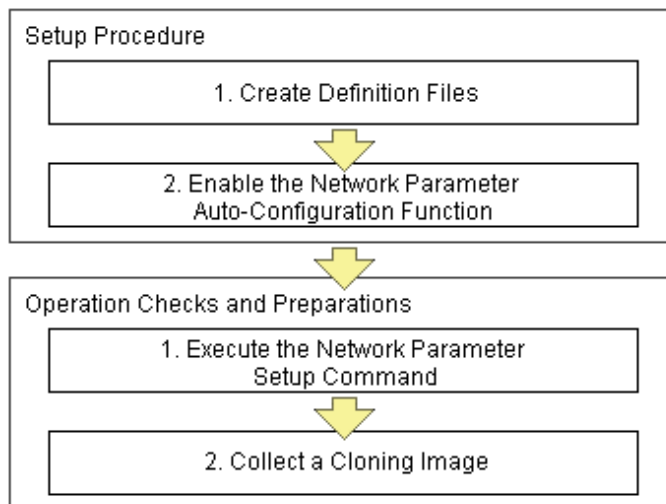
Defining public LAN network parameters for each managed server before collecting cloning images enables automatic configuration of the cloned servers' public LAN network interfaces when later deploying those cloning images.

This speeds up the deployment of multiple managed servers, as public LAN IP addresses no longer need to be manually and separately configured on each cloned server.

Perform the following settings:

- When not Using LAN Redundancy
 - IP address
 - Subnet mask
- When Using LAN Redundancy [Linux]
 - The "NIC switching mode (Physical IP address takeover function)" of PRIMECLUSTER Global Link Services

Figure 17.2 Setup Procedure When Using the Network Parameter Auto-configuration Function



Note

[Physical Servers]

The network parameter auto-configuration function cannot be used on the admin LAN. If it is used, deployment commands may fail when deploying new servers may fail, or communication issues may occur during collection or deployment of cloning images.

[Windows]

- When the OS of the managed server is Windows Server 2012, this function is not supported.
- When Windows OS is installed on the following hardware, and the server is used as a managed server of this product, it is necessary to execute the procedure below.
 - PRIMERGY BX920 S3
 - PRIMERGY BX920 S4
 - PRIMERGY BX924 S3
 - PRIMERGY BX924 S4
 - PRIMERGY BX2560 M1
 - PRIMERGY BX2560 M2
 - PRIMERGY BX2580 M1

- PRIMERGY BX2580 M2
- PRIMERGY RX200 S7
- PRIMERGY RX200 S8
- PRIMERGY RX300 S7
- PRIMERGY RX300 S8
- PRIMERGY RX600 S6
- PRIMERGY RX2520 M1
- PRIMERGY RX2530 M1
- PRIMERGY RX2530 M2
- PRIMERGY RX2540 M1
- PRIMERGY RX2540 M2
- PRIMERGY RX4770 M1
- PRIMERGY RX4770 M2

Perform the following procedure before setting network parameters through cloning image collection.

It is not necessary to execute it again on managed servers on which this procedure has already been executed.

1. Make a note of the current network settings.

The network settings of managed servers may be changed when step 2 is performed.

2. Execute Sysprep on the managed server.

Refer to the manual of the OS for the method of starting Sysprep.

Specify the following options when executing Sysprep.

[System Cleanup Action]

- Select "Enter System Out-of-Box Experience (OOBE)".
- Check the "Generalize" checkbox.

[Shutdown Option]

- Select "Reboot"

3. After Sysprep is executed, the OS of the managed server is rebooted, and then Mini setup of the OS is executed.

Configure the OS following the instructions on the screen.

4. Restore the network settings of the managed server referring to the information recorded in step 1.

[Linux]

When using LAN redundancy, cancel any network redundancy settings that were made on managed servers using PRIMECLUSTER Global Link Services before deploying new servers.

If not canceled, deployment commands may fail when deploying new servers.

Once the deployment of new servers has completed, redundancy network configurations (for the admin LAN or other networks) that are not handled by the network parameter auto-configuration feature should be set up manually.

PRIMECLUSTER Global Link Services cannot be used to enable admin LAN redundancy on servers running SUSE Linux Enterprise Server or Oracle Enterprise Linux operating systems.



Setup Procedure

Use the following procedure to set up network parameters for a public LAN:

Using a specific managed server (reference server) to collect and update cloning images is recommended in order to centrally manage the network parameters definition files.

When the OS is RHEL7, the interface name of the NIC differs depending on the environment. For this reason, replace the interface name described in this document (ethX) with the appropriate name according to your environment. Also, replace the file name of ifcfg-ethX with the appropriate name according to your environment.

1. Definition File Settings

This section explains how to setup the following definition files.

- FJSVrcx.conf
- ipaddr.conf

Create those definition files under the following folder on the reference server:

[Windows]

Installation_folder\Agent\etc\FJSVrcx.conf

Installation_folder\Agent\etc\ipaddr.conf

[Linux]

/etc/FJSVrcx.conf

/etc/opt/FJSVnrmpl/lan/ipaddr.conf

Sample configuration of the definition file (FJSVrcx.conf)

```
admin_LAN=192.168.1.11
hostname=node-A
```

- admin_LAN

Enter the IP address used by the reference server on the admin LAN.

- hostname

Enter the physical server name of the reference server.

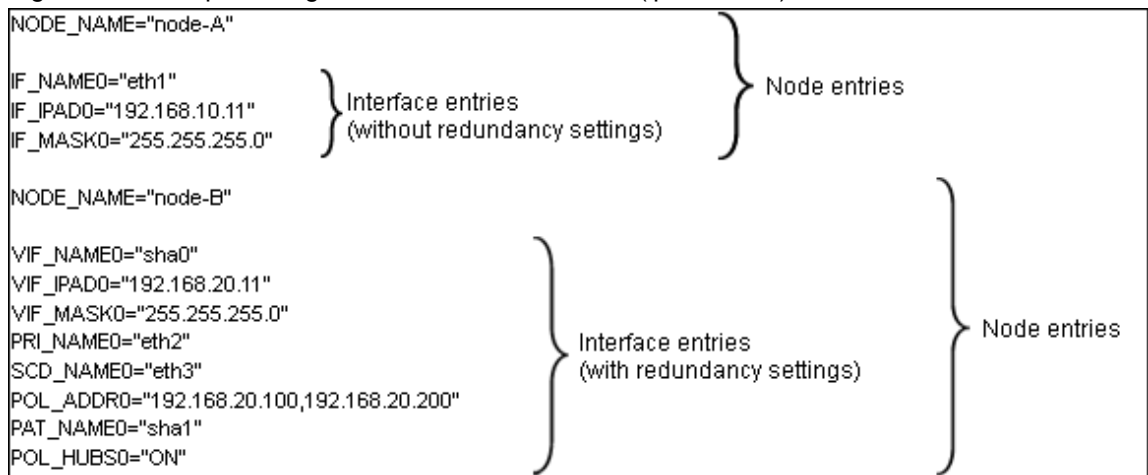
Format of the definition file (ipaddr.conf)

The definition file is made up of the following entries:

- One or more node entries
- One or more interface entries (with or without redundancy) under each node entry

Figure 17.3 Sample configuration of the definition file (ipaddr.conf)

```
NODE_NAME="node-A"
IF_NAME0="eth1"
IF_IPAD0="192.168.10.11"
IF_MASK0="255.255.255.0"
NODE_NAME="node-B"
VIF_NAME0="sha0"
VIF_IPAD0="192.168.20.11"
VIF_MASK0="255.255.255.0"
PRI_NAME0="eth2"
SCD_NAME0="eth3"
POL_ADDR0="192.168.20.100,192.168.20.200"
PAT_NAME0="sha1"
POL_HUBS0="ON"
```



Refer to the following sample file for details of how to set the definition file (ipaddr.conf).

[Windows]
Installation_folder\Agent\etc\ipaddr.sample

[Linux]
/etc/opt/FJSVnrmp/lan/ipaddr.sample

Note

Blank spaces and comment lines (lines starting with a comment symbol (#) are ignored.

The expected content of each entry is explained below.

- Node Entries

The following table explains how to define each node entry.

Table 17.3 Node Entry Settings

Setting	Keyword	Expected Values:	Description
Managed server name	NODE_NAME	Physical server name	Physical server name that was set when registering the managed server.

Note

Specify additional entries for any node (server) that may be added in the future (one entry per server).

- Interface Entries (without Redundancy)

The following table explains how to define each interface entry.

Keywords for interface entries should be appended with a number between 0 and 99.

If you want to configure a VLAN interface, add "VLAN=yes" to the */etc/sysconfig/network* file.

Note

The number appended to each entry's keyword should start with 0 and increase incrementally.

Table 17.4 Interface Entry Settings (without Redundancy)

Setting	Keyword	Expected Values:	Description
Interface name	IF_NAME	Interface name	Specify the interface name as displayed by the operating system. (*) Example [Windows] Local area connection 2 [Linux] eth X (where X is an integer equal to or greater than 0)
IP address	IF_IPAD	IP address in xxx.xxx.xxx.xxx format	-
Subnet mask	IF_MASK	Subnet mask in xxx.xxx.xxx.xxx format	-

* Note: As Windows allows interface names to be changed, ensure that the names defined here match those displayed in Windows.

- Interface entries (with redundancy) [Linux]

The following table explains how to define each interface entry.

Keywords for interface entries should be appended with a number between 0 and 99.

This setting uses the "NIC switching mode (Physical IP address takeover function)" of the PRIMECLUSTER Global Link Services product, which requires a virtual interface set with its own IP address.

Within a same node entry, it is possible to define interface entries both with and without redundancy settings as long as interface names differ.

If you want to configure a VLAN interface, add "VLAN=yes" to the /etc/sysconfig/network file.

 **Note**

The number appended to each entry's keyword (including both entries with and without redundancy settings) should start with 0 and increase incrementally.

When there is a mixture of interfaces with and without redundancy, assign values in ascending order to the interfaces without redundancy as well.

Interface entries with redundancy settings are only activated with Linux. With Windows, these interface entries will be ignored.

Table 17.5 Interface Entry Settings (with Redundancy)

Setting	Keyword	Expected Values:	Description
PRIMECLUSTER GLS virtual interface name	VIF_NAME	shaX	X is an integer between 0 and 255.
IP address specified for virtual interface	VIF_IPAD	IP address in xxx.xxx.xxx.xxx format	-
Subnet mask	VIF_MASK	Subnet mask in xxx.xxx.xxx.xxx format	-
Name of primary interface	PRI_NAME	Interface name (ethX)	X is an integer equal to or greater than 0. This setting specifies the primary interface name when a pair of interface names exists. <Example> eth2
Name of secondary interface	SCD_NAME	Interface name (eth Y)	Y is an integer equal to or greater than 0. This setting specifies the secondary interface name when a pair of interface names exists. <Example> eth3
IP address of monitored destination	POL_ADDR	IP address in xxx.xxx.xxx.xxx format	Up to two IP addresses can be specified, separated by a comma. When hub-to-hub monitoring is to be performed, specify two monitored destinations. Hub-to-hub monitoring will not be performed if only one destination is specified. In this case, the value specified in

Setting	Keyword	Expected Values:	Description
			POL_HUBS (whether to perform hub-to-hub monitoring) will not be referenced.
Virtual interface name for standby patrol	PAT_NAME	sha Y	Y is an integer between 0 and 255. Specify a name that is different from the virtual interface name. Do not set anything unless standby patrolling is set.
Hub-to-hub monitoring ON/OFF	POL_HUBS	ON/OFF	Specify "ON" to enable hub-to-hub monitoring, or "OFF" otherwise. This setting is valid only if two monitoring destinations are specified. If only one monitoring destination is specified, this setting is disabled (set to "OFF").

Refer to the PRIMECLUSTER Global Link Services manual for details on each setting.

2. Enable the Network Parameter Auto-Configuration Function

Enable the network parameter auto-configuration function by executing the following command.

Execute this command from a managed server.

[Windows]

```
>"Installation_folder\Agent\bin\rxadm" lanctl enable <RETURN>
```

[Linux]

```
# /opt/FJSVrcxat/bin/rxadm lanctl enable <RETURN>
```

For details on the command, refer to "5.9 rxadm lanctl" in the "Reference Guide (Command) VE".

17.6.1 Operation Checks and Preparations

Use the following procedure to actually apply the definition file's settings on the reference server and prepare a cloning image to be used for further server deployments. The definition file's settings applied from the definition file should be validated before image collection by checking the reference server's behavior and configuration.

1. Manually Execute the Network Parameter Setup Command

Execute the network parameter configuration command on the reference server holding the prepared definition file and check that the defined settings are applied correctly.

Executing the Command

Before collecting the cloning image, run the following command to apply the definition file and verify that the defined settings are actually reflected on the reference server. This command also activates network parameter auto-configuration for any cloning image subsequently collected. Once this command has been executed, the network configuration that was described in the definition file will be performed automatically.

[Windows]

```
>"Installation_folder\Agent\bin\rxadm" lanctl set <RETURN>
```

[Linux]

```
# /opt/FJSVrcxat/bin/rxadm lanctl set<RETURN>
```

For details on the command, refer to "5.9 rxadm lanctl" in the "Reference Guide (Command) VE".

Validating settings (without LAN redundancy)

Use a command provided by the operating system (ipconfig for Windows and ifconfig for Linux) to confirm that network interface settings (without redundancy) were correctly applied.

Validating settings (with LAN redundancy) [Linux]

Use the following commands to confirm that network interface settings (with redundancy) were correctly applied.

- Using the `/opt/FJSVhanet/usr/sbin/dsphanet` Command

```
# /opt/FJSVhanet/usr/sbin/dsphanet <RETURN>
[IPv4,Patrol]
Name      Status   Mode CL   Device
+-----+-----+-----+-----+-----+
sha0      Active  e   OFF  eth0(ON),eth1(OFF)
sha2      Active  p   OFF  sha0(ON)
sha1      Active  e   OFF  eth2(ON),eth3(OFF)
[IPv6]
Name      Status   Mode CL   Device
+-----+-----+-----+-----+-----+
```

Items to confirm

- The status of the virtual interface must be "Active".
- When the standby patrol function is used ("p" mode), the status of the virtual interface set in standby patrol ("sha2" in the output example above) must be "Active".
- Using the `/opt/FJSVhanet/usr/sbin/dsppoll` Command

```
# /opt/FJSVhanet/usr/sbin/dsppoll <RETURN>

Polling Status   = ON
interval(idle)  = 5( 60)
times           = 5
repair_time     = 5
link detection   = NO
FAILOVER Status = YES

Status Name Mode Primary Target/Secondary Target HUB-HUB
+-----+-----+-----+-----+-----+-----+
ON sha0 e 192.168.1.101(ON)/192.168.1.102(WAIT) ACTIVE
ON sha1 e 192.168.1.101(ON)/192.168.1.102(WAIT) ACTIVE
```

Items to confirm

- The monitoring status (Polling Status) must be "ON" (monitoring in progress)
- If one monitoring destination is specified, the status of that destination (Primary Target) must be "ON" (monitoring in progress)
- If two monitoring destinations are specified, the status of the primary destination (Primary Target) must be "ON" (monitoring in progress) and the status of the secondary destination (Secondary Target) must be "WAIT" (on standby)
- When HUB-HUB monitoring is set to "ON", the status (HUB-HUB) must be "ACTIVE" (monitoring in progress)

If the interface settings have not been configured correctly, clear the settings using the `rcxadm lanctl unset` command, and then correct the definition file before executing the `rcxadm lanctl set` command again.

If anything (including user-defined checks) does not turn out as expected even though the settings were applied correctly, check the network connections and the monitoring target, and take appropriate action.

Another test is to either deactivate the port on the LAN switch blade corresponding to the network interface where communications are actually being performed, or disconnect the cable from an external port on the LAN switch blade, to check whether the spare network interface automatically takes over communication. If the standby patrol function is enabled, check the port status or check that the status of the standby network interface changes to "WAIT" after reconnecting the cable.

2. Collect a Cloning Image

Collect a cloning image from the managed server checked in step 1.

For details on how to collect cloning images, refer to "[17.2 Collecting](#)".



[Linux]

When a cloning image is collected, any LAN redundancy settings on managed servers are canceled, and only network parameters for the defined public LAN are set up again when collection completes.

If LAN redundancy has been manually set up, set the LAN redundancy settings again manually.

17.6.2 Maintenance

If the network parameter auto-configuration function fails, an error message is output together with error details to the following file:

[Windows]

Installation_folder\Agent\var\log\error_lan.log

[Linux]

/var/opt/FJSVnrmp/logs/error_lan.log

For details on meanings of message and the appropriate corrective actions, refer to "Messages".

The file size limit is 32 KB and only one version is maintained. Old logs will have the extension ".old" appended to the file name and remain in the same directory.

17.6.3 Clearing Settings

This section explains how to disable the network parameter auto-configuration function and clear the settings that were applied.

Disabling the Network Parameter Auto-Configuration Function

The network parameter auto-configuration function of the cloning image being collected can be disabled by executing the following command.

After disabling it, collect a new cloning image to update the existing image.

[Windows]

```
>"Installation_folder\Agent\bin\rxadm" lanctl disable <RETURN>
```

[Linux]

```
# /opt/FJSVrcxat/bin/rxadm lanctl disable <RETURN>
```

Clearing Network Parameter Settings

If network settings must be added or changed due to the addition of a new server, first clear the existing settings. Clear the network parameter settings of managed server by executing the following command:

[Windows]

```
>"Installation_folder\Agent\bin\rxadm" lanctl unset <RETURN>
```

[Linux]

```
# /opt/FJSVrcxat/bin/rxadm lanctl unset <RETURN>
```

For details on the command, refer to "5.9 rxadm lanctl" in the "Reference Guide (Command) VE".



[Physical Servers]

Network parameter settings for interfaces not designated in the definition file cannot be released.

[Linux]

When this command is executed, any LAN redundancy settings for managed servers are unset. If LAN redundancy has been set up for the admin LAN, set the LAN redundancy settings again manually.

17.6.4 Modifying the Operating Environment

Use the following procedures to modify the operating environment.

Deploying New Managed Servers with Automated Public LAN Configuration

Use the following procedure to add new managed servers and automate their public LAN settings using the network parameter auto-configuration function:

1. Register the newly added servers.
2. Perform the following procedure on a reference server chosen between already running servers:
 - a. Clearing Network Parameter Settings
Execute the `rcxadm lanctl unset` command to clear the network parameters configuration.
 - b. Editing the definition file
Set up a node entry in the definition file (`ipaddr.conf`) with the server name, interface entries, and other information for the server to be added.
 - c. Manually execute network parameter settings
Execute the `rcxadm lanctl set` command to apply the network parameters and ensure that the resulted configuration (induced from the definition file) is correct.
 - d. Collect the cloning image again.
3. Deploy the collected cloning image to the newly added servers.

Modifying Managed Server Settings

If network settings must be modified due to the addition or removal a public LAN, or a change of IP address, perform the following on an arbitrary reference server (chosen between already running servers).

1. Execute the `rcxadm lanctl unset` command to clear the network parameters configuration.
2. Edit the definition file to add, modify, or delete network parameters.
3. Execute the `rcxadm lanctl set` command to apply the network parameters and ensure that the resulted configuration (induced from the definition file) is correct.
4. Collect a new cloning image from the reference server.

Chapter 18 Settings for Server Switchover

This chapter explains how to use server switchover settings and automatically recover from server failures.

18.1 Status Display

Current recovery settings can be confirmed by selecting a physical OS or VM host in the server resource tree of the ROR console and from the spare server settings displayed in the [Resource Details] tab.

The following information is displayed:

Primary server

Displays the name of the physical server that will be replaced when server switchover occurs.

Active server

Displays the name of the physical server that is currently running.

Server switchover method

Displays the specified server switchover method.

Automatic server recovery

Shows whether automatic server recovery is enabled or not.

Network switchover

Shows whether network settings will be automatically adjusted during server switchover.

Spare server

Displays the name of the physical server that will replace the current active server when server switchover occurs.

More than one spare server will be displayed if more than one has been specified.

[OVM for SPARC]

For OVM for SPARC environments, the save status of the XML file for OVM configuration information can be confirmed from the VM host information on the [Resource Details] tab.

For details, refer to "OVM Configuration Information's XML Saving Status" for VM host information in "[A.6.3 Physical OS, VM Host, and VM Guest Attributes](#)".

18.2 Settings for Server Switchover

Use the following procedure to configure server switchover settings:

When using local disks as system disks, and iSCSI storage as data disks, refer to the advisory notes described in "Table: Supported Storage Configurations" in "8.1.1 Storage Configuration" in the "Design Guide VE".

1. In the ROR console server resource tree, right-click a server (or a physical OS or VM host on the server) and select [Modify]-[Spare Server Settings] from the popup menu.

The [Spare Server Settings] dialog is displayed.

2. Set the following items:

Spare server

From the spare server list, select the checkbox in the [Select] column of the server that is to be used as the spare server.

One or more spare servers can be specified, including spare servers from different chassis.

If more than one is specified, an unused spare server will be selected from the list of available candidates when a server switchover occurs.

Information

For SPARC Enterprise servers or Fujitsu M10, only the storage affinity switchover method can be selected. In the storage affinity switchover method, configuration of WWN information is necessary. For how to configure WWN information, refer to "[10.1 Configuring WWN Settings for ETERNUS SF Storage Cruiser Integration](#)".

When using the storage affinity switchover method, it is necessary to configure the target CA so that it matches the WWPN value in the access path settings of the primary server.

Servers that have agents registered can be used as spare servers. When using a server on which an agent is registered as a spare server, the server must meet one of the following conditions:

- When the AffinityGroup value is different from the value of the primary server
- When agents are not registered on ETERNUS SF Storage Cruiser

ETERNUS SF Storage Cruiser cannot perform event monitoring of spare servers. For details on event monitoring, refer to the "ETERNUS SF Storage Cruiser Event Guide".

In server configurations using I/O virtualization, servers on which server OSs are operating can be used for spare servers.

- Register the agent
- I/O virtualization
- Server switchover settings

To change a server with the above settings, which does not use I/O virtualization, to a spare server, delete the server and then re-register it. Note that if the server is registered while it is running, an agent will be registered automatically. For this reason, it should be registered while it is stopped.

To delete a spare server that has been added, refer to "[18.4 Canceling Server Switchover Settings](#)".

When using the storage affinity switchover method, after switchover to spare servers, if failback is performed the storage settings for spare servers will be deleted. For how to restore storage settings, refer to "4.2 Switchover" and "4.3 Post-Switchover Operations" in the "Operation Guide VE".

[Local-boot with SAN data (Backup and restore method)] checkbox

This checkbox is available only if the WWN of the servers selected from the server resource tree are being virtualized using HBA address rename or VIOM.

The checkbox is unavailable if the WWN is not being virtualized or boot configuration is set for a VIOM server profile.

Select this option for servers that boot from a local disk while using SAN storage to store data. If selected, spare server(s) will also be able to boot locally and access the same SAN storage data space after a switchover.

Do not select this option for servers that boot from a SAN disk.

[Apply network settings when the server is switched over] checkbox

Select this option to enable automatic adjustment of VLAN ID or port group settings during a server switchover. If selected, the internal LAN switch ports connected to the spare server will be set with the same VLAN settings as those of the ports connected to the primary server.

This option is selected by default.

This feature is available only for PRIMERGY BX blade servers.

When VIOM is used, it is available only when a LAN switch is in switch mode or end-host mode.

Note

- Do not select this option if VLAN settings are to be manually adjusted from the LAN switch's management interface (either graphical or command-line interface).
- Do not select this option for internal ports of LAN switches when Automatic Migration of Port Profile (AMPP) has been configured.
- For LAN switch blades operating in Converged Fabric mode or a LAN switch blade PY CB 10Gb FEX Nexus B22, VLAN settings on LAN switches are not configured even if this checkbox is checked.

[Automatically switch over when a server fault is detected] checkbox

Select this option to enable Auto-Recovery.

Server failures are detected when the server's status changes to [error] or [fatal] and its operating system stops functioning.

Do not select this option if primary servers are to be manually switched over.

This option is selected by default.

[Power off forced when the server is switched over] checkbox

Check this checkbox if the spare server is to be turned off forcibly when the spare server is started before switchover takes place.

When shutting down the spare server, clear this checkbox.

This option is not selected by default.

[Switchover to server where VM guest exists] checkbox

When a spare server is a VM host, check this checkbox if switching to a spare server in which the VM host contains a VM guest.

When not switching to a VM host which contains a VM guest, clear this checkbox.

This option is not selected by default.

When the server role "Manager" has been set for a VM guest, it will be excluded from the spare servers even though this checkbox is checked.

3. Click the [OK] button.

The server switchover settings are configured.

4. Set the boot agent for the spare server.

If the primary server is configured as follows in a local boot environment, execute the following command on all servers that have been set as spare servers.

- When using the ext4 file system of the Red Hat Enterprise Linux 6 or Red Hat Enterprise Linux 7 on a rack mount server or a tower server, and the server is registered with "Disable" selected for "Association with management software (ServerView)"

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe  
<RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

- In a SAN boot environment using HBA address rename, and the following model
 - PRIMERGY BX960 S1

[Windows Manager]

```
>Installation_folder\SVROR\Manager\bin\rxadm server set -name physical server -attr bootagt=winpe  
<RETURN>
```

[Linux Manager]

```
#!/opt/FJSVrcvmr/bin/rxadm server set -name physical server -attr bootagt=winpe <RETURN>
```

5. Configure the target disk of image operations on the spare server.

If the primary server is a local boot environment with the following configuration, configure the target disk of image operations.

- For a local boot and SAN data environment

For the configuration procedure, refer to "[9.1.13 Changing Target Disks of Image Operations](#)".

Point

The conditions specified in "9.3 Server Switchover Conditions" in the "Setup Guide VE" must be satisfied for server switchover to be executed correctly.

Once settings are complete, perform switchover and failback on each spare server that has been set up to verify that these operations can be executed correctly.

A function to check the server operations after auto-recovery has been activated (by causing a dummy failure to occur) is not provided with Resource Orchestrator.

The testing method for automatic server recovery is the same as for manual server switchover. Make sure the server is operational by performing the manual server switchover test.

For details on switchover and failback methods, refer to "Chapter 4 Server Switchover" in the "Operation Guide VE".

Note

For servers other than those using I/O virtualization and those with WWN settings registered, the following checks will not be enabled.

- [Power off forced when the server is switched over] checkbox
 - [Switchover to server where VM guest exists] checkbox
-

[VMware] [Hyper-V] [Xen] [Citrix Xen] [KVM] [Solaris Zones] [OVM for x86 3.x] [OVM for SPARC]

The automatic startup of VM guests after the switchover of their VM host depends on their virtual machines' startup configuration within the server virtualization software used.

For details, refer to the manual of server virtualization software.

Depending on the server virtualization product used, a newly created VM guest may require some reconfiguration before running a server switchover.

Refer to "9.2.1 Configuration Requirements" in the "Design Guide VE" for details on such settings.

[Solaris] [Solaris Zones]

When a ZFS storage pool is used in a Solaris or Solaris Zone environment, it may be necessary to create a definition file.

For details, refer to "[18.5.1 ZFS Storage Pool Definition Files \[Solaris\] \[Solaris Zones\]](#)" and "[18.5.2 ZFS Storage Pool Definition Files \[Solaris\] \[Solaris Zones\] \[OVM for SPARC\]](#)".

[OVM for SPARC]

It may be necessary to create setting and definition files in OVM for SPARC environments.

For details, refer to "[18.5 Definition Files for Server Switchover](#)".

18.3 Changing Server Switchover Settings

The procedure used to change server switchover settings is the same as that described in "[18.2 Settings for Server Switchover](#)".

For details, refer to "[Chapter 18 Settings for Server Switchover](#)".

18.4 Canceling Server Switchover Settings

Use the following procedure to cancel server switchover settings.

1. In the ROR console server resource tree, right-click a server (or a physical OS or VM host on the server) and select [Modify]-[Spare Server Settings] from the popup menu.

The [Spare Server Settings] dialog is displayed.

2. Clear the checkbox in the [Select] column for the desired spare server.
3. Click the [OK] button.

The selected spare server is no longer set as a spare server.

18.5 Definition Files for Server Switchover

This section explains definition files for server switchover.

18.5.1 ZFS Storage Pool Definition Files [Solaris] [Solaris Zones]

When a Solaris Zone environment is configured and a zone is created in the ZFS storage pool, the status of the ZFS storage pool to be imported to the switchover destination server after server switchover and the zone on the ZFS storage pool can be changed.

When changing the status, create the following definition files:

Use the `zpool` command to check ZFS storage pools.

Use the `zoneadm` command to check zones.

For details, refer to the manuals provided by Oracle.

Storage Location of the Definition File

[Windows Manager]

Installation_folder\SVROR\Manager\etc\customize_data

[Linux Manager]

/etc/opt/FJSVrcvnr/customize_data

Definition File Name

`zpool_and_zone_recovery.rcxprop`

Definition File Format

Describe the definition file as below:

1. Enter the admin IP address of the switchover source server for `ADMIN_IP` key value.
2. Insert a line break, and enter the ZFS storage pool on the server and the zone in the ZFS storage pool, separated by commas (",").

If it is not necessary to boot the zone, the zone specification can be omitted.

When specifying two or more ZFS storage pools, enter the pools in separate lines using line breaks.

Until the following is specified, everything will be considered the ZFS storage pool and the zone of the server described in the `ADMIN_IP` key value.

- Another `ADMIN_IP` key
- End of the file

The format of each line is given below:

```
ADMIN_IP=failover_admin_ip  
zfs_storage_pool[,zone_name,zone_name2]
```

- Blank spaces before and after commas (",") are ignored.
- When adding comments, start the line with a number sign ("#").

Definition File Items

Specify the following items.

`failover_admin_ip`

Enter the admin IP address of the switchover source server.

`zfs_storage_pool`

Enter the name of the ZFS storage to import to the switchover destination server

`zone_name`

Enter the zone on the ZFS storage. When specifying multiple zones, separate them with commas (",").

Example

```
ADMIN_IP=192.168.10.123
pool-1,zone1,zone2
pool-2,zone3,zone4,zone5

ADMIN_IP=192.168.10.124
pool-3,zone1,zone5
pool-4
```

Change Procedure for Definition Files

Create a definition file when necessary, before server switchover.
It is not necessary to restart the manager.

Note

This definition file is valid only when the server is registered as a physical OS or a VM host in a Solaris zone. It is invalid when the guest domain of a server which has been registered as an OVM for SPARC VM host is registered as a VM host in the Solaris zone.

When there are no definition files, after server switchover, all ZFS storage pools of the server switchover source are imported, and the zones can be used.

When there are definition files, only the ZFS storage pools and the zones of the switchover source server described in the definition files are restored.

When importing ZFS storage pools which are not specified in the definition files after server switchover, execute the `zpool` command on the server after the switchover.

Execute "attach" and "boot" using the `zoneadm` command to enable use of the zones on the ZFS storage pools after import.

For details, refer to the manuals provided by Oracle.

18.5.2 ZFS Storage Pool Definition Files [Solaris] [Solaris Zones] [OVM for SPARC]

When server switchover is performed, the ZFS storage pool is placed in the exported status. When using a ZFS storage pool in Solaris, Solaris Zones, or each domain of OVM for SPARC, it is necessary to create definition file of ZFS storage pool information in order to import the ZFS storage pool. For domains using ZFS storage pools, install a Resource Orchestrator agent and then store the definition file.

For domains not using ZFS storage pools it is not necessary to create a definition file.

Information

- When the `zpool_info` file is stored in a Solaris or Solaris Zone environment of a managed server, storing the `zpool_and_zone_recovery.rcxprop` file in the manager does not enable it.
The ZFS storage pool is imported according to the definition in the `zpool_info` file.
- It is also necessary to create this file when a guest domain of a server which is registered as an OVM for SPARC VM host is registered as a VM host in the Solaris zone and then a ZFS storage pool is used on that guest domain.

Storage Location of the Definition File

[Solaris]
`/etc/opt/FJSVrcvat/config`

Definition File Name

`zpool_info`

Definition File Format

Describe the definition file as below:

```
File permissions: 644
```

Enter the name of the ZFS storage pool imported into the domain, or the guid of the ZFS storage pool. When there is more than one item, enter one item in each line.

Example

```
ZFS_pool_1
ZFS_pool_2
13230972464300563126
```

Change Procedure for Definition Files

Create a definition file for each domain that uses a ZFS storage pool.
It is not necessary to restart the agent.

Information

- Blank spaces before and after the values are ignored.
- When adding a comment, start the line with a number sign ("#").
- When creating ZFS storage pools which have same name on the control domain and guest domain, specify the guid of each ZFS storage pool.
- It is not necessary to specify rpool, which is created by default during OS installation.

18.5.3 Definition File of IO Domain

It is possible to start the IO domain before the guest domain after server switchover, by creating a definition file that specifies the IO domain.

When not using IO domains, it is not necessary to create a definition file.

Point

The startup order of a control domain, IO domain, and guest domain is not guaranteed by the OVM for SPARC specifications. Therefore, if this definition file is not created, the guest domain will be started before the IO domain and there is a chance that starting of the IO domain will fail.

Storage Location of the Definition File

```
[Windows Manager]
Installation_folder\SVROR\Manager\etc\customize_data
```

```
[Linux Manager]
/etc/opt/FJSVrcvmr/customize_data
```

Definition File Name

```
ovm_iodomain_poweron.rcxprop
```

Definition File Format

Describe the definition file as below:

1. Enter the admin IP address of the control domain of the switchover source server for the ADMIN_IP key value and insert a line break.
2. Type the IO domain names of the server in the desired startup order, separating with line breaks.

IO domains will start in the order specified in the definition file.

Until the following is stated, the IO domains are regarded as the IO domains of the server specified for the ADMIN_IP key:

- Another ADMIN_IP key
- End of the file

Example

```
ADMIN_IP=192.168.10.123
A-IOdomain
ADMIN_IP=192.168.10.124
B-IOdomain
C-IOdomain
```

Change Procedure for Definition Files

Create a definition file when necessary, before server switchover.
It is not necessary to restart the manager.

Information

- Blank spaces before and after the values are ignored.
- When adding a comment, start the line with a number sign ("#").

18.5.4 XML File of OVM Configuration Information

It is necessary to save the OVM configuration information in XML format before performing server switchover in an OVM for SPARC environment. It can be saved from the GUI, the CLI or automatically.

For details on the save status of OVM configuration information in XML files, refer to "[18.1 Status Display](#)".

OVM configuration information XML files are stored in the following location on the control domain:

File Storage Location

```
[Control domain]
/etc/opt/FJSVrcvat/config
```

Definition File Name

```
ovm_config.xml
```

Note

Saving the OVM configuration information in the XML format can only be performed for the primary server. When using a spare server as an OVM for SPARC environment, the saving of XML files is possible, but incomplete configuration during the switchover process is overwritten.

Therefore, the resulting XML file cannot be used for recovery of the spare server.

Use the `ldm list-constraints` command to save the OVM configuration information of spare servers.

For details, refer to the "Oracle VM Server for SPARC Administration Guide".



OVM configuration information can be saved as an XML file when both of the following conditions are met:

- The server is powered on
- The server status is "normal"

18.5.4.1 Saving from the GUI

OVM configuration information can be saved using the GUI.

1. In the server tree of the ROR console, right-click a VM host in the target control domain, and select [Save OVM Configuration Information XML] from the displayed menu.

Save the OVM configuration information as an XML file in the control domain.
The OVM configuration information is not saved to the service processor.

18.5.4.2 Saving from the CLI

OVM configuration information can be saved using the CLI.

Execute the `rcxadm server backup` command to save the OVM configuration information to the control domain as an XML file.
The OVM configuration information is not saved to the service processor.

For details on the command, refer to "3.4 `rcxadm server`" in the "Reference Guide (Command) VE".

18.5.4.3 Automatic Saving

OVM configuration information is saved at the following timings:

Automatic saving performs both saving of OVM configuration information to the service processor and saving of the XML file to the control domain.

- When the following operations are performed from Resource Orchestrator
 - Power control operations (Power ON/ Power OFF/ Forced power OFF /Reboot/ Forced Reboot) of VM Guests
 - Migration of VM Guests between servers
- When the following operations are performed for a guest domain on a control domain
 - Creation/deletion of guest domains
 - bind/unbind operations of resources
 - stopping/starting of guest domains
 - Changing of the number of virtual CPUs and memory size
 - Attaching/detaching of virtual disks
 - Migration of guest domains



As a time lag of several minutes occurs during saving of OVM configuration information, do not perform server switchover immediately after performing the above operations.

The saving status of OVM configuration information can be confirmed from Resource Details.
For details, refer to "[A.6.3 Physical OS, VM Host, and VM Guest Attributes](#)".

Chapter 19 Collecting Power Consumption Data and Displaying Graphs

This chapter explains how to export the power consumption data collected from registered power monitoring targets and how to display it as graphs, and also describes the exported data's format.

19.1 Exporting Power Consumption Data

This section explains how to export power consumption data.

The power consumption data for each power monitoring target that is registered in the power monitoring environment can be exported in CSV format.

The exported data can be selected by specifying the desired data types (power and energy), time spans, and sampling rate.

Use the following procedure to export power consumption data.

1. In the ROR console server resource tree, right-click a power monitoring target, and select [Export]-[Environmental Data] from the popup menu.

The [Export Environmental Data (*power_monitoring_target*)] dialog is displayed.

2. Set the following items:

Figure 19.1 [Export Environmental Data (*power_monitoring_target*)] Dialog

Choose the type and period of environmental data that will be exported.

Target Resources

Select	Device Name	Comments
<input checked="" type="checkbox"/>	ups	

Data Type

Select	Data Type	Unit	Description
<input checked="" type="checkbox"/>	Power	W	Instantaneous power consumption
<input type="checkbox"/>	Average power	W	Average power consumption during the selected time span
<input type="checkbox"/>	Energy	Wh	Total energy consumption during the selected time span

Output time span: Last hour

Rate: Finest sampling

Format: CSV

OK Cancel Help

Target Resources

Specify the power monitoring target to export the power consumption data of.
Select the checkboxes of each desired target. More than one target can be selected.

Data Type

Specify the type of data to export.
Check the checkbox of each desired data type. More than one data type can be selected.

Output time span

Select the time span for which to export data from the drop-down menu.
Select one of the following options:

- Last hour
- Last day
- Last week
- Last month
- Last year
- Custom

When "Custom" is selected, the following fields must all be specified:

- Start day
- Start time
- End day
- End time

Rate

Select the data sampling rate to export from the drop-down menu.

Select one of the following options:

- Finest sampling
- Hourly
- Daily
- Monthly
- Annual

3. Click [OK].

In the download dialog that is displayed, specify the name of the export file. The data will be exported to the specified file.

Note

Exporting large amounts of data will take time.

The operation will fail when it takes over five minutes.

If the operation fails, as processing on the server may not have finished, wait for a while before performing the operation again. In that case, change the settings of "Target Resources" and "Output time span" to reduce the amount of data output.

The recommended export settings for environmental data are as listed below.

Table 19.1 Recommended Export Settings

Rate	Output time span	Output device count
Finest sampling	Last day	12
Hourly	Last month	30

Rate	Output time span	Output device count
Daily	Last year	30
Monthly	Select "Custom" and specify 5 years	60
Annual	Select "Custom" and specify 5 years	60

19.2 Displaying Power Consumption Data Graphs

This section explains how to display power consumption data as graphs.

The power consumption data for each power monitoring target that is registered in the power monitoring environment can be displayed as graphs.

The collected power consumption data and average values of the specified time span and rate can be displayed in line graphs.

Use the following procedure to display power consumption data as graphs.

1. Select [Tools]-[Environmental Data Graph] from the ROR console menu.

The [Environmental Data Graph] dialog is displayed.




2. Set the following items:

Figure 19.2 [Environmental Data Graph] Dialog

Environmental Data Graph

Choose the desired resources and output time.
Up to 18 resources can be selected.

Target Resources

 Chassis
  Server
  Power Monitoring Device

Select	Resource Name	Resource Type
<input type="checkbox"/>	bx900	Chassis
<input type="checkbox"/>	bx900-2	Server
<input type="checkbox"/>	bx900-3	Server
<input type="checkbox"/>	bx900-4	Server
<input type="checkbox"/>	bx900-6	Server
<input type="checkbox"/>	bx900-7	Server
<input type="checkbox"/>	bx900-8	Server
<input type="checkbox"/>	bx900-9	Server
<input type="checkbox"/>	bx900-10	Server

Graph Settings

Data Type: Power (Instantaneous power consumption)
 Average power (Average power consumption during the selected time span)

Output Time Span: Last hour ▼

Rate: Finest sampling ▼

Graph Output
Help

Target Resources

Specify the power monitoring target name to display the power consumption data graph of.
Select the checkboxes of each desired target.
Up to 18 targets can be selected.

Graph Settings

Data Type

Specify the type of data to display the graph.
Specify either one of the following for the data type:

- Power (Instantaneous power consumption)
- Average power (Average power consumption during the selected time span)

Output Time Span

Select the time span for the data from the drop-down menu.

Select one of the following options:

- Last hour
- Last day
- Last week
- Last month
- Last year
- Custom

When "Custom" is selected, the following fields must all be specified:

- Start day
- Start time
- End day
- End time

Rate

Select the graph output interval to export from the drop-down menu.

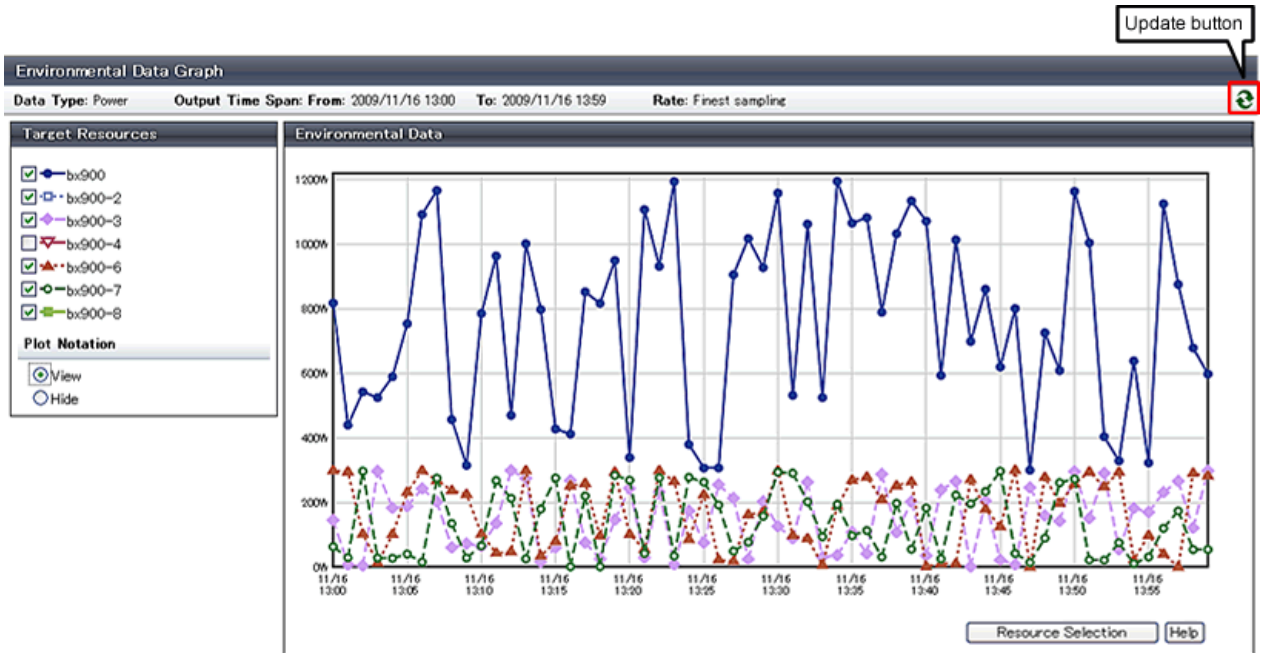
Select one of the following options:

- Finest sampling
- Hourly
- Daily
- Monthly
- Annual

3. Click [Graph Output].

After switching to the graph display window, the selected power consumption data can be displayed in line graphs.

Figure 19.3 Graph Display Window



The following operations can be performed from the graph display window.

- Switching resource display

By selecting and clearing the checkbox of the [Target Resources], it is possible to display or hide the corresponding graph.

- Switching plot symbol display

Selecting the [View] or [Hide] radio button of [Plot Notation] switches between displaying and hiding plot symbols in line graphs.

- Data update

Clicking the update button on the upper right of the screen updates the displayed graph.

- Return to resource selection window.

Clicking [Resource Selection] displays the [Environmental Data Graph] dialog.

Note

If you change the size of the web browser when displaying graphs, click the update button after doing so.

Chapter 20 Network Device Operations

This chapter explains how to operate network devices.

20.1 Switchover of Maintenance Mode

Set maintenance mode when performing regular maintenance of network devices. When a network device is in maintenance mode, error notifications upon changing of the operational status and execution of auto-configuration are suppressed on that device.

Perform the following operations to configure or release the maintenance mode settings of network devices.

- Configuring Maintenance Mode

Network devices are put into maintenance mode in the following cases:

- When the has performed an operation from the ROR console which configures maintenance mode for a network device
 1. Right-click the target network device in the network device tree on the ROR console.
 2. Select [Maintenance Mode]-[Set] from the popup menu.
The [Set Maintenance Mode] dialog is displayed.
 3. Click the [OK] button.
Maintenance mode is configured for the target network device.

- When has executed a command that places a network device into maintenance mode

Maintenance mode is configured for the target network device, by using the `rxadm netdevice set` command with the `-attr mode=maintenance` option specified.

- Releasing Maintenance Mode

The network device is released from maintenance mode in the following cases:

- When has performed an operation from the ROR console which releases the network device from maintenance mode
 1. Right-click the target network device in the network device tree on the ROR console.
 2. Select [Maintenance Mode]-[Release] from the popup menu.
The [Release Maintenance Mode] dialog is displayed.
 3. Click the [OK] button.
The target network device is released from maintenance mode.

- When has executed a command that releases a network device from maintenance mode

The target network device is released from maintenance mode by using the `rxadm netdevice set` command with the `-attr mode=active` option specified.

Information

- When releasing a network device from maintenance mode, confirm the state of the target network device.
 - If there is no error in the state
Release the device from maintenance mode and change the operational status to "normal".
 - If a network device communication error is detected
The device cannot be released from maintenance mode.

Example

- When configuring maintenance mode using a command

```
# /opt/FJSVrcvnr/bin/rcxadm netdevice set -name nd01 -attr mode=maintenance <RETURN>
```

- When releasing maintenance mode using a command

```
# /opt/FJSVrcvnr/bin/rcxadm netdevice set -name nd01 -attr mode=active <RETURN>
```

The maintenance mode configuration status can be confirmed by using one of following methods:

- From the GUI:

1. Click the network device to confirm in the network device tree.
2. Select the [Resource Details] tab.
3. Confirm the maintenance mode status, referring to "Maintenance Mode" of "General".

- maintenance

Indicates that maintenance mode is configured.

- active

Indicates that maintenance mode is released.

- From the Command-line:

Use the rcxadm netdevice list command to confirm the maintenance mode status.

Check the maintenance mode status in the "MAINTENANCE" displayed in the display results of the list subcommand.

- ON

Indicates that maintenance mode is configured.

- OFF

Indicates that maintenance mode is released.



See

For details on the rcxadm netdevice command, refer to "3.3 rcxadm netdevice" in the "Reference Guide (Command) VE".



Note

- Switchover of maintenance mode may not be necessary for performing maintenance, depending on the target network device. For details, refer to "6.4 Network Device Maintenance" in the "Operation Guide VE".

Appendix A User Interface

Resource Orchestrator provides three graphical user interfaces: the ROR console, BladeViewer and NetworkViewer. This appendix provides an overview of the ROR console.

For details on how to open and close the ROR console, refer to "Chapter 3 Login to the ROR Console" in the "Setup Guide VE".

For details on BladeViewer, refer to "Chapter 6 BladeViewer".

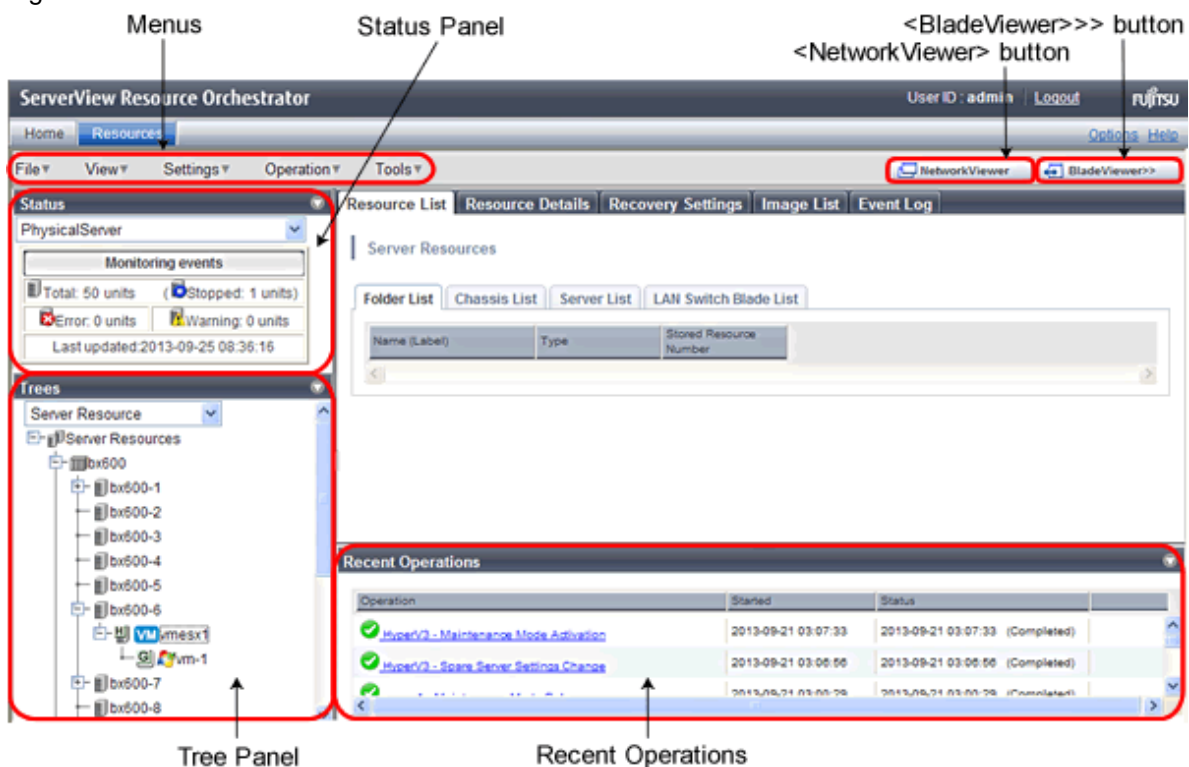
For details on the NetworkViewer, refer to "Chapter 13 NetworkViewer".

A.1 ROR Console

This section explains how the [Resource] tab of the ROR console is organized.

The [Resource] tab of the ROR console is sometimes referred to as the ROR console.

Figure A.1 ROR Console



Menus

Operations can be performed either from the menu bar or popup menus.

Status Panel

The Status Panel displays the status of managed servers.

If a warning or error event occurs on a managed server, the status monitoring area starts to blink.

Tree Panel

By switching between tree types, it is possible to select from the following four types of trees.

Server Resources

The resources below are shown in a tree view. A status icon is displayed over each resource's icon.

- Chassis
- Server
- Physical OS

- VM Host
- VM guest
- LAN Switch

Network

The resources below are shown in a tree view. A status icon is displayed over each resource's icon.

- LAN switch (excluding LAN switch blades)

Power Monitoring Device

The following power monitoring devices are shown in a tree view.

- PDU
- UPS

Management Software

The following management software, which can be used in coordination with Resource Orchestrator, are shown in a tree view. A status icon is displayed over each resource's icon.

- Management Software (vCenter Server)
- Management Software (SCVMM)
- Management Software (VIOM)

Main Panel

The Main Panel displays information on resources selected in the tree.

- [Resource List] Tab

Displays information on resources related to the resource selected in the resource tree.

- [Resource Details] Tab

Displays more detailed information on the resource selected in the tree, or a resource that was double-clicked in the [Resource List] tab.

- [Recovery Settings] Tab

Displays information on the spare servers assigned to the resource selected in the resource tree.

- [Image List] Tab

Displays system and cloning image information.

- Event

Resource Orchestrator events and related information are displayed.

The event log displays a history of events that have occurred on managed resources.

Recent Operations

Displays the progress statuses and results of operations performed in Resource Orchestrator.

[NetworkViewer] Button

Displays the NetworkViewer showing the network configuration in another window or tab.

The browser settings determine whether another window or tab is used.

For details, refer to "[13.2 Screen Layout](#)".

[BladeViewer>>] Button

Opens the BladeViewer interface.

BladeViewer is a management interface specially designed for blade servers. It can only be used in conjunction with PRIMERGY BX servers registered as managed servers.

For details, refer to "6.2 User Interface".

A.2 Menu

This section describes the menus available in the ROR console.

Figure A.2 Menu



A.2.1 List of Menus

The menus provided on the menu bar of the ROR console are listed in the table below. Options available vary according to the authority level of the user account.

Table A.1 Menu Items

Menu	Submenu		Privileged User	General User	Function	
File	Import	-	Yes	No	Imports the system configuration file for pre-configuration.	
	Export	-	Yes	No	Exports the system configuration file for pre-configuration.	
	Download Template	CSV Format	Yes	Yes	Downloads a sample of the system configuration file (CSV format) for pre-configuration.	
	Export Environmental Data	Chassis		Yes	Yes	Exports environmental data collected from chassis.
		Server		Yes	Yes	Exports environmental data collected from servers.
		Power Monitoring Device		Yes	Yes	Exports environmental data collected from power monitoring devices.
	Logout	-	Yes	Yes	Logs out of the ROR console. (*1)	
View	Reset Layout	-	Yes	Yes	Returns the layout of the ROR console to its initial state.	
Settings	Register	Chassis	Yes	No	Registers a chassis.	
		Server	Yes	No	Registers a server.	
		SPARC Enterprise (M3000/T Series)	Yes	No	Registers a SPARC Enterprise (M3000/T series) server.	
		SPARC Enterprise (Partition Model)	Yes	No	Registers SPARC Enterprise M4000/M5000/M8000/M9000 servers.	
		Fujitsu M10-1/M10-4	Yes	No	Registers a Fujitsu M10-1/M10-4.	
		Fujitsu M10-4S	Yes	No	Registers a Fujitsu M10-4S.	
		PRIMEQUEST	Yes	No	Registers a PRIMEQUEST.	
		LAN switch	Yes	No	Registers a LAN switch.	
		Agent	Yes	No	Register the agent.	
		Power Monitoring Device	Yes	No	Registers a power monitoring device.	

Menu	Submenu		Privileged User	General User	Function
		Management Software (vCenter Server)	Yes	No	Registers VM management software (VMware vCenter Server).
		Management Software (SCVMM)	Yes	No	Registers VM management software (System Center Virtual Machine Manager).
		Management Software (VIOM)	Yes	No	Registers VM management software (VIOM).
	Delete	-	Yes	No	Deletes a resource.
	Modify (*2)	Registration Settings	Yes	No	Modifies a resource's registration settings.
		HBA address rename settings (*3)	Yes	No	Modifies the HBA address rename settings of a server.
		Public LAN (MAC Address Information) (*4)	Yes	No	Modifies the information for the public LAN that a server is connected to.
		Network Settings (*5, *6, *7)	Yes	No	Modifies the network settings of a LAN switch.
		Spare Server Settings (*8)	Yes	No	Modifies a server's recovery settings.
		Monitoring Settings	Yes	No	Modifies the monitoring information for a server.
		WWN Settings (*9)	Yes	No	Modifies the WWN settings for a server.
		VM Host Login Account	Yes	No	Modifies the registered login account used to communicate with the VM host.
	User Accounts	-	Yes	Yes	Adds, changes, and deletes user accounts.
	Admin LAN Subnet	-	Yes	Yes (*10)	Performs viewing, registration, changing or deletion of the admin LAN subnet information.
Operation	Update	-	Yes	Yes	Updates a resource.
	Power	ON	Yes	No	Powers on a server.
		OFF	Yes	No	Powers off a server after shutting down its operating system.
		OFF (Forced)	Yes	No	Powers off a server without shutting down its operating system.
		Reboot	Yes	No	Reboots a server after shutting down its operating system.
		Reboot (Forced)	Yes	No	Reboots a server without shutting down its operating system.
	LED (*5)	ON	Yes	No	Turns the maintenance LED on.
		OFF	Yes	No	Turns the maintenance LED off.

Menu	Submenu		Privileged User	General User	Function
	Spare Server (*2, *8)	Switchover	Yes	No	Switches over a server with one of its spare servers.
		Failback	Yes	No	Switches back a server to its pre-switchover state.
		Takeover	Yes	No	Accepts a switched over configuration as final (without switching back to the original configuration).
	Hardware Maintenance	Reconfigure	Yes	No	Detects and reconfigures the properties of a replaced server.
		Restore LAN Switch (*11, *12)	Yes	No	Restores a LAN switch configuration.
	Maintenance Mode (*2)	Set	Yes	No	Places a server or network device into maintenance mode.
		Release	Yes	No	Sets a server or network device into active mode.
	Backup/Restore (*2)	Backup	Yes	No	Backs up a system image from a server.
		Restore	Yes	No	Restores a system image to a server.
	Cloning (*2, *13)	Collect	Yes	No	Collects a cloning image from a server.
		Deploy	Yes	No	Deploys a cloning image to a server.
	Migrate VM Guest	-	Yes	No	Migrates a VM guest to a different VM host.
	VM Home Position	Settings	Yes	No	Sets VM Home Position.
		Clear	Yes	No	Clears VM Home Position.
		Back to Home	Yes	No	Migrates a VM guest to VM Home Position.
Save OVM Configuration XML	-	Yes	No	Saves OVM configuration information in an XML file. (*14)	
Tools	Topology	Discover LAN switches	Yes	No	Discovers LAN switches within the admin LAN.
		Detect physical links	Yes	No	Acquires physical link data from registered LAN switches.
	Licenses	-	Yes	No	Displays license settings and registered licenses.
	Options	-	Yes	Yes (*15)	Modifies client and environmental data settings.
	Environmental Data Graph	-	Yes	Yes	Displays environmental data graphs.

*1: If multiple ROR consoles or BladeViewer sessions exist, the login sessions may be terminated.

*2: Cannot be selected for a VM guest.

*3: Cannot be selected for PRIMEQUEST or Fujitsu M10/SPARC Enterprise.

*4: Only available for PRIMERGY RX, PRIMERGY TX, and other PC servers.

*5: Only available for PRIMERGY BX servers.

*6: Cannot be set for PRIMERGY BX900/BX400 LAN switch blades operating in IBP mode or Converged Fabric mode.

*7: Cannot be set for LAN switch blade PY CB 10Gb FEX Nexus B22.

*8: Cannot be selected for PRIMEQUEST.

*9: Only available for Fujitsu M10/SPARC Enterprise.

- *10: Only the admin LAN subnet information can be displayed with general user privileges.
- *11: Not available for PRIMERGY BX900/BX400 LAN switch blades operating in IBP mode or Converged Fabric mode.
- *12: Not available for LAN switch blade PY CB 10Gb FEX Nexus B22.
- *13: Cannot be selected for a VM host.
- *14: Only available when the VM host is OVM for SPARC.
- *15: General users cannot change environmental data settings.

A.2.2 Popup Menus

Right-clicking in the resource tree or in the , or Image list displays a popup menu with a list of options available for the selected resource status.

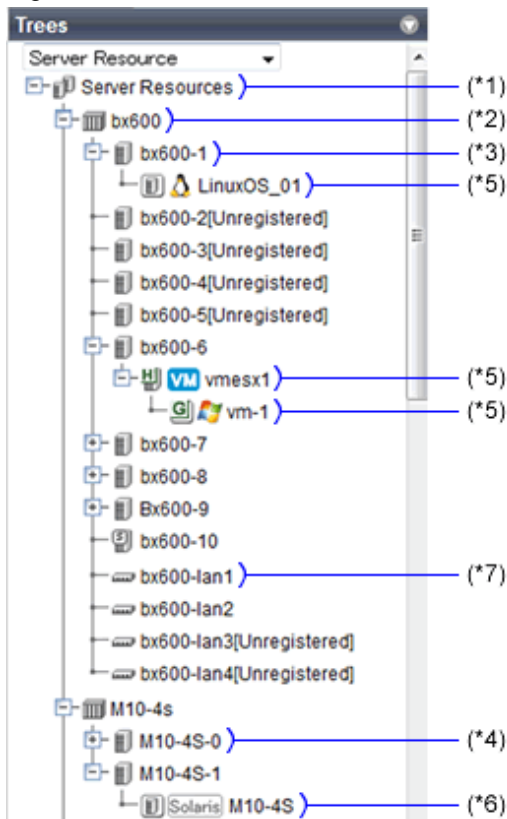
The tables below detail the popup menus provided for each object.

Available menus vary according to user account privileges.

- [Server](#)
- [Network](#)
- [Power Monitoring Devices](#)
- [Management Software](#)
- [Cloning Image List](#)
- [System Image List](#)

Server

Figure A.3 Server Tree



*1: Refer to "Table A.2 Popup Menus Available for the "Server Resources" Tree Node".

*2: Refer to "Table A.3 Popup Menus Available for Chassis".

*3: Refer to "Table A.4 Popup Menus Available for Servers".

*4: Refer to "Table A.5 Popup Menus Available for Fujitsu M10/SPARC Enterprise".

*5: Refer to "Table A.6 Popup Menus Available for Physical OSs [Physical Servers], VM Hosts, and VM Guests".

*6: Refer to "Table A.7 Popup Menus Available for Physical OSs [Solaris]".

*7: Refer to "Table A.8 Popup Menus Available for LAN Switch".

Table A.2 Popup Menus Available for the "Server Resources" Tree Node

Popup Menu		Function
Menu	Submenu	
Register	Chassis	Registers a chassis.
	Server	Registers a server.
	SPARC Enterprise (M3000/T Series)	Registers a SPARC Enterprise (M3000/T series) server.
	SPARC Enterprise (Partition Model)	Registers the chassis of a SPARC Enterprise M4000/M5000/M8000/M9000 server.
	Fujitsu M10-1/M10-4	Registers a Fujitsu M10-1/M10-4.
	Fujitsu M10-4S	Registers a Fujitsu M10-4S.
	PRIMEQUEST	Registers the chassis of a PRIMEQUEST.
Export	Environmental Data (Chassis)	Exports environmental data collected from chassis.
	Environmental Data (Servers)	Exports environmental data collected from servers.

Table A.3 Popup Menus Available for Chassis

Popup Menu		Function
Menu	Submenu	
Delete	-	Deletes a chassis.
Update	-	Updates a chassis.
Modify	Registration Settings	Modifies a chassis' registration settings.
External Management Software	-	Opens a Management Blade's Web interface.
Export (*)	Environmental Data	Exports environmental data collected from chassis.

* Note: This option is only available for chassis equipped with power monitoring capabilities.

Table A.4 Popup Menus Available for Servers

Popup Menu		Function
Menu	Submenu	
Register	Server (*1)	Registers a server.
	Agent	Register the agent.
Delete	-	Deletes a server.
Update	-	Updates a server.
Modify	Registration Settings	Modifies a server's registration settings.
	HBA address rename settings (*2)	Modifies the HBA address rename settings of a server.
	Public LAN (MAC Address Information) (*3)	Modifies the information for the public LAN that a server is connected to.
	Network Settings (*4)	Modifies the network settings of a server.
	Spare Server Settings (*2)	Modifies a server's recovery settings.
Maintenance Mode	Set	Places a server into maintenance mode.

Popup Menu		Function
Menu	Submenu	
	Release	Sets a server to active mode.
Power	ON	Powers on a server.
	OFF	Powers off a server after shutting down its operating system.
	OFF (Forced)	Powers off a server without shutting down its operating system.
	Reboot	Reboots a server after shutting down its operating system.
	Reboot (Forced)	Reboots a server without shutting down its operating system.
LED (*4)	ON	Turns the maintenance LED on.
	OFF	Turns the maintenance LED off.
Hardware Maintenance	Reconfigure	Detects and reconfigures the properties of a replaced server.
Backup/Restore	Restoration	Restores a system image to a server.
Cloning	Deploy	Deploys a cloning image to a server.
Console Screen (*5)	-	Opens the server console.
External Management Software (*6)	-	Opens external server management software.
Export (*7)	Environmental Data	Exports environmental data collected from servers.

*1: Only available for PRIMERGY BX series and PRIMEQUEST servers.

*2: Only available only for VM hosts when using PRIMEQUEST.

*3: Only available for PRIMERGY RX, PRIMERGY TX, and other PC servers.

*4: Only available for PRIMERGY BX servers.

*5: In order to open the console screen of the managed server, register the account of Remote Management Controller with ServerView Operations Manager. If a window for Remote Management Controller is displayed when opening the console screen the second or a later time, close the window for Remote Management Controller and then start the console screen again.

*6: Only available for PRIMERGY series, PRIMEQUEST, SPARC Enterprise M series, and Fujitsu M10 servers.

*7: This option is only available for chassis equipped with power monitoring capabilities.

Table A.5 Popup Menus Available for Fujitsu M10/SPARC Enterprise

Popup Menu		Function
Menu	Submenu	
Register	Server (*1)	Registers a server.
	Agent	Register the agent.
Delete	-	Deletes a Fujitsu M10/SPARC Enterprise.
Update	-	Updates a Fujitsu M10/SPARC Enterprise.
Modify	Registration Settings	Modifies a Fujitsu M10/SPARC Enterprise's registration settings.
	WWN Settings	Modifies the WWN settings for a server.
	Spare Server Settings	Modifies a server's recovery settings.
Maintenance Mode	Set	Places a server into maintenance mode.
	Release	Sets a server to active mode.

Popup Menu		Function
Menu	Submenu	
Power	ON	Powers on a Fujitsu M10/SPARC Enterprise.
	OFF	Powers off a Fujitsu M10/SPARC Enterprise after shutting down its operating system.
	OFF (Forced)	Powers off a Fujitsu M10/SPARC Enterprise without shutting down its operating system.
	Reboot	Reboots a Fujitsu M10/SPARC Enterprise after shutting down its operating system.
	Reboot (Forced)	Reboots a Fujitsu M10/SPARC Enterprise without shutting down its operating system.
External Management Software	-	Opens external server management software for Fujitsu M10/SPARC Enterprise.
Export (*2)	Environmental Data	Exports environmental data collected from servers.

*1: Only available only for SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S.

*2: This option is only available for chassis equipped with power monitoring capabilities.

Table A.6 Popup Menus Available for Physical OSs [Physical Servers], VM Hosts, and VM Guests

Popup Menu		Function
Menu	Submenu	
Delete (*1)	-	Deletes a physical OS or VM host.
Update	-	Updates a physical OS, VM host, or VM guest.
Modify (*1, *2)	HBA address rename settings (*3, *4)	Modifies the HBA address rename settings of a server.
	Network Settings (*4, *5, *6, *7)	Modifies the network settings of a server.
	Spare Server Settings (*3, *4)	Modifies a server's recovery settings.
	Monitoring Settings	Modifies the monitoring information for a server.
	VM Host Login Account (*8)	Modifies the registered login account used to communicate with the VM host.
Power	ON	Powers on a server.
	OFF	Powers off a server after shutting down its operating system.
	OFF (Forced)	Powers off a server without shutting down its operating system.
	Reboot	Reboots a server after shutting down its operating system.
	Reboot (Forced)	Reboots a server without shutting down its operating system.
Spare Server (*1, *3, *4)	Switchover	Switches over a server with one of its spare servers.
	Failback	Switches back a server to its pre-switchover state.
	Takeover	Accepts a switched over configuration as final (without switching back to the original configuration).
Maintenance Mode (*1, *4)	Set	Places a server into maintenance mode.
	Release	Sets a server to active mode.

Popup Menu		Function
Menu	Submenu	
Backup/Restore (*1, *4)	Backup	Backs up a system image from a server.
	Restore	Restores a system image to a server.
Cloning (*1, *9)	Collect	Collects a cloning image from a server.
	Deploy	Deploys a cloning image to a server.
VM Home Position (*1, *8)	Settings	Sets VM Home Position.
	Clear	Clears VM Home Position.
	Back to Home	Migrates a VM guest to VM Home Position.
External Management Software (*1, *10)	-	Opens external server management software.
VM Management Console (*4, *8, *11, *12)	-	Opens the VM management console installed on the client machine. For details, refer to " 15.4 External Software ".
Migrate VM Guest (*13)	-	Migrates a VM guest to a different VM host.
Save OVM Configuration XML (*14)	-	Saves OVM configuration information in an XML file.

*1: Cannot be selected for a VM guest.

*2: Only available only for VM hosts when using PRIMEQUEST.

*3: Cannot be selected for PRIMEQUEST.

*4: This option may or may not be available according to the server virtualization software used. For details, refer to "9.1 Deciding Server Virtualization Software" in the "Design Guide VE".

*5: Only available for PRIMERGY BX servers.

*6: Cannot be set for PRIMERGY BX900/BX400 LAN switch blades operating in IBP mode or Converged Fabric mode.

*7: Cannot be set for LAN switch blade PY CB 10Gb FEX Nexus B22.

*8: This menu is not available for a physical OS.

*9: Cannot be selected for a VM host.

*10: Only available for PRIMERGY series, PRIMEQUEST, SPARC Enterprise M series, and Fujitsu M10 servers.

*11: If the VM management screen is started on VMware vSphere 5.0 or later, it may connect with the VM management product or the VM host, and login may fail. In this case, input the password from the VM management screen, and log in.

*12: To use this feature, a VM management console must be installed and the admin client must be configured properly.

After installing the VM management console, select this menu item and follow the instructions shown in the displayed dialog. Once configuration is completed, the VM management software can be installed from this menu.

*13: Only available for VM guests.

*14: Only available when the VM host is OVM for SPARC.

Table A.7 Popup Menus Available for Physical OSs [Solaris]

Popup Menu		Function
Menu	Submenu	
Delete	-	Deletes a Fujitsu M10/SPARC Enterprise.
Update	-	Updates a Fujitsu M10/SPARC Enterprise.
Modify	Spare Server Settings	Modifies a server's recovery settings.
	Monitoring Settings	Modifies a Fujitsu M10/SPARC Enterprise's monitoring settings.
Power	ON	Powers on an operating system.

Popup Menu		Function
Menu	Submenu	
	OFF	Powers off a server after shutting down its operating system.
	OFF (Forced)	Powers off a server without shutting down its operating system.
	Reboot	Reboots a server after shutting down its operating system.
	Reboot (Forced)	Reboots a server without shutting down its operating system.
Spare Server	Switchover	Switches over a server with one of its spare servers.
	Failback	Switches back a server to its pre-switchover state.
	Takeover	Accepts a switched over configuration as final (without switching back to the original configuration).
Maintenance Mode	Set	Places a server into maintenance mode.
	Release	Sets a server to active mode.
External Management Software	-	Opens external server management software for Fujitsu M10/SPARC Enterprise.

Table A.8 Popup Menus Available for LAN Switch

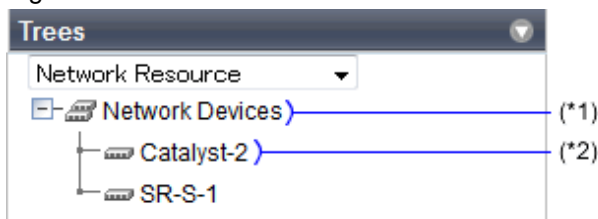
Popup Menu		Function
Menu	Submenu	
Register	LAN Switch	Registers a LAN switch .
Delete	-	Deletes a LAN switch .
Update	-	Updates a LAN switch .
Modify	Registration Settings	Modifies registration settings for a LAN switch.
	Network Settings (*1, *2)	Modifies the VLAN settings of a LAN switch external ports.
Restore (*1, *2)	-	Restores configuration of a LAN switch .
External Management Software	-	Opens the Web interface for a LAN switch.

*1: Not available for PRIMERGY BX900/BX400 LAN switch blades operating in IBP mode or Converged Fabric mode.

*2: Not available for LAN switch blade PY CB 10Gb FEX Nexus B22.

Network

Figure A.4 Network Devices Tree



*1: Refer to "Table A.9 Popup Menus Available for Network Devices".

*2: Refer to "Table A.10 Popup Menus Available for Network Devices".

Table A.9 Popup Menus Available for Network Devices

Popup Menu		Function
Menu	Submenu	
Topology	Discover LAN switches	Discovers LAN switches within the admin LAN.
	Detect physical links	Acquires physical link data from registered LAN switches.

Table A.10 Popup Menus Available for Network Devices

Popup Menu		Function
Menu	Submenu	
Register	-	Registers selected network devices.
Delete	-	Deletes selected network devices.
Update	-	Obtains and updates the information on the selected network devices.
Modify	Registration Settings	Modifies basic information of a network device.
Maintenance Mode	Set	Places a server into maintenance mode.
	Release	Releases maintenance mode.
External Management Software	-	Starts the management screen (Web console) provided by the network device.

Power Monitoring Devices

Figure A.5 Power Monitoring Device Tree



*1: Refer to "Table A.11 Popup Menus Available for the "Power Monitoring Devices" Tree Node".

*2: Refer to "Table A.12 Popup Menus Available for PDU and UPS".

Table A.11 Popup Menus Available for the "Power Monitoring Devices" Tree Node

Popup Menu		Function
Menu	Submenu	
Register	Power Monitoring Device	Registers a power monitoring device.
Export	Environmental Data	Exports environmental data.

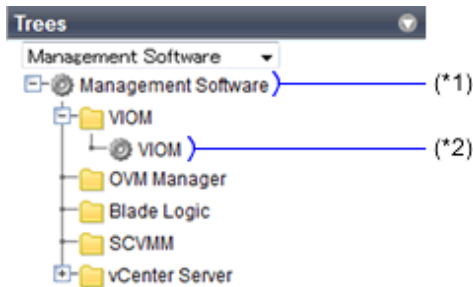
Table A.12 Popup Menus Available for PDU and UPS

Popup Menu		Function
Menu	Submenu	
Delete	-	Deletes a power monitoring device (PDU or UPS).
Update (*)	-	Updates a power monitoring device (PDU or UPS).
Modify	Registration Settings	Modifies a power monitoring device's registration settings.
Hardware Maintenance	Reconfigure	Detects and reconfigures the properties of a replaced power monitoring device (PDU or UPS).
Export	Environmental Data	Exports environmental data.

*1: Unlike other resources, the properties of a power monitoring devices are not automatically updated. Use this option to update them manually when necessary.

Management Software

Figure A.6 Management Software Tree



*1: Refer to "[Table A.13 Popup Menus Available for Management Software](#)".

*2: Refer to "[Table A.14 Popup Menus Available for Management Software \(vCenter Server/SCVMM/OVM Manager/Blade Logic/VIOM\)](#)".

Table A.13 Popup Menus Available for Management Software

Popup Menu		Function
Menu	Submenu	
Register	Management Software (vCenter Server)	Registers VM management software (VMware vCenter Server).
	Management Software (SCVMM)	Registers VM management software (System Center Virtual Machine Manager).
	Management Software (OVM Manager)	Registers management software (OVM Manager).
	Management Software (Blade Logic)	Registers management software (Blade Logic).
	Management Software (VIOM)	Registers VM management software (VIOM).

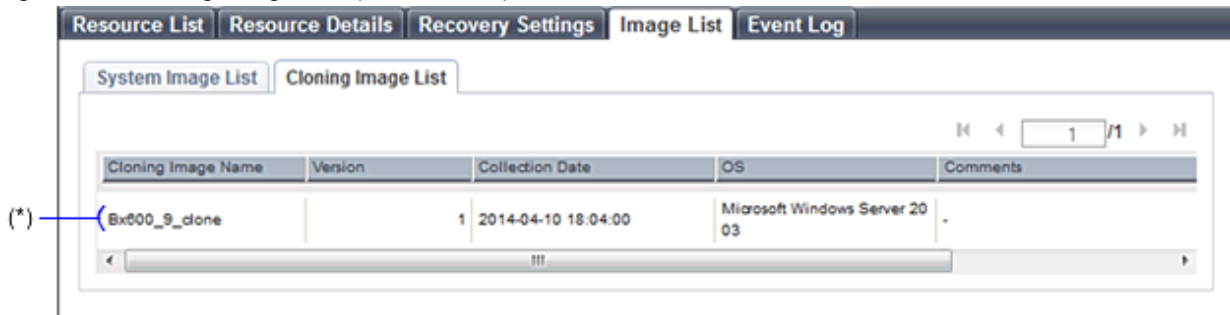
Table A.14 Popup Menus Available for Management Software (vCenter Server/SCVMM/OVM Manager/Blade Logic/VIOM)

Popup Menu		Function
Menu	Submenu	
Delete	-	Deletes management software.

Popup Menu		Function
Menu	Submenu	
Update	-	Updates management software information.
Modify	Registration Settings	Modifies registration settings for management software.

Cloning Image List

Figure A.7 Cloning Image List (Server Tree)



* Note: Refer to "Table A.15 Popup Menus Available for Cloning Images".

Table A.15 Popup Menus Available for Cloning Images

Popup Menu		Function
Menu	Submenu	
Deploy	-	Deploys a cloning image to a server.
Delete	-	Deletes a cloning image.

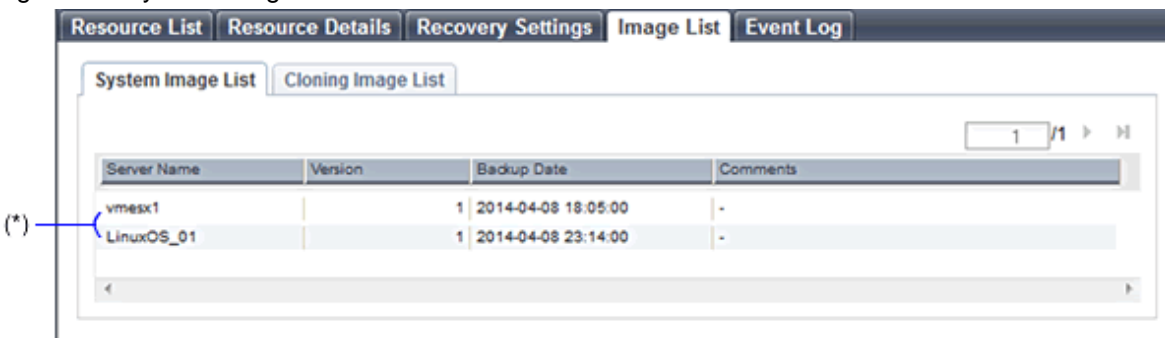


Note

If ServerView Deployment Manager is used on the admin LAN, the popup menu for cloning images cannot be used.

System Image List

Figure A.8 System Image List



* Note: Refer to "Table A.16 Popup Menus Available for System Images".

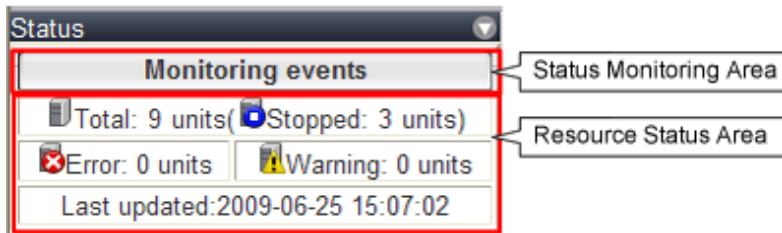
Table A.16 Popup Menus Available for System Images

Popup Menu		Function
Menu	Submenu	
Restoration	-	Restores a system image to a server.
Delete	-	Deletes a system image.

A.3 Status Panel

This section explains the different statuses that are displayed in the ROR console.

Figure A.9 Status Panel



Status Monitoring Area

The Event Log monitors a history of events that have occurred on managed resources.

Based on detected events, the status monitoring area will change color and blink. Clicking the status monitoring area will stop the blinking.

The following table details the different statuses and their associated corrective actions.

Table A.17 Monitor Status List

Monitoring Status	Background Color	Details	Corrective Action
Monitoring events	Grey	This indicates a normal state. No warning or error-level events have occurred on the displayed resources.	No action is necessary.
Warning event detected	Yellow	This indicates a warning state. A warning-level event has occurred on one or more of the displayed resources.	Click the status monitoring area to stop the blinking and fix the cause of the problem.
Error event detected	Red	This indicates an error state. An error-level event has occurred on one or more of the displayed resources.	Click the status monitoring area to stop the blinking and fix the cause of the problem.

Resource Status Area

This area displays the number of registered servers experiencing each status.

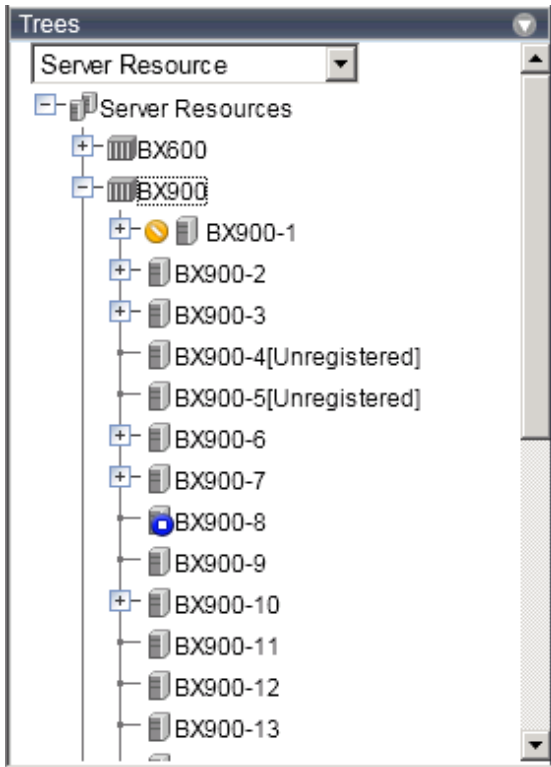
The resource status area lights up when there is at least one server in either "Error" or "Warning" status.

Clicking a lit up status area will display a list of resources with that status in the [Resource List] tab. Double-click a displayed resource to switch to its [Resource Details] tab and open either its external management software or the Management Blade's Web interface to investigate the problem.

A.4 Tree Panel

This section describes the trees used in the ROR console.

Figure A.10 Tree Panel



In the tree panel, clicking the upper area displays the following trees:

- Server Resources
- Network Devices
- Power Monitoring Device
- Management Software

Server Resources

Chassis, servers, physical OSs, VM hosts, VM guests, and LAN switch managed in Resource Orchestrator are displayed in a tree view. Resources are primarily displayed in registration order. However, for blade servers within a common chassis, the order by which Resource Orchestrator detects server blades takes precedence.

Resources displayed in the resource tree are represented by an icon and their resource name. For details on the icons used to indicate different resources, refer to "11.2 Resource Status" in the "Operation Guide VE".

For a non-registered resource, one of the following registration states is displayed at the end of the resource's name.

Table A.18 Resource Registration States

[Unregistered]	The resource was automatically detected, but has not been registered yet
[Registering]	The resource is being registered
[Admin Server]	This server is the admin server itself

If a label was set for a resource (in BladeViewer), that label is displayed after the resource name.

Display Format

`resource_name(label)`

Clicking a resource in the resource tree displays information related to that resource in the Main Panel. Right-clicking a resource displays a list of available operations in a popup menu.

For details on popup menus, refer to "A.2.2 Popup Menus".

If a problem occurs on a resource, a status icon indicating the problem is shown on top of the resource's own icon. For details on status icons, refer to "11.2 Resource Status" in the "Operation Guide VE". Clicking a resource icon will show information related to that resource in the Main Panel. Use this information to investigate the problem.

 **Information**

For a VM host coordinated with VMware vCenter Server, the name (IP address or host name) entered when registering with VMware vCenter Server will be displayed.

Network

Resources managed by Resource Orchestrator are displayed in a tree view. The resource types below are displayed. Resources are sorted and displayed by name in alphabetical order.

When Enabling the Network Device Management Function

- Network devices other than LAN switch blades
 - Firewalls
 - Server load balancers
 - L2 switches
 - Ethernet Fabric devices
 - Management hosts
- VFAB

In Other Cases

- LAN switches other than LAN switch blades

Resources displayed in the resource tree are represented by an icon and their resource name.

When the network device is a Converged Fabric, VFABs are displayed under it.

When the network device is a management host, managed network devices (virtual appliances) are displayed.

For details on the icons used to indicate different resources, refer to "11.2 Resource Status" in the "Operation Guide VE".

For a non-registered resource, one of the following registration states is displayed at the end of the resource's name.

Table A.19 Resource Registration States

[Unregistered]	The resource was automatically detected, but has not been registered yet
[Registering]	The resource is being registered

If a problem occurs on a resource, a status icon indicating the problem is shown on top of the resource's own icon.

For details on status icons, refer to "11.2 Resource Status" in the "Operation Guide VE".

Clicking a resource icon will show information related to that resource in the Main Panel. Use this information to investigate the problem.

Power Monitoring Device

The power monitoring devices (PDU or UPS) used by Resource Orchestrator to monitor power consumption are displayed in a tree view.

For details on icons used to represent power monitoring devices, refer to "11.2 Resource Status" in the "Operation Guide VE".

Clicking a power monitoring device displayed in the resource tree will display its attributes in the Main Panel. Right-clicking a power monitoring device will display a list of available operations in a popup menu.

For details on popup menus, refer to "[A.2.2 Popup Menus](#)".

Management Software

Management software (vCenter Server, SCVMM, , VIOM,) used in coordination with Resource Orchestrator is displayed in a tree view. For details on the icons used to indicate different management software, refer to "11.2 Resource Status" in the "Operation Guide VE".

Clicking management software on the tree displays information related to it in the Main Panel. Right-clicking management software will display a list of available operations in a popup menu.

For details on popup menus, refer to "[A.2.2 Popup Menus](#)".

Sorting the Resources in the Tree

The tree displays the resources in ascending order of name, by resource type.

To sort the resource list within the same type of resource, use the following method.

Storage Location of the Definition File

[Windows Manager]

Installation_folder\SVROR\Manager\etc\customize_data

[Linux Manager]

/etc/opt/FJSVrcvmr/customize_data

Definition File Name

gui_config.rcxprop

Definition File Format

RESOURCE_TREE_SORT_ORDER=*RESOURCE_TREE_ORDER*

Definition File Items

RESOURCE_TREE_ORDER

Specify the display order using one of the following options:

name: Displays the resource list in ascending (alphabetical) order of resource names.

registered: Displays the resource list in the order in which the resources were registered or created.



- To enable the above mentioned setting, restart the manager after editing the definition file.
- The orders of some lists, such as for blade servers in the server tree, cannot be changed.

A.5 [Resource List] Tab

The [Resource List] tab in the Main Panel displays a list of resources related to the resource that was selected in the resource tree. For details on the icons used to indicate different resources, refer to "11.2 Resource Status" in the "Operation Guide VE".

The table below shows the information displayed in the Resource List for each selectable resource.

Server Resources

Information on all registered chassis, servers, and LAN switch .

Chassis

Information on registered servers and LAN switch blades mounted in the selected chassis is displayed.

For PRIMEQUEST, SPARC Enterprise M4000/M5000/M8000/M9000, or Fujitsu M10-4S, information on the partitions configured on the chassis is displayed.

Server

Information on the physical OSs, VM hosts, and VM guests running on the selected server.

Physical OS

Information on the selected physical OS.

VM Host

Information on the VM guests running on the selected VM host.

VM Guest

Information on the selected VM guest.

Network Devices

Information on the selected network device is displayed.

Unregistered Server

Information on the selected unregistered server.

Network Resources

Information on all registered network resources is displayed.

Power Monitoring Devices

Information on all registered power monitoring devices.

Management Software

Information on all registered management software.

Management Software (vCenter Server, SCVMM, or VIOM)

Information on the selected management software.

Double-clicking a resource in the [Resource List] tab displays its [Resource Details] tab in the Main Panel. This tab shows detailed information on the selected resource.

In the [Resource List] tab, resources experiencing problems are shown with a status icon displayed on top of their resource icon. Switch to the [Resource Details] tab to check the faulty component or open external management software to investigate the problem.

For details, refer to "Chapter 11 Monitoring Resources" in the "Operation Guide VE".

The initial display is not sorted.

Clicking a column heading in the [Resource List] tab will sort the displayed resources in ascending or descending order.

In each page of the list, 10 items can be displayed. It is possible to move forwards and backwards by single pages, and to the first or last page.

Physical servers, physical OSs, VM hosts, and VM guests are displayed under the "Server List".

Resources displayed in the [Server List] can be filtered by selecting or deselecting their corresponding checkboxes.

A.6 [Resource Details] Tab

The [Resource Details] tab displays detailed information on registered resources.

This information is displayed by double-clicking any of the following resources in the resource tree:

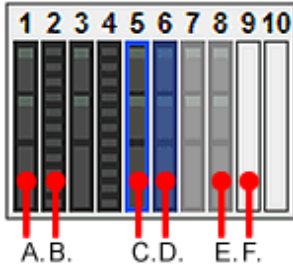
- Chassis
- Server
- Physical OS
- VM Host
- VM Guest
- Network Device
- PDU or UPS
- Management Software (vCenter Server, SCVMM, or VIOM)

Note

For items that there is no content to display the details for, a hyphen ("-") is displayed.

Selecting a blade server displays the following chassis image in the [Resource Details] tab. This image shows the slot positions of all server blades installed in the chassis.

Figure A.11 Chassis



The resource images shown in the above chassis image are explained in the table below.

Table A.20 Meaning of the Resources Shown in the Chassis Image

Image	Meaning
A.	Registered server blade.
B.	Detected storage blade.
C.	Currently displayed server blade.
D.	Server blade selected within the chassis image.
E.	Server blade that has not been registered yet.
F.	Empty slot.

Attributes of Displayed Resources

The [Resource Details] tab displays different attributes for each resource, as described below.

A.6.1 Chassis Attributes

General Area

Chassis name

The name used to identify a chassis is displayed.

System Name

The system name of the chassis is displayed.

Displayed only for PRIMEQUEST servers.

Model name

The model name of the chassis is displayed.

Admin LAN (IP address)

The chassis admin IP address is displayed.

Status

The status of the chassis is displayed.

Server blades

The number of server blades mounted in the chassis is displayed.
Displayed only when the chassis of a blade server is selected.

Partitions

The number of mounted partitions is displayed.
Displayed only when the chassis of a PRIMEQUEST, SPARC Enterprise M4000/M5000/M8000/M9000, or Fujitsu M10-4S is selected.

LAN Switch blades

The number of LAN switch mounted in the chassis is displayed.
Displayed only when the chassis of a blade server is selected.



See

.....
Refer to "11.2 Resource Status" in the "Operation Guide VE" for details on resource statuses.
.....

Hardware Details Area

Launch Management Blade Web UI

The link to the management blade's Web interface is displayed.
Not displayed for SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S.

Launch XSCF Web UI

The link to the remote management controller (XSCF) Web UI is displayed.
Only displayed for SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S.

Partition Configuration

The following information is only displayed when the chassis of a PRIMEQUEST 1000 series, SPARC Enterprise M4000/M5000/M8000/M9000, or Fujitsu M10-4S is selected.

Partition ID

The partition number is displayed.

Partition name

The name used to identify a partition is displayed.

SB

The ID of the system board used to configure a partition is displayed.

IOB

The ID of the IO board used to configure a partition is displayed.

GSPB (Giga-LAN SAS and PCI_Box Interface Board)

The ID of the GSPB used to configure a partition is displayed.

Reserved SB

The ID of the Reserved SB assigned to a partition is displayed.

LSB

The partition logical system board (LSB) number is displayed.
Only displayed for SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S.

XSB

The partition eXtended System Board (XSB) number is displayed.
Only displayed for SPARC Enterprise M4000/M5000/M8000/M9000 servers.

PSB

The partition physical system board (PSB) number is displayed.
Only displayed for Fujitsu M10-4S.

PPAR Configuration

This is only displayed for the PRIMEQUEST 2000 series.

Partition ID

The partition number is displayed.

Partition name

The name used to identify a partition is displayed.

Availability

The availability of the PPAR partition is displayed. When usable, "OK" is displayed. When not usable, "NG" is displayed.

Extended Partition ID

The Extended Partition number is displayed.

SB

The ID of the system board used to configure a partition is displayed.

IOU

The ID of the IOU used to configure a partition is displayed.

DU

The ID of the DU used to configure a partition is displayed.

LPCI_Box

The ID of the PCI_BOX_LH used to configure a partition is displayed.

Reserved SB

The ID of the Reserved SB assigned to a partition is displayed.

Extended Partitioning Configuration

This is only displayed for the PRIMEQUEST 2000 series.

Partition ID

The partition number is displayed.

Physical server name

The name used to identify a server is displayed.

Partition name

The name used to identify a partition is displayed.

Availability

The availability of Extended Partition is displayed. When usable, "OK" is displayed. When not usable, "NG" is displayed.

PPAR ID

The number of the PPAR to which the Extended Partition is allocated is displayed.

CPU core count

The total number of physical CPU cores is displayed.

For PRIMEQUEST 2000 series Extended Partition servers, "CPU core count" is displayed.

Memory capacity (DIMM)

The total capacity of server memory is displayed.

Memory EXCL

The information of memory EXCL is displayed.

SKT Binding

The information of SKT Binding is displayed.

PCI Express Slot

PCI Express slot information is displayed.

Home SB VGA/USB

The information of Home SB VGA/USB is displayed.

GbE

GbE information is displayed.

Disk Unit

Disk unit information is displayed.

A.6.2 Server Attributes

General Area

Physical server name

The name used to identify a server is displayed.

Model name

The model name of the server is displayed.

When the server has been registered as a managed server and powered on, the server model name obtained from ServerView Operations Manager is displayed. For other servers, no model name is displayed.

Product name

The product name of the server is displayed.

For PRIMERGY BX servers, the product name obtained from the management blade is displayed. For other servers, the model name is displayed.

Status

Server status is displayed.

Slot

A slot number representing the mounted location is displayed.

Displayed only for PRIMERGY BX servers.

Partition ID

The partition number is displayed.

Only displayed when a PRIMEQUEST, or a SPARC Enterprise M4000/M5000/M8000/M9000 server, or a server in a Fujitsu M10-4S is selected.

Maintenance Mode

The operational status of the server is displayed.

One of the following is displayed:

- active

- maintenance

Not displayed when Fujitsu M10/SPARC Enterprise are selected.

LED status

The illumination status of the maintenance LED is displayed.

Displayed only for PRIMERGY BX servers.

Admin LAN (MAC address 1)

The MAC address of the NIC used for the admin LAN is displayed.

Not displayed when Fujitsu M10/SPARC Enterprise are selected.

CPU core count

The CPU core count is displayed.

CPU type

The type of CPU is displayed.

When using servers other than the following, a hyphen ("-") is displayed.

- PRIMERGY BX Series Servers
- SPARC Enterprise M-Series
- Fujitsu M10
- PRIMEQUEST

CPU clock speed

CPU clock speed (frequency) is displayed.

When using servers other than the following, a hyphen ("-") is displayed.

- PRIMERGY BX Series Servers
- SPARC Enterprise M-Series
- Fujitsu M10
- PRIMEQUEST

Memory capacity

The total capacity of server memory is displayed.

When using servers other than the following, a hyphen ("-") is displayed.

- PRIMERGY BX Series Servers
- SPARC Enterprise M-Series
- Fujitsu M10
- PRIMEQUEST

For PRIMEQUEST 2000 series Extended Partition servers, "Memory capacity (DIMM)" is displayed.

Admin LAN (MAC address 2)

The MAC address of the network interface used for the HBA address rename setup service or for admin LAN redundancy is displayed.

For PRIMERGY RX series servers and TX series servers, the MAC address is displayed after HBA address rename settings are configured.

Not displayed when Fujitsu M10/SPARC Enterprise are selected.

Hardware Maintenance Mode

The hardware maintenance mode of the server is displayed.

Displayed only when a PRIMEQUEST server is selected.

Boot option

The boot option setting specified when registering servers is displayed.

Displayed only when a PRIMEQUEST server is selected.

Extended Partitioning Mode

The status of Extended Partitioning Mode of the PPAR is displayed.

It is only displayed when the PPAR of a PRIMEQUEST 2000 series is selected.

Dynamic Reconfiguration

The status of Dynamic Reconfiguration is displayed.

It is only displayed when the PPAR of a PRIMEQUEST 2000 series is selected.



See

- Refer to the Management Blade's manual for details on management blades' product names.
- Refer to the ServerView Operation Manager manual for details on the server models displayed and obtained from ServerView Operation Manager.
- Refer to "11.2 Resource Status" in the "Operation Guide VE" for details on resource statuses.

Hardware Details Area

Server management software

The link to the web interface of server management software is displayed.

Displayed only for the following servers:

- PRIMERGY Series
- PRIMEQUEST Servers
- Fujitsu M10/SPARC Enterprise

Remote Management Controller IP address

IP address of the remote management controller is displayed.

Displayed only for servers other than PRIMERGY BX and PRIMEQUEST servers.

I/O Virtualization Management Software

The link to the web interface of external I/O virtualization management software is displayed.

Displayed only if coordinated up with external I/O virtualization management software.

VIOM server profile

The assigned VIOM server profile name is displayed.

Displayed only if managed by VIOM and a server profile has been set.

Network Properties Area

Physical Connections

The list of LAN connections between the server and a LAN switch is displayed.

When a column heading in the list is clicked, the color of the selected column will change and the resources can be sorted in either ascending or descending order.

The indexes of the admin LAN and the public LAN are displayed.

The mounted position (index) of each network interface on the server is displayed for each index.

However, when a PRIMERGY RX/TX series server is selected, the index is displayed as "1" for the admin LAN and "2" for the redundant LAN.

When "[7.4.3 Registering the Public LAN \(MAC Address\) Information](#)" is performed, "3" or a higher number is displayed as the index for the public LAN.

Hardware Maintenance Area

NIC Summary

The MAC addresses and IP addresses of each server are displayed.

When a virtual MAC address is obtained from VIOM, the virtual MAC address is displayed.

For servers other than PRIMERGY BX servers and PRIMEQUEST servers, only admin LAN information is displayed.

When a PRIMERGY RX/TX server is selected and "[7.4.3 Registering the Public LAN \(MAC Address\) Information](#)" has been performed, the information of the public LAN is also displayed.

The MAC address that is displayed is determined according to the NIC order defined in the definition file.

For details on the definition file, refer to "[7.1.2 When Managing Rack Mount or Tower Servers Using VIOM](#)".

For Fujitsu M10/SPARC Enterprise, only the IP address is displayed.



Information

The IP address displayed is the one set within the server's operating system.

For network interfaces that were made redundant using BACS software, the information set in BACS (within the operating system) is displayed.

When the UMC function is enabled for the CNA of the physical server, MAC addresses and IP addresses other than the one with function number 0 are not displayed.

Partition Configuration

The following information is only displayed when the server of a PRIMEQUEST 1000 series, SPARC Enterprise M4000/M5000/M8000/M9000, or SPARC M10-4S is selected.

Partition name

The name used to identify a partition is displayed.

SB

The ID of the system board used to configure a partition is displayed.

IOB

The ID of the IO board used to configure a partition is displayed.

GSPB (Giga-LAN SAS and PCI_Box Interface Board)

The ID of the GSPB used to configure a partition is displayed.

Reserved SB

The ID of the Reserved SB assigned to a partition is displayed.

LSB

The partition logical system board (LSB) number is displayed.

Only displayed for SPARC Enterprise M4000/M5000/M8000/M9000 or Fujitsu M10-4S.

XSB

The partition eXtended System Board (XSB) number is displayed.

Only displayed for SPARC Enterprise M4000/M5000/M8000/M9000 servers.

PSB

The partition physical system board (PSB) number is displayed.

Only displayed for Fujitsu M10-4S.

The following information is only displayed when the PPAR of a PRIMEQUEST 2000 series is selected.

Partition name

The name used to identify a partition is displayed.

SB

The ID of the system board used to configure a partition is displayed.

IOU

The ID of the IOU used to configure a partition is displayed.

DU

The ID of the DU used to configure a partition is displayed.

LPCI_Box

The ID of the PCI_BOX used to configure a partition is displayed.

Reserved SB

The ID of the Reserved SB assigned to a partition is displayed.

The following information is only displayed when the Extended Partition of a PRIMEQUEST 2000 series server is selected.

Partition name

The name used to identify a partition is displayed.

Partition ID (PPAR)

The partition number is displayed.

Partition name (PPAR)

The name of the PPAR partition is displayed.

Physical server name (PPAR)

The physical server name of the PPAR is displayed.

Memory EXCL

The information of memory EXCL is displayed.

SKT Binding

The information of SKT Binding is displayed.

PCI Express Slot

PCI Express slot information is displayed.

Home SB VGA/USB

The information of Home SB VGA/USB is displayed.

GbE

GbE information is displayed.

Disk Unit

Disk unit information is displayed.

Extended Partitioning Configuration

It is only displayed for PPAR of the PRIMEQUEST 2000 series.

Partition ID

The partition number is displayed.

Physical server name

The name used to identify a server is displayed.

Partition name

The name used to identify a partition is displayed.

Availability

The availability of Extended Partition is displayed. When usable, "OK" is displayed. When not usable, "NG" is displayed.

PPAR ID

The number of the PPAR to which the Extended Partition is allocated is displayed.

CPU core count

The CPU core count is displayed.

Memory capacity (DIMM)

The total capacity of server memory is displayed.

Memory EXCL

The information of memory EXCL is displayed.

SKT Binding

The information of SKT Binding is displayed.

PCI Express Slot

PCI Express slot information is displayed.

Home SB VGA/USB

The information of Home SB VGA/USB is displayed.

GbE

GbE information is displayed.

Disk Unit

Disk unit information is displayed.

A.6.3 Physical OS, VM Host, and VM Guest Attributes

General Area

Server name

The name used to identify a physical OS, VM host, or VM guest is displayed.

Admin LAN (IP Address)

The IP address on the admin LAN is displayed.

VM guests are shown using hyphens ("-").

Status

The status of the physical OS, VM host, or VM guest is displayed.

Type

The type of the OS running on the server is displayed.

One of the following is displayed:

- Physical OS

- VM Host
- VM guests

OS

The type of the OS running on the server is displayed.

Physical server name

The name of the server on which the physical OS, VM host, or VM guest is operating is displayed.
 VM guests are shown using hyphens ("-").



Refer to "11.2 Resource Status" in the "Operation Guide VE" for details on resource statuses.

VM Host Information Area

The following information is displayed only for VM Hosts.

VM type

The type of the VM is displayed.

VM software name

The name of the VM software used is displayed.

VM software VL

The version and level of the VM software used is displayed.

Number of VM guests

The number of VM guests is displayed.

VM management software

The link to the web interface of server virtualization software is displayed.

OVM Configuration Information's XML Save Status

The information regarding the save status of the OVM configuration information in the XML file is displayed.

For details on saving OVM configuration information in XML files, refer to "[Chapter 18 Settings for Server Switchover](#)".

	Value	Description
OVM Configuration Information's XML Save Status	-	The XML file is not saved This is displayed when the XML file has never been saved or the XML file save process has never succeeded.
	Success (Last success time: 2013-08-27 11:36:47)	The XML file was successfully saved The time and date when the XML file was saved. The time and date when the XML file was saved at the following timing: - Automatic Saving - GUI/CLI operation
	Failure (Last success time:2013-05-16 02:50:30)	The XML file save process that was last performed failed The time and date when the save process was succeeded last time is output.

VM Guest List

A list of hosted VM guests is displayed.

VM Home Positions (VM Guests)

A list of the VM guests with the selected VM host set as their VM Home Position is displayed.

VM Guest Information Area

The following information is displayed only for VM guests.

VM type

The type of the VM is displayed.

VM host name

The name of the VM host on which the VM guest is stored is displayed.

VM name

The name of the VM is displayed.

VM management software

The link to the web interface of server virtualization software is displayed.

Hardware Details Area

The following information is not displayed for VM guests.

Server management software

The link to the web interface of server management software is displayed.

Displayed only for the following servers:

- PRIMERGY Series
- PRIMEQUEST
- Fujitsu M10/SPARC Enterprise

Remote Management Controller IP address

IP address of the remote management controller is displayed.

Displayed only for servers other than PRIMERGY BX servers.

Latest System Image Area

The following information is not displayed for VM guests or Fujitsu M10/SPARC Enterprise.

Version

The latest version of the system image is displayed.

Backup date

The date and time of the most recent system image backup is displayed.

Comment

Comments describing the system image are displayed.

Spare Server Settings Area

The following information is not displayed for VM guests.

Primary server

Displays the name of the physical server that will be replaced when server switchover occurs.

Active server

Displays the name of the physical server that is currently running.

Server switchover method

The method used to perform server switchover is displayed.

Server boot method

The boot type of the system disk is displayed.

Automatic server recovery

Shows whether automatic server recovery is enabled or not.

Network switchover

Shows whether network settings will be automatically adjusted during server switchover.

Force spare server to power off during switchover

The setting whether the spare server is turned off forcibly when switching over to the spare server is displayed.

Switch over to spare server running VM guests

The setting whether the server is switched to a VM host on which a VM guest exists is displayed.

Spare server

Displays the name of the physical server that will replace the current active server when server switchover occurs.

HBA Address Rename Settings Area

The following information is not displayed for VM guests or Fujitsu M10/SPARC Enterprise.

WWNN

The WWNN set on the HBA is displayed.

WWPN 1

The first WWPN set on the HBA is displayed.

The WWPN should be set to the I/O address of each HBA (in descending order).

Therefore, for rack mount or tower servers, the order may not correspond with port number order described for the HBA.

WWPN 2

The second WWPN set on the HBA is displayed.

The WWPN should be set to the I/O address of each HBA (in descending order).

Therefore, for rack mount or tower servers, the order may not correspond with port number order described for the HBA.

Network Properties Area (VLAN)

The following information is not displayed for VM guests.

Index

The mounted position (index) of each network interface on the server is displayed.

However, when a PRIMERGY RX/TX series server is selected, the index is displayed as "1" for the admin LAN and "2" for the redundant LAN.

When "[7.4.3 Registering the Public LAN \(MAC Address\) Information](#)" is performed, "3" or a higher number is displayed as the index for the public LAN.

Port VLAN

The port VLAN IDs set on the LAN switch to be connected are displayed.

When connected to a PRIMERGY BX900/BX400 LAN switch blade operating in IBP mode, "(IBP)" is displayed.

When connected to a PRIMERGY BX900/BX400 LAN switch blade operating in Converged Fabric mode, "(Converged Fabric)" is displayed.

Tagged VLAN

The tagged VLAN IDs set on the LAN switch to be connected are displayed.

When connected to a PRIMERGY BX900/BX400 LAN switch blade operating in IBP mode, "(IBP)" is displayed.

When connected to a PRIMERGY BX900/BX400 LAN switch blade operating in Converged Fabric mode, "(Converged Fabric)" is displayed.

Port Groups Area (IBP)

NIC Index

The mounted position (index) of each network interface on the server is displayed.

Group

The names of the port groups set on the LAN switch ports connected to each network interface (for LAN switch operating in IBP mode) are displayed.

Only "-" is displayed under the following conditions.

- The corresponding LAN switch is not registered
- The corresponding LAN switch is not operating in IBP mode
- The port of the corresponding LAN switch has not been assigned to a port group

Monitoring Information

Timeout(sec)

The time-out value (in seconds) for ping monitoring is displayed.

Recovery method

The recovery performed when an error is detected is displayed.

Number of reboots

The number of times reboot is performed during recovery is displayed.

WWN Settings Area

The following information is not displayed for VM guests or servers other than Fujitsu M10/SPARC Enterprise.

WWPN of port n ($n:1-8$)

The WWPN value of the port n is displayed.

Values set by users are reflected on WWPN.

Target CA WWPN

The WWPN for the CA connected to the port n is displayed.

Target CA AffinityGroup

The AffinityGroup for the CA connected to the port n is displayed.

Automatic Network Configuration

The following information is displayed when the VM host is a target of network auto configuration and only when automatic network configuration has been performed.

Network resource name

The network resource name for which automatic network configuration is performed is displayed.

VLAN ID

The VLAN ID configured for the network resource is displayed.

Subnet Address

The subnet address configured for the network resource is displayed.
When it is not configured, "-" is displayed.

Subnet Mask

The subnet mask configured for the network resource is displayed.
When it is not configured, "-" is displayed.

A.6.4 LAN Switch Blade Attributes

General Area

LAN switch name

The name used to identify a LAN switch blade is displayed.

System Name (sysName)

The name of the device specified as a LAN switch blade is displayed.

Admin port

The admin port to be used for communication with the admin server is displayed.

IP address

The IP address to be used for communication with the admin server is displayed.

For PY CB 10Gb FEX Nexus B22, a hyphen ("-") is displayed.

Device name (Product name)

The product name of a LAN switch blade is displayed.

Model

The model name of a LAN switch blade is displayed.

Serial number

The serial number of a LAN switch blade is displayed.

Firmware version

The firmware version of a LAN switch blade is displayed.

Device status

The status of a LAN switch blade is displayed.

One of the following is displayed:

- normal
- error
- warning
- unknown

Slot

A slot number representing the mounted location is displayed.

VCS ID

A VCS ID is displayed.

When VCS is not configured, a hyphen ("-") is displayed.

RBridge ID

An RBridge ID is displayed.

When VCS is not configured, a hyphen ("-") is displayed.

Fabric ID

A Fabric ID is displayed.

When Converged Fabric is not configured, a hyphen ("-") is displayed.

Domain ID

A Domain ID is displayed.

When Converged Fabric is not configured, a hyphen ("-") is displayed.

Switch ID

A Switch ID is displayed.

When Converged Fabric is not configured, a hyphen ("-") is displayed.

Information

When the replacement of a LAN switch blade is completed, "The LAN switch has been replaced. Please confirm that the status of the LAN switch is normal before executing the restore command." is displayed. Perform the restore operation referring to "6.2.5 Replacing Non-server Hardware" in the "Operation Guide VE".

Hardware Details Area

Launch Switch Blade Web UI

A link to the Web interface of the LAN switch blade is displayed.

Note

If no Web interface is available for the selected LAN switch blade, the following message is displayed: "There is no information to display".

Refer to the LAN switch blade manual to check whether a Web interface is provided.

Port Properties Area

Port Number

The number of the port of the selected LAN switch blade is displayed.

Port Name

The name assigned to the port of the selected LAN switch blade is displayed.

For PY CB 10Gb FEX Nexus B22, internal ports are displayed as 1/1 - 1/16, external ports (from number 1 to 8) are displayed as -/17 - -/24.

Link Status

The operational status of the port is displayed.

One of the following is displayed:

- up
- down
- unknown

For a LAN switch blade operating in Converged Fabric mode or PY CB 10Gb FEX Nexus B22, a hyphen ("-") is displayed.

Speed/Duplex Mode

The speed and duplex mode of the operating port are displayed.

For a LAN switch blade operating in Converged Fabric mode or PY CB 10Gb FEX Nexus B22, a hyphen ("-") is displayed.

Link aggregation group name

The name of the link aggregation group to which the port of the selected LAN switch blade belongs.

If it does not belong to link aggregation, a hyphen ("-") is displayed.

Information

For LAN switch blade CB Eth Switch 10/40Gb 18/8+2, displayed port information differs depending on the mode.

- When using Converged Fabric mode, ports in the range from 1 to 35 are displayed.
- When using switch mode and end host mode, ports in the range from 1 to 27 and port 31 are displayed.

Link aggregation information

The following information is only displayed when LAN switch blades (*) are selected.

Link aggregation group name

The name of the link aggregation group to which the port of the selected LAN switch blade belongs is displayed.

Port name

The link aggregation port name is displayed.

- LAG/Link aggregation group number
- PY CB Eth Switch/IBP 10Gb 18/8
- PY CB Eth Switch 10/40Gb 18/8+2 (switch mode/end-host mode)
- Logical port number of the LAG/port channel
- PY CB Eth Switch/IBP 1Gb 36/8+2
- PY CB Eth Switch/IBP 1Gb 36/12
- PY CB Eth Switch/IBP 1Gb 18/6

Member port:Link status

The physical port names and the link status (up or down) of the physical ports are displayed for the ports in the link aggregation.

VLAN

VLAN ID

A list of VLAN IDs set in the selected LAN switch blade is displayed.

Untagged Port(s)

A list of ports set with a port VLAN ID is displayed.

The logical port for link aggregation is only displayed for LAN switch blades (*).

Tagged Port(s)

A list of ports set with tagged VLAN ID(s) is displayed.

The logical port for link aggregation is only displayed for LAN switch blades (*).

* Note: The following LAN switch blades are included:

- PY CB Eth Switch/IBP 10Gb 18/8
- PY CB Eth Switch 10/40Gb 18/8+2 (switch mode/end-host mode)

- PY CB Eth Switch/IBP 1Gb 36/8+2
- PY CB Eth Switch/IBP 1Gb 36/12
- PY CB Eth Switch/IBP 1Gb 18/6

Port Groups Area (IBP)

The following information is only displayed for a LAN switch blade operating in IBP mode.

Group

The name of a port group configured on the selected LAN switch blade is displayed.

Group Type

The type of this port group is displayed.

One of the following is displayed:

- Port Group
- VLAN Port Group
- Service LAN
- Service VLAN

VLAN IDs

VLAN IDs assigned to this port group are displayed.

Downlink Ports

The name of the downlink ports assigned to this port group is displayed.

Uplink Set

The name of the UplinkSet assigned to this port group is displayed.

Uplink Sets(IBP)

The following information is only displayed for a LAN switch blade operating in IBP mode.

Uplink Set

The name of an UplinkSet (set of external ports) configured on the selected LAN switch blade is displayed.

Active Ports

The name of the active port within the port backup configuration of this UplinkSet is displayed.

Backup Ports

The name of the backup port within the port backup configuration of this UplinkSet is displayed.

Link State

Displays whether link state functionality is enabled or not for this UplinkSet.

- enable
- disable

Port Backup

Displays whether port backup functionality is enabled or not for this UplinkSet.

- enable
- disable

IGMP Snooping

Displays whether IGMP snooping is enabled or not for this UplinkSet.

- enable
- disable

LACP

Displays whether LACP is enabled or not for this UplinkSet.

- enable
- disable

Network links

Resource Name (left side)

The name of the selected LAN switch blade is displayed.

I/F (left side)

The port name of the LAN switch blade is displayed.

For PY CB 10Gb FEX Nexus B22, internal ports are displayed as 1/1 - 1/16, external ports (from number 1 to 8) are displayed as -/17 - -/24.

I/F (right side)

The interface name of the resource connected to the LAN switch blade is displayed.

Resource Name (right side)

The name of the resource connected to the LAN switch blade is displayed.



Information about connections with network devices is not displayed.

A.6.5 Network Device Attributes

General

Network device name

The name used to identify a network device is displayed.

System Name (sysName)

The name of the device specified as a network device is displayed.

IP address

The IP address to be used for communication with the admin server is displayed.

Device name (Product name)

The product name of the network device is displayed.

For Converged_Fabric, "Converged_Fabric" is displayed.

For VCS, "VDX" is displayed.

Model

The model name of a network device is displayed.

For Converged_Fabric, "Converged_Fabric" is displayed.
For VCS, a hyphen "-" is displayed.

Vendor

The vendor name of a network device is displayed.

Serial number

A hyphen ("-") is displayed.

Firmware version

The firmware version of a network device is displayed.

Device status

The status of a network device is displayed.

One of the following is displayed:

- normal
- warning
- unknown

Slot

A hyphen ("-") is displayed.

When the support range of network devices is expanded, the following information is also displayed:

Maintenance mode

The status of maintenance mode is displayed.

One of the following is displayed:

- active
- maintenance

Type

The type of a network device is displayed.

One of the following is displayed:

- L2-Switch
- Firewall
- SLB
- Fabric
- ManagementHost

For network devices with multiple types, all types are displayed separated by commas (",").

For virtual appliances, "(virtual)" is displayed following Type.

Fabric Type

The type of the Ethernet Fabric is displayed.

One of the following is displayed:

- C-Fabric
- VCS

This is only displayed when the type is "Fabric".

Location

Displays the location of the network device.

Fabric ID

The Fabric ID of the Ethernet Fabric is displayed.
This is only displayed when the fabric type is "C-Fabric".

VCS ID

The VCS ID of the Ethernet Fabric is displayed.
This is only displayed when the fabric type is "VCS".

VFAB name

The name of VFAB is displayed.
When using Converged Fabric, "defaultVFAB" is displayed.
This is only displayed when the fabric type is "C-Fabric".

VFAB ID

The VFAB ID is displayed.
When using Converged Fabric, "default" is displayed.
This is only displayed when the fabric type is "C-Fabric".

S-TAG

The S-TAG of VFAB is displayed.
When using Converged Fabric, "2" is displayed.
This is only displayed when the fabric type is "C-Fabric".

Operation mode

The operation mode of VFAB is displayed.

- host
- network

This is only displayed when the fabric type is "C-Fabric".

When the support range of network devices is expanded, the following information is also displayed:

Redundant Configuration

Group ID

The group ID is displayed.

Network Device Name

Another device in the redundancy configuration is displayed.
When there are multiple devices, the names of those devices are displayed separated by commas (",").

Hardware Details

Launch Network Device Web UI

A link to the "Web Management Window URL" configured for the network device is displayed.
If no "Web Management Window URL" has been configured, "There is no information to display" is displayed.

Port Properties

Port Number

The number of the port of the selected network device is displayed.

Port Name

The name assigned to the port of the selected network device is displayed.
When the fabric type is "VCS", the VCS interface name is displayed.

Member Port

When the name of a port with link aggregation is displayed for the port name, the port names of the physical port with link aggregation are displayed separated by commas (",").

When the physical port name is displayed as the port name, a hyphen ("-") is displayed.

This is not displayed when an Ethernet Fabric is selected.

Link Status

The operational status of the port is displayed.

One of the following is displayed:

- up
- down
- testing
- unknown
- dormant
- notPresent
- lowerLayerDown

Speed/Duplex Mode

The speed and duplex mode of the operating port are displayed.

When the support range of network devices is expanded, the following information is also displayed:

Link Aggregation Group

When the name of the port that comprises the link aggregation is displayed as the port name, the link aggregation name is displayed.

When the name of the port that comprises the link aggregation is not displayed as the port name, a hyphen ("-") is displayed.

This is only displayed when an Ethernet Fabric is selected.

Port Type

The port type of the network device is displayed.

When the fabric type is "C-Fabric", one of the following is displayed:

- EP
- CIR
- EP(dot1ad)

Displayed when using the EP port for sending and receiving of the IEEE802.1ad frame.

- CIR(dot1ad)

Displayed when using the CIR port for sending and receiving of the IEEE802.1ad frame.

When the fabric type is "VCS", one of the following is displayed:

- Edge
- ISL

This is only displayed when an Ethernet Fabric is selected.

Default VFAB

The relationship with the default VFAB is displayed.

- true

Displayed when belonging to the default VFAB.

- false

Displayed when not belonging to the default VFAB.

This is only displayed when the fabric type is "C-Fabric".

Distribution mode

Displays packet distribution mode for ports.

One of the following is displayed:

- VLAN(S-TAG)
- MAC
- VLAN(C-TAG)
- no-distribution
- VLAN(other)

They are only displayed for IPCOM VA.

VLAN ID

The VLAN ID values used for distribution to an IPCOM VA virtual interface are displayed.

They are only displayed for IPCOM VA.

When the support range of network devices is expanded, the following information is also displayed:

Link Aggregation Properties

This is only displayed when an Ethernet Fabric is selected.

Link Aggregation Group

The link aggregation group name is displayed.

Port Name

The port name of the link aggregation port is displayed.

When the fabric type is "C-Fabric", "-" is displayed.

When the fabric type is "VCS", the port channel name is displayed.

Member Port:Link Status

When the fabric type is "C-Fabric", the name of the port that comprises the link aggregation and the link status is displayed in the format of "Port Name: Link Status".

When the fabric type is "VCS", the name of the VCS interface that comprises the link aggregation and the link status is displayed in the format of "VCS Interface Name: Link Status".

Default VFAB

The relationship with the default VFAB is displayed.

- true

Displayed when belonging to the default VFAB.

- false

Displayed when not belonging to the default VFAB.

This is only displayed when the fabric type is "C-Fabric".

VLAN

VLAN ID

A list of VLAN IDs set in the selected network device is displayed.

When the fabric type is "C-Fabric", only VLANs that are defined for the default VFAB are displayed.

Untagged Port(s)

A list of ports set with a port VLAN ID is displayed.

The logical port for link aggregation is not displayed.

When the fabric type is "C-Fabric", only VLANs that are defined for the default VFAB are displayed.
Some VLANs which have been configured with an AMPP function for VCS fabrics may not be displayed.

Tagged Port(s)

A list of ports set with tagged VLAN ID(s) is displayed.

The logical port for link aggregation is not displayed.

When the fabric type is "C-Fabric", only VLANs that are defined for the default VFAB are displayed.

When the support range of network devices is expanded, the following information is also displayed:

Link Data

Resource Name (left side)

The name of the selected network device is displayed.

I/F (left side)

The port name of the network device is displayed.

When the fabric type is "VCS", the VCS interface name is displayed.

I/F (right side)

The interface name of the resource connected to the network device is displayed.

When the fabric type of the resource to connect is "VCS", the VCS interface name is displayed.

Resource Name (right side)

The name of the resource connected to the network device is displayed.

When the support range of network devices is expanded, the following information is also displayed:

Login Information

Tenant

Displays the name of the tenant that can be used as login information for the network device.

If the network device type is "L2-Switch", a hyphen ("-") is displayed.

IP Address

The IP address which the network device logs into is displayed.

Port Number

The port number which the network device logs into is displayed.

Protocol

The name of the protocol used to login to the network device is displayed.

User ID

The user name used to login to the network device is displayed.

Authority

The privileges of the user used to login to the network device are displayed.

Authentication

The user authentication method for the network device is displayed.

Login Check

An account information check result is displayed.

One of the following is displayed:

- successful
- failed
- unchecked

When the support range of network devices is expanded, the following information is also displayed:

Monitoring Settings

SNMP community name

Displays the community name used for SNMP communications with the network device.

Monitoring method

The type of monitoring used on the network device is displayed.

One of the following is displayed:

- None
- ping
- SNMP (Simple Network Management Protocol)
- NETCONF

When multiple monitoring methods are specified, all of the monitoring methods are displayed separated by commas (",").

Monitoring interval (sec)

Displays the monitoring interval (in seconds) for the network device.

Retry count

Displays the number of retries when monitoring of the network device fails (no response before timeout).

Timeout(sec)

Displays the time (in seconds) a response is waited for before it is determined monitoring of the network device has failed.

A.6.6 Virtual Fabric Attributes

General Area

VFAB name

The name of VFAB is displayed.

VFAB ID

1 - 3,000 is displayed for VFAB ID.

S-TAG

101 - 3,000 is displayed for VFAB S-TAG.

Operation mode

The operation mode of VFAB is displayed.

- host
- network

Port Properties Area

Port Number

The numbers of the ports related to the selected virtual fabric is displayed.

Port Name

The name assigned to the port related to the selected virtual fabric is displayed.

Link Status

The operational status of the port is displayed.
One of the following is displayed:

- up
- down
- testing
- unknown
- dormant
- notPresent
- lowerLayerDown

Speed/Duplex Mode

The speed and duplex mode of the operating port are displayed.

Link aggregation group name

When the name of the port that comprises the link aggregation is displayed as the port name, the link aggregation name is displayed.
When the name of the port that comprises the link aggregation is not displayed as the port name, a hyphen ("-") is displayed.

Port Type

The port type of the network device is displayed.
One of the following is displayed:

- EP
- CIR
- EP(dot1ad)
Displayed when using the EP port for sending and receiving of the IEEE802.1ad frame.
- CIR(dot1ad)
Displayed when using the CIR port for sending and receiving of the IEEE802.1ad frame.

Link aggregation information

Link aggregation group name

The link aggregation group name is displayed.

Port Name

A hyphen ("-") is displayed as the port name of the link aggregation port.

Member Port:Link Status

The name of the port and the link status that comprise the link aggregation are displayed in the link status "Port Name: Link Status".

VLAN

VLAN ID

A list of the VLAN IDs set in the selected virtual fabric is displayed.

Untagged Port(s)

A list of ports set with a port VLAN ID is displayed.
The logical port for link aggregation is not displayed.

Tagged Port(s)

A list of ports set with tagged VLAN ID(s) is displayed.
The logical port for link aggregation is not displayed.

A.6.7 Power Monitoring Devices (PDU or UPS) Attributes

General Area

Device name

The name used to identify a PDU or UPS is displayed.

Admin LAN (IP address)

The IP address on the admin LAN is displayed.

Device type

The device type (PDU or UPS) is displayed.

Model

The model name of the PDU or UPS is displayed.

Comment

Comments entered when registering a PDU or UPS are displayed.

Hardware Details Area

Serial number

The serial number of the PDU or UPS is displayed.

Voltage

The voltage supplied to the PDU or UPS is displayed.

Hardware version

The hardware version of the PDU is displayed.
This is not displayed for UPSs.

Firmware version

The firmware version of the device (PDU or UPS) is displayed.

Date of manufacture

The date of manufacture of the PDU or UPS is displayed.

Outlets

The number of outlets provided by the PDU is displayed.
This is not displayed for UPSs.

Intended orientation

The intended orientation (horizontal or vertical) of the PDU is displayed.
This is not displayed for UPSs.

A.6.8 Management Software Attributes

General Area

Management software name

The name used to identify the management software is displayed.

Type

The type of the management software is displayed.

One of the following is displayed:

- vCenter Server
- SCVMM
- VIOM

IP address

The IP address used to connect to the management software is displayed.

Status

The status of the management software is displayed.



For the following types of management software, [normal] is always displayed, regardless of the status.

- VIOM
- SVFAB
- Horizon View

Management software

A link to the web interface of the management software is displayed.

A.7 [Recovery Settings] Tab

The [Recovery Settings] tab displays a list of spare servers assigned to the resource selected in the server resource tree. The table below shows the information displayed in the [Recovery Settings] tab.

[Recovery Settings] Tab

Server Name

The name used to identify a physical OS or VM host is displayed.

Admin LAN IP Address

The IP address on the admin LAN is displayed.

Primary Server

The name of the server on which the physical OS or VM host is operating is displayed.

Switchover State

The current switchover state is displayed.

Spare Server

The configured spare server is displayed.

The switchover state is indicated by an arrow shown next to the currently active Primary Server. The messages "Switchover in progress", "Failback in progress", or "Takeover in progress" are displayed respectively during a server switchover, failback, or takeover process. If more than one spare server has been set, the first server listed is the one that is currently running.

Clicking a column heading in this list will change the color of the selected column and sort the displayed recovery settings in either ascending or descending order.

In each page of the list, 10 items can be displayed. It is possible to move forwards and backwards by single pages, and to the first or last page.

A.8 [Image List] Tab

The [Image List] tab displays information regarding available images. Those lists can be used to manage both system images and cloning images.

The following two tables list the items that are displayed in System Image List and Cloning Image List.

System Image List

Server Name

The name used to identify a physical OS or VM host is displayed.

Version

The latest version of the system image is displayed.

Backup Date

The date and time of the most recent system image backup is displayed.

Comment

Comments describing the system image are displayed.

Cloning Image List Area

Cloning Image Name

The name used to identify a cloning image is displayed.

Version

The version of the cloning image is displayed.

Collection Date

The name used to identify a cloning image is displayed.

OS

The name of the operating system stored in the cloning image is displayed.

Comment

Comments describing the cloning image are displayed.

Right-clicking a resource in the list displays a list of available operations in a popup menu.

Refer to "[A.2.2 Popup Menus](#)" for details on the operations available from popup menus.

Clicking a column heading in this list will change the color of the selected column and sort images in either ascending or descending order. In each page of the list, 10 items can be displayed. It is possible to move forwards and backwards by single pages, and to the first or last page.

A.9 Event

This section describes the event area of the ROR console.

Figure A.12 Event

Status	Date	Resource Name	Event ID	Event Log
Info	2013-10-07 22:37:42	Tech	21144	FJSVrc:INFO:21144:registering SVFAB management software:comp
Info	2013-10-07 22:37:42	Tech	21143	FJSVrc:INFO:21143:registering SVFAB management software:starte
Info	2013-10-07 22:30:51	Tech1	21144	FJSVrc:INFO:21144:deleting SVFAB management software:comple
Info	2013-10-07 22:30:50	Tech1	21143	FJSVrc:INFO:21143:deleting SVFAB management software:started
Info	2013-10-07 19:38:04	Tech1	21144	FJSVrc:INFO:21144:registering SVFAB management software:comp
Info	2013-10-07 19:38:04	Tech1	21143	FJSVrc:INFO:21143:registering SVFAB management software:starte
Info	2013-10-07 19:27:01	-	21144	FJSVrc:INFO:21144:registering license key:completed
Info	2013-10-07 19:27:00	-	21143	FJSVrc:INFO:21143:registering license key:started
Info	2013-10-07 17:49:57	bx800-2	21144	FJSVrc:INFO:21144:reboot server:completed
Info	2013-10-07 17:49:52	bx800-2	21143	FJSVrc:INFO:21143:reboot server:started

The event log displays a history of events that have occurred on managed resources. These events are added to the log automatically. Each event provides the following information.

Event Information

Status

Displays the level of the event.

There are three levels: "Error", "Warning", or "Info".

Date

Date and time at which the event occurred.

Resource Name

Name of the resource associated with the event.

Event ID

Identifier related to the event.

No event ID is displayed for network resources.

Event Log

Content of the event.

When the link in the [Event Log] column is clicked, an error dialog is displayed. The error dialog provides detailed information of events.

Events can be filtered using the checkboxes displayed in the window.

Selecting a checkbox will show the events whose status corresponds to that of the selected checkbox. Clearing a checkbox will hide such events.

When the [Filter] button is clicked in the window, the [Filter Settings] dialog is displayed. For the events displayed in the list, the necessary conditions can be set after selecting "match all" or "match any":

- Event Log
- Date

The conditions set for events are displayed above the list. To clear the conditions, click the [x] displayed on the right of the list.

Clicking a column heading will change the color of the selected column and sort events in either ascending or descending order.

In each page of the list, 10 items can be displayed. It is possible to specify the page to display, move forwards and backwards by single pages, and move to the first or last page.

Note

When a resource's status becomes "fatal", its related event shows an "Error" status in the [Status] column. For this reason, the actual status of a resource should be confirmed from either the resource tree or the [Resource List] tab.

Information

For the SPARC Enterprise T series, the following levels are displayed for SEVERITY values of hardware SNMP Trap MIBs (SUN-HW-TRAP-MIB.mib).

- When SEVERITY is Critical or Major:
"Error" is displayed.
- When SEVERITY is Minor:
"Warning" is displayed.
- When SEVERITY is Informational:
"Info" is displayed.

A.10 Recent Operations

This section describes the recent operations area of the ROR console.

Figure A.13 Recent Operations



Operation	Started	Status
 vm3-1 - Server Power OFF	2012-05-02 19:07:22	2012-05-02 19:07:52 (Completed)
 BX600-Jan3 - LAN Switch Registration	2012-05-02 19:06:35	2012-05-02 19:06:38 (Completed)
 BX900-8 - Server Power ON	2012-05-02 19:05:28	2012-05-02 19:05:57 (Completed)

The recent operations area shows the status of operations that were recently performed. The result of a completed operation shows the operation's completion time and the related resource name. For operations that are still running, a progress bar is shown to indicate the current progress state.

Each operation displayed in the recent operation area provides the following information.

Information Displayed in the Recent Operations Area

Operation

The executed operation and the target resource name are displayed.

The process name is displayed while the process is being executed.

Started

The date and time at which the operation was started is displayed.

Status

The status of the executed operation is displayed.

The date and time at which the process was completed is displayed.

When the link in the [Operation] column is clicked, the [Progress Details] dialog is displayed.

The [Progress Details] dialog displays the following information:

Progress List

The list of the executed processes and the status are displayed for the selected operation.

If an operation is performed simultaneously for multiple resources, the processes are displayed in a tree view for each target resource.

Message List

The list of any error messages that occurred during the operation is displayed.

Detailed information is displayed under the list when each message is selected.

Cancel

For operations that can be canceled, the [Cancel] link is displayed to the right of the [Status] column.

Clicking this link displays a confirmation dialog for canceling the operation.

A.11 Dialogs

This section explains how to enable or disable display of some of the confirmation (or warning) dialogs used by the ROR console.

Use the following procedure to change dialog display settings:

1. Select [Tools]-[Options] from the ROR console menu.

The [Options] dialog is displayed.

2. Click the "Dialog" category title, and change the following settings in the displayed area.

Dialog display options (checkboxes)

To disable further display of a confirmation or warning dialog, select its corresponding checkbox.

To restore display of a disabled dialog, deselect its corresponding checkbox.

[Select All] button

Selects all dialog checkboxes.

[Deselect All] button

Deselects all dialog checkboxes.

3. Click the [Apply] button.

The new settings are applied.

Appendix B Format of CSV System Configuration Files

This appendix explains the format of the CSV system configuration files used by Resource Orchestrator's pre-configuration function.

B.1 Obtaining the System Configuration File (CSV Format)

The system configuration files can be obtained as follows.

- From the selection window of the Resource Orchestrator DVD-ROM [Windows]

Inserting the Resource Orchestrator DVD-ROM in the CD-ROM drive automatically displays the selection window. Select [Tool] and click "System configuration file (CSV format)". The CSV file will be opened from the associated application (such as Excel). Check the file content and save it.

Information

If the selection window does not open, execute "RcSetup.exe" from the DVD-ROM drive.

- From the Resource Orchestrator DVD-ROM

Set the Resource Orchestrator DVD-ROM in the DVD-ROM drive and copy the following file.

[Windows]

DVD-ROM_drive\template\ja\template.csv

[Linux]

DVD-ROM_mount_point/template/ja/template.csv

- From the ROR console

The System Configuration Template can be obtained from a Resource Orchestrator manager installation.

1. Open and log in to the ROR console according to "[Chapter 1 Login and Logout](#)".
2. Select [File]-[System Configuration File]-[Download Template] from the ROR console menu.
Displays the [File Download] window.
3. Click the [Save] button.
4. Specify the destination directory and the file name.
5. Click the [Save] button.

B.2 File Format

The system configuration files (CSV format) used for pre-configuration are comma (",") delimited.

The format of each line is given below:

- File Format Definition

The first line of the file must begin with the following:

```
RCXCSV,V3.5
```

Point

Resource Orchestrator can import the following system configuration file formats.

- RCXCSV,V1.0
- RCXCSV,V2.0
- RCXCSV,V3.0

- RCXCSV,V3.1
- RCXCSV,V3.2
- RCXCSV,V3.3
- RCXCSV,V3.4
- RCXCSV,V3.5

However, system definition files are always exported in the most recent format: importing a file in an older format and re-exporting it will produce a file in the latest format.

Note

Although each RCXCSV version has a different format, those formats are retro-compatible (newer formats include all the information defined in older formats).

As detailed below, some sections (described in "[B.3 Resource Definitions](#)") are only available with the latest format(s).

- RCXCSV V2.0 and Later
"LanSwitchNet", "ServerAgent", "ServerVMHost", "PowerDevice", "Memo"
 - RCXCSV V3.0 and Later
"VMManager"
 - RCXCSV V3.1 and Later
"SPARCEnterprise"
 - RCXCSV V3.2 and Later
"PRIMERGYPartitionModelChassis", "PRIMERGYPartitionModelServer"
 - RCXCSV V3.3 and Later
"Subnet", "SPARCEnterprisePartitionModelChassis", "SPARCEnterprisePartitionModelServer", "MonitorSetting"
 - RCXCSV V3.4 and Later
"VIOManager"
 - RCXCSV V3.5 and Later
"SPARC", "SPARCM10PartitionModelChassis", "SPARCM10", "SPARCM10PartitionModelServer"
- SPARC Enterprise (M3000-/T series) performs import/export of a system configuration file (CSV format) by a section name [SPARC].
The section name [SPARCEnterprise] only imports a system configuration file (CSV format).

- Comment

The following lines are assumed to be comments and are skipped:

- Lines that begin with the symbol ("#")

Example

```
#Development environment
definition
```

- Lines that consist of only blank spaces (" "), tab characters, or linefeed code
- Lines that contain only commas (",")
- Unrecognized resource definition

- Resource Definitions

Create the resource definition using the following format. Describe the same type of resource in the same section.

- Resource Definition Format

[Section name] Section Header Operation column, Parameter [,parameter]...

- Section Name

This describes the resource type.

- Section Header

This describes the parameter type unique to the resource.



Do not enter any comments between the section name and section header.

- Operation Column

This describes the operation type for the resource. The following characters can be used in the operation column.

- new

Register

- change

Modification

- Hyphens, ("-")

Do nothing

- Parameters

This describes the parameter value to be set.



The order of operation and parameter columns should follow the order defined in section header under "[B.3 Resource Definitions](#)".

Allowed Characters

For details on the characters allowed for each resource definition, refer to "[B.3 Resource Definitions](#)". Optional parameters can be omitted by using hyphens ("-").

However, hyphens ("-") are seen as valid characters for user names, passwords, and SNMP communities. Note that if extra commas (",") are added to the end of a line, those will be simply ignored without errors.

Backslashes ("\") and double quotations (") will be displayed differently in the ROR console from how they appear in the system configuration file.

Refer to the following table for details on such differences.

Table B.1 Differences between System Configuration Files' Contents and Display in the ROR Console

Content of a System Configuration File (CSV)	Display in the ROR Console
\\	\
\n	Line break
""	"

Content of a System Configuration File (CSV)	Display in the ROR Console
, (*)	,

* Note: The whole value must be enclosed by double quotations (").



Example

- CSV Content

```
"a\nb,\n"
```

- Display in the ROR Console

```
A
b,\n
```

Order of Section Definition

Section order and section name are shown below.
Moreover, the section definition order is fixed.

Table B.2 Section Order and Section Names

Order	Section Name
1	Subnet
2	VIOManager
3	Chassis
4	PRIMERGYPartitionModelChassis
5	SPARCEnterprisePartitionModelChassis
6	SPARCM10PartitionModelChassis
7	LanSwitch
8	LanSwitchNet
9	Server
10	SPARCEnterprise
11	PRIMERGYPartitionModelServer
12	ServerNet
13	SPARCEnterprisePartitionModelServer
14	SPARC
15	SPARCM10
16	SPARCM10PartitionModelServer
17	ServerWWNN (*1)
18	SpareServer (*1)
19	VMManager
20	ServerAgent (*2, *3)
21	ServerVMHost (*2, *3)
22	MonitorSetting
23	PowerDevice

Order	Section Name
24	Memo (*2)

*1: When loading from the system configuration template in the Excel format, the operation column information will be skipped.

*2: When loading from the system configuration template in the Excel format, the whole section will be skipped.

*3: Do not enter the information of the same physical server both in the "ServerAgent" and "ServerVMHost" section.

System backup information is automatically added to the end of the system configuration file when exporting in the CSV format. The sections after the line below contain the backup information. The backup information is skipped when loading from the system configuration template in the Excel format.

#Do not edit the following information, which is used to recover the manager.

Do not modify the backup information, as it is automatically created. Note that these sections do not have to be defined if the system configuration file is created for new system configuration.

Note

- If a system configuration file (CSV format) is imported and then exported, the line order after export may differ from the line order before import.

The following information will also be deleted:

- Comments lines
- Strings enclosed in parenthesis "(") indicating omitted values
- Extra commas at the end of lines (",")
- As with chassis for server blades, and chassis for LAN switch blades, items that need to be registered in advance to enable registration of other should be defined in the system configuration file or registered in advance.

Character Code

The system configuration files (CSV format) used for pre-configuration are saved using ASCII (often referred to as "ANSI" in Windows systems). When files that use a character code other than ASCII are imported, the system may not operate correctly.

When directly editing configuration files using a text editor, please do not save the file using a character code other than ASCII.

B.3 Resource Definitions

This section explains the resource definition information specified system configuration files.

Admin LAN Subnet Data

- **Section Name**

Enter [Subnet] as the section name.

- **Section Header**

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

subnet_name

Enter the subnet name.

Enter a character string beginning with an alphabetic character and containing up to 16 alphanumeric characters, underscores (" _"), hyphens ("-"), and periods (".").

network_address

Enter the network address for the subnet used as the admin LAN.
Enter valid values for the network address.

subnet_mask

Enter valid values for the subnet mask.

gateway

Enter the settings for the gateway used for communication with the admin server on the admin LAN.

VIOM Data

- Section Name

Enter [VIOManager] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

name

Specify "VIOM".

ip_address

Enter the IP address of the terminal on which VIOM is installed.
Specify "127.0.0.1".

login_name

Enter the name of a VIOM user account.
When specifying a domain, use the following syntax: "*domain_name\user_name*".

login_passwd

Enter the password of the above VIOM user account.

passwd_enc

Enter one of the following.

- If login_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

Chassis Data

- Section Name

Enter [Chassis] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the name that will be used to identify the chassis.

Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").



Chassis names should be unique between all chassis. Names are not case-sensitive.

ip_address

Enter the same IP address as that set on the management blade.

Enter a string of numeric values (between 0 and 255) and periods.



IP addresses should be unique between all resources.

snmp_community_name

Enter the same SNMP community (read-write permission) as that set on the management blade.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

PRIMEQUEST Chassis Management Data

- Section Name

Enter [PRIMERGYPartitionModelChassis] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the name that will be used to identify the chassis.

Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").



Chassis names should be unique between all chassis.

Names are not case-sensitive.

ip_address

Enter the same IP address as that set on the management board.

Enter a string of numeric values (between 0 and 255) and periods.



IP addresses should be unique between all resources.

snmp_community_name

Enter the same SNMP community (read-write permission) as that set on the management board.
Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

mgmt_user_name

Enter the name of a remote server management user account with administrative privileges.
This user name must be between 8 and 16 alphanumeric characters long.

mgmt_passwd

Enter the password of the remote server management account.
This password must be between 8 and 16 alphanumeric characters long.

mgmt_passwd_enc

Enter one of the following.

- If mgmt_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

SPARC Enterprise M4000/M5000/M8000/M9000 Chassis Management Data

- Section Name

Enter [SPARCEnterprisePartitionModelChassis] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the name that will be used to identify the chassis.
Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").



Chassis names should be unique between all chassis.
Names are not case-sensitive.

ip_address

Enter the same IP address as that configured on the XSCF.
Enter a string of numeric values (between 0 and 255) and periods.



IP addresses should be unique between all resources.

snmp_community_name

Enter the name of a SNMP community (with read permission) configured on this server's remote management controller (XSCF).
Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

mgmt_user_name

Enter the name of a remote management controller (XSCF) user account with administrative privileges ("platadm" privileges).
Enter a string of up to 31 alphanumeric characters, hyphens ("-"), and underscores ("_"). This name must start with an alphabet character.

mgmt_passwd

Enter the password of the remote management controller (XSCF) user account.
Enter up to 32 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols.
"!","@","#","\$","%","^","&","*","[","]","{","}", "(" , ")" , "-" , "+" , "=" , "~" , "," , ">" , "<" , "/" , "" , "?" , ";" , ":"

mgmt_passwd_enc

Enter one of the following.

- If mgmt_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

SPARC M10-4S Chassis Management Data

- Section Name

Enter [SPARCM10PartitionModelChassis] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the name that will be used to identify the chassis.
Enter a character string beginning with an alphabetical character and containing up to 10 alphanumeric characters and hyphens ("-").



Chassis names should be unique between all chassis.
Names are not case-sensitive.

ip_address

Enter the same IP address as that configured on the XSCF.
Enter a string of numeric values (between 0 and 255) and periods.



IP addresses should be unique between all resources.

snmp_community_name

Enter the name of a SNMP community (with read permission) configured on this server's remote management controller (XSCF).
Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

mgmt_user_name

Enter the name of a remote management controller (XSCF) user account with administrative privileges ("platadm" privileges).
Enter a string of up to 31 alphanumeric characters, hyphens ("-"), and underscores ("_"). This name must start with an alphabet character.

mgmt_passwd

Enter the password of the remote management controller (XSCF) user account.
Enter up to 32 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols.
"! ", "@ ", "# ", "\$ ", "% ", "^ ", "& ", "* ", "[", "]" ", "{ ", "}" ", "(", ")" ", "-" ", "+" ", "=" ", "~ ", " ", "> ", "< ", "/" ", "" ", "?" ", ":" "

mgmt_passwd_enc

Enter one of the following.

- If mgmt_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

LAN Switch Blade Data

- Section Name

Enter [LanSwitch] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the chassis name (the value of "chassis_name" in the [Chassis] section).

slot_no

Enter the slot number where the LAN switch blade is installed. Enter a number between 1 and 8.

switch_name

Enter the name to assign to this LAN switch blade.
Enter a string of up to 15 alphanumeric characters, underscores ("_"), and hyphens ("-").



Note

LAN switch blade names should be unique between all LAN switch blades. The names are case-sensitive.

ip_address

Enter the same IP address as that set on the LAN switch blade.
Enter a string of numeric values (between 0 and 255) and periods.
For a LAN switch blade PY CB 10Gb FEX Nexus B22, do not enter anything.
For a LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2, enter the oob IP address.



Note

- IP addresses should be unique between all resources.
- When entering the oob IP address for a LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2, be sure to leave cfab_ip_address blank (" ").

cfab_ip_address

Enter the value for this item when defining Converged Fabric mode of a LAN switch blade PY CB Eth Switch 10/40Gb 18/8+2.
Enter the virtual domain representative IP address of the fabric configured for the LAN switch blade.
Enter a string of numeric values (between 0 and 255) and periods.



Note

When entering the virtual domain representative IP address of the fabric, be sure to leave ip_address blank ("").

snmp_community_name

Enter the same SNMP community (read-only permission) as that set on the LAN switch blade.
Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").
For a LAN switch blade PY CB 10Gb FEX Nexus B22, do not enter anything.

user_name

Enter the name of the user account used to remotely log in to the LAN switch blade.
For a LAN switch blade PY CB DCB SW 10Gb 18/6/6, enter the name of the administrator account for the LAN switch blade.
Enter up to 64 characters, including alphanumeric characters (upper or lower case), underscores ("_"), or hyphens ("-").
For a LAN switch blade PY CB 10Gb FEX Nexus B22, do not enter anything.

passwd

Enter the password of the above user account (for remote login).
Enter a string of up to 80 alphanumeric characters and symbols (ASCII character codes: 0x20, 0x21 or 0x23 to 0x7e) and no double-quotations (""). Passwords entered in this field are seen as plain text passwords.
For a LAN switch blade PY CB 10Gb FEX Nexus B22, do not enter anything.

passwd_enc

Enter one of the following. For a LAN switch blade PY CB 10Gb FEX Nexus B22, do not enter anything.

- If passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

privileged_passwd

Enter the admin password of the above user account.
Enter a string of up to 80 alphanumeric characters and symbols (ASCII character codes: 0x20, 0x21 or 0x23 to 0x7e) and no double-quotations (""). Passwords entered in this field are seen as plain text passwords.
For a LAN switch blade PY CB 10Gb FEX Nexus B22, do not enter anything.

privileged_passwd_enc

Enter one of the following. For a LAN switch blade PY CB 10Gb FEX Nexus B22, do not enter anything.

- If privileged_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

product_name

Enter the model of the LAN switch blade. Note that if a hyphen ("-") is entered, it is treated as "BX600 GbE Switch Blade 30/12".
One of the following models can be entered.

- PY CB Eth Switch/IBP 1Gb 36/12
- PY CB Eth Switch/IBP 1Gb 36/8+2

- PY CB Eth Switch/IBP 1Gb 18/6
- PY CB Eth Switch/IBP 10Gb 18/8
- PY CB Eth Switch 10/40Gb 18/8+2
- PY CB DCB SW 10Gb 18/6/6
- PY CB 10Gb FEX Nexus B22
- BX600 GbE Switch Blade 30/12
- PRIMERGY BX600 GbE Switch 16/2x10Gb
- PRIMERGY BX600 GbE Switch 16x1Gb
- Cisco Catalyst Blade Switch 3040

connection_type

Enter the connection method to use for the LAN switch blade.

If you configure "ssh" for a LAN switch blade which does not support SSH, or specify a character string other than ssh, the configuration is regarded as "telnet".

If "PY CB DCB SW 10Gb 18/6/6" or "PY CB Eth Switch 10/40Gb 18/8+2" is specified for the product name (product_name) and connection_type is specified as a character string other than telnet, the configuration is regarded as being "ssh".

- For telnet
"telnet"
- For SSH
"ssh"

VLAN Data for LAN Switch Blades

- Section Name

Enter [LanSwitchNet] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the chassis name (the value of "chassis_name" in the [Chassis] section).

port_no

Enter the port number of an external LAN switch blade port. Enter numeric characters. The port number that can be specified is different depending on the model type.

For details, refer to the manual of the LAN switch blade to be used.

vlan_id (optional)

Enter the VLAN ID and tag type ("/T" for tagged or "/U" for untagged) to be assigned to the specified LAN switch blade port.

Enter a VLAN ID followed by tag types. To specify multiple VLAN IDs, separate each set of VLAN settings using semicolons (";"). Both tagged ("/T") and untagged ("/U") VLAN IDs can be used together, but only one untagged ("/U") type is allowed.



Example

10/U
10/U;20/T;30/T
10/T;20/T

Note

If a hyphen ("-") is entered, VLAN settings will not be performed.

The settings in this section will be ignored for PRIMERGY BX900/BX400 LAN switch blades operating in IBP mode or Converged Fabric mode.

The settings in this section will be ignored for a LAN switch blade PY CB DCB SW 10Gb 18/6/6 or PY CB 10Gb FEX Nexus B22.

Server Management Information

- Section Name

Enter [Server] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the chassis name (the value of "chassis_name" in the [Chassis] section).

Note

This field is only required for PRIMERGY BX servers.

slot_no

Enter the slot number where the server blade is installed. Enter a number between 1 and 18.

Note

- This field is only required for PRIMERGY BX servers.
- When a server blade is registered, Resource Orchestrator does not check the actual slot position, or whether it has been installed properly.
- When registering multi-slot servers, enter only the master slot number.

server_name

Enter the resource name that will be used to identify the server. Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-"). If enclosed by parentheses "()", this server will be seen as being in a switched over state, and this line will be ignored when importing the system definition file.

Note

Server names should be unique between all servers. Names are not case-sensitive.

ip_address

Enter the same IP address as that set within the server's operating system.

Enter a string of numeric values (between 0 and 255) and periods.

Note

IP addresses should be unique between all resources.

mac_address

Enter the MAC address of the admin LAN network interface: NIC1 (Index1).

Enter a string delimited by hyphens ("-") or colons (":") ("xx-xx-xx-xx-xx-xx" or "xx:xx:xx:xx:xx:xx").

second_mac_address

Enter the MAC address of the network interface used for the HBA address rename setup service or for admin LAN redundancy.

The second network interface (Index 2) should be used.

Enter a string delimited by hyphens ("-") or colons (":") ("xx-xx-xx-xx-xx-xx" or "xx:xx:xx:xx:xx:xx").

Note

- This field can be omitted in the following cases.
 - When not using the HBA address rename setup service
 - When not using GLS for admin LAN redundancy on the managed server
 - For a spare server whose primary servers are not using admin LAN redundancy
- The "second_mac_address" header is the equivalent of the "hbaar_mac_address" header defined in RCXCSV V3.0.
"hbaar_mac_address" can only be used when "RCXCSV,V3.0" is specified at the top of the imported system configuration file.
However, this header is automatically changed to "second_mac_address" when exporting a new system configuration file.

snmp_community_name

Enter the name of the SNMP community (read permission) assigned to this server.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

Note

This field is not necessary when using servers other than the PRIMERGY series.

ipmi_ip_address

Enter the IP address of this server's remote management controller.

Enter a string of numeric values (between 0 and 255) and periods.

Note

IP addresses should be unique between all resources.

ipmi_user_name

Enter the name of a remote management controller user account with administrative privileges.

Enter a string of up to 16 alphanumeric characters and symbols (ASCII character codes: 0x20 to 0x7e).

Note

If the name of the current administrator account on the remote management controller is longer than 16 characters, either create a new account or rename the current account (within 16 characters).

ipmi_passwd

Enter the password of the remote management controller user account.

Enter a string of up to 16 alphanumeric characters and symbols (ASCII character codes: 0x20 to 0x7e).

This field can be omitted if no password has been set for this user account.

Note

.....
If the password of the current administrator account on the remote management controller is longer than 16 characters, either create a new account or change its password (within 16 characters).
.....

ipmi_passwd_enc

Enter one of the following.

- If ipmi_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

admin_lan1_nic_number

The index of the NIC to use for the admin LAN.

Enter a number (1 or larger).

Note

.....
This field is only required for PRIMERGY BX servers.
.....

admin_lan2_nic_number

The Index number of NICs used for the HBA address rename setup service or for admin LAN redundancy.

Enter a number (1 or larger).

For the following cases, enter a hyphen ("-").

- When not using the HBA address rename setup service
- When redundancy of the admin LAN for managed servers does not use GLS
- When not using as the spare server of a managed server with redundancy configured

Note

.....
This field is only required for PRIMERGY BX servers.
.....

admin_lan_nic_redundancy

Enter one of the following.

- When using the NIC specified in the admin_lan2_nic_number as the backup for admin LAN redundancy
"ON"
- When not using the NIC specified in the admin_lan2_nic_number as the backup for admin LAN redundancy
"OFF"

SPARC Enterprise M3000/T Series Management Data

- Section Name

Enter [SPARC] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

server_name

Enter the resource name that will be used to identify the server. Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

ip_address

Enter the same IP address as that set within the server's operating system. Enter a string of numeric values (between 0 and 255) and periods.

mgmt_snmp_community_name

Enter the name of a SNMP community (with read permission) configured on this server's remote management controller (ILOM/XSCF).

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

mgmt_ip_address

Enter the IP address of this server's remote management controller (ILOM/XSCF).

Enter a string of numeric values (between 0 and 255) and periods.



Note

IP addresses should be unique between all resources.

mgmt_protocol

Enter the type of the remote management controller (ILOM/XSCF) to manage servers.

- For SPARC Enterprise M3000 servers

"XSCF"

- For T Series

"ILOM"

mgmt_user_name

Enter the user name (For ILOM, Admin privileges, and for XSCF, platadm privileges) of a remote management controller to manage servers (ILOM/XSCF).

- For XSCF

Enter up to 31 characters, including alphanumeric characters, underscores ("_"), or hyphens ("-"). This name should start with an alphabet character.

- For ILOM

Enter between 4 and 16 characters, including alphanumeric characters, underscores ("_"), or hyphens ("-"). This name should start with an alphabet character.

mgmt_passwd

Enter the password of the remote management controller (ILOM/XSCF) to manage a server.

- For XSCF

Enter up to 32 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols.

- For ILOM

Enter between 8 and 16 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols.

"! ", "@ ", "# ", "\$ ", "% ", "^ ", "& ", "* ", "[", "]" ", "{ ", "}" ", "(", ")" ", "-" ", "+" ", "=" ", "~ ", " ", "> ", "< ", "/" ", "" ", "?" ", ";" ", ":" "

mgmt_passwd_enc

Enter one of the following.

- If mgmt_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

FUJITSU M10-1/M10-4 Management Data

- Section Name

Enter [SPARCM10] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

server_name

Enter the resource name that will be used to identify the server. Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

ip_address

Enter the same IP address as that set within the server's operating system. Enter a string of numeric values (between 0 and 255) and periods.

mgmt_snmp_community_name

Enter the name of a SNMP community (with read permission) configured on this server's remote management controller (XSCF). Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

mgmt_ip_address

Enter the IP address of this server's remote management controller (XSCF). Enter a string of numeric values (between 0 and 255) and periods.



Note

IP addresses should be unique between all resources.

mgmt_protocol

Enter the type of the remote management controller (XSCF) to manage servers.
Enter "XSCF".

mgmt_user_name

Enter the name of a remote management controller (XSCF) user account with administrative privileges (platadm privileges).

- For XSCF

Enter up to 31 characters, including alphanumeric characters, underscores ("_"), or hyphens ("-"). This name should start with an alphabet character.

mgmt_passwd

Enter the password of the remote management controller (XSCF) user account.

- For XSCF

Enter up to 32 characters, including alphanumeric characters, blank spaces (" "), and any of the following symbols.

mgmt_passwd_enc

Enter one of the following.

- If mgmt_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

PRIMEQUEST Server Management Data

- Section Name

Enter [PRIMERGYPartitionModelServer] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the chassis name (the value of "chassis_name" in the [PRIMERGYPartitionModelChassis] section).

partition_no

The number of a partition. Enter a number between 0 and 3.

server_name

Enter the resource name that will be used to identify the server. Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-"). If enclosed by parentheses "()", this server will be seen as being in a switched over state, and this line will be ignored when importing the system definition file.



Note

Server names should be unique between all servers. Names are not case-sensitive.

ip_address

Enter the same IP address as that set within the server's operating system.

Enter a string of numeric values (between 0 and 255) and periods.



Note

IP addresses should be unique between all resources.

boot_option

Specify the boot option configured from BIOS when installing the OS.

- When installing using a legacy boot
"legacy"

- When installing using UEFI
"uefi"

Server Blade VLAN Data

- Section Name

Enter [ServerNet] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

server_name

Enter the server name (the value of "server_name" in the [Server] section).

nic_no

This is the index number of the server blade's network interface. Enter a number between 1 and 12.

vlan_id (optional)

Enter the VLAN ID and tag type ("/T" or "/U") to be assigned to the LAN switch blade port connected to this server's network interface.

Enter a VLAN ID followed by tag types. To specify multiple VLAN IDs, separate each set of VLAN settings using semicolons (";"). Both tagged ("/T") and untagged ("/U") VLAN IDs can be used together, but only one untagged ("/U") type is allowed.



Example

10/U

10/U;20/T;30/T

10/T;20/T



Note

If a hyphen ("-") is entered, VLAN settings will not be performed.

Use the following NIC indexes to specify LAN expansion cards (if any was mounted).

- PRIMERGY BX600 Servers
7, 8
- PRIMERGY BX900/BX400 Servers
5 to 12

For the following cases, this section will be ignored.

- PRIMERGY BX900/BX400 LAN switch blades operating in IBP mode or Converged Fabric mode
- A LAN switch blade PY CB 10Gb FEX Nexus B22
- Internal ports of a LAN switch blade PY CB DCB SW 10Gb 18/6/6 for which an Automatic Migration of Port Profile (AMPP) has been configured.

SPARC Enterprise M4000/M5000/M8000/M9000 Server Management Data

- Section Name

Enter [SPARCEnterprisePartitionModelServer] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the chassis name (the "chassis_name" in the [SPARCEnterprisePartitionModelChassis] section).

partition_no

The number of a partition. Enter a number between 0 and 23.

server_name

Enter the resource name that will be used to identify the server.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").



Note

Server names should be unique between all servers.

Names are not case-sensitive.

ip_address

Enter the same IP address as that set within the server's operating system.

Enter a string of numeric values (between 0 and 255) and periods.



Note

IP addresses should be unique between all resources.

FUJITSU M10-4S Server Management Data

- Section Name

Enter [SPARCM10PartitionModelServer] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

chassis_name

Enter the chassis name (the value of "chassis_name" in the [SPARCM10PartitionModelServer] section).

partition_no

The number of a partition. Enter a number between 0 and 23.

server_name

Enter the resource name that will be used to identify the server.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").

Note

Server names should be unique between all servers.
Names are not case-sensitive.

ip_address

Enter the same IP address as that set within the server's operating system.
Enter a string of numeric values (between 0 and 255) and periods.

Note

IP addresses should be unique between all resources.

HBA address rename Information of a Server

- Section Name

Enter [ServerWWNN] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

server_name

Enter the server name (the value of "server_name" in the [Server] section).

port_count

This is the number of ports that use HBA address rename. Enter a number between 1 and 2.

wwnn

Enter the 16-digit hexadecimal WWNN string of the physical server which uses the HBA address rename function.
Enter a hexadecimal string using alphanumeric characters, with "20 0" as the first three characters.

Note

All WWNNs should be unique between all resources (WWNNs are not case-sensitive). Names are not case-sensitive.

Server Switchover Management Information

- Section Name

Enter [SpareServer] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

server_name

Enter the server name (the value of "server_name" in the [Server] section).

spare_server

Enter the physical server name of a server to be assigned as a spare server.

To specify multiple spare servers, separate each server name using semicolons (";"). To remove current spare server settings, enter "-DELETE".

vlan_switch (optional)

Specify whether VLAN settings or port group settings should be automatically transferred to the spare server when a server switchover occurs. Enter "ON", "OFF" or a hyphen ("-").

auto_switch (optional)

This value defines whether to trigger an automatic switchover upon detection of a server failure. Enter "ON", "OFF" or a hyphen ("-").

boot_type

Enter the boot type of the server. Enter one of the following.

- SAN boot
"SAN"
- For local boot
"local"
- When using the VIOM server profile to conduct boot settings
Hyphens, ("-")

spare_server_force_off

Enter whether the spare server is turned off forcibly, when switching over to the spare server. Enter "ON", "OFF" or a hyphen ("-").

spare_server_with_vm_guest

Enter whether the server is switched to a VM host on which a VM guest exists. Enter "ON", "OFF" or a hyphen ("-").

VM Management Software Information

- Section Name

Enter [VMManager] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

name

Enter the name used to identify this VM management software. Enter one of the following.

- When using VMware vCenter Server as VM management software.
"vCenterServer"
- When using System Center Virtual Machine Manager as VM management software.
"SCVMM"

ip_address

Enter the IP address used to connect to this VM management software or a hyphen ("-").

Enter a string of numeric values (between 0 and 255) and periods.

If a hyphen ("-") is entered, this VM management software will be seen as being installed on the admin server.

product

Enter the name of this VM management software. Enter one of the following.

- When using VMware vCenter Server as VM management software.
"vmware-vc"
- When using System Center Virtual Machine Manager as VM management software.
"ms-scvmm"

login_name

Enter the name of the user account set for this VM management software.

Use a string of up to 84 alphanumeric characters and symbols (ASCII character codes: from 0x21 to 0x7e). When specifying a domain, use the following syntax: "*domain_name*\user_name".

login_passwd

Enter the password for this VM management software.

Use a string of up to 128 alphanumeric characters and symbols (ASCII character codes: from 0x21 to 0x7e).

passwd_enc

Enter one of the following.

- If login_passwd is plain text
"plain"
- If the password is encrypted
"encrypted"

Server Agent Management Information

- Section Name

Enter [ServerAgent] as the section name.

This is required when registering multiple agents together (for Windows or Linux managed servers).

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

The "change" operation cannot be used for this section.

server_name

Enter the server name (the value of "server_name" in the [Server] section).

VM Host Management Information

- Section Name

Enter [ServerVMHost] as the section name.

This is required when registering multiple agents together (for VM host managed servers).

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

server_name

Enter the server name (the value of "server_name" in the [Server] section).

vm_login_name

Enter the name of the user account used to remotely log into the VM Host.

vm_login_passwd

Enter the password of the above user account (for remote login).

vm_passwd_enc

Enter one of the following.

- If the password is plain text
"plain"
- If the password is encrypted
"encrypted"

Monitoring Settings

- Section Name

Enter [MonitorSetting] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

server_name

Enter the server name (the value of "server_name" in the [Server] section).

ping_timeout

Enter the time-out value (in seconds) for ping control.

Enter a number from 5 to 3,600.

recovery_action

Enter a recovery process. Enter one of the following.

- Reboot
"reboot"
- Reboot (Forced)
"force_reboot"
- Switchover
"switchover"
- Reboot and Switchover
"reboot_and_switchover"
- Reboot (Forced) and Switchover
"force_reboot_and_switchover"

reboot_count

Enter the number of times to reboot. Enter a number from 1 to 3.

Power Monitoring Device Data

- Section Name

Enter [PowerDevice] as the section name.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

device_name

Enter the name that will be used to identify the power monitoring device.

Enter a character string beginning with an alphabetical character and containing up to 15 alphanumeric characters and hyphens ("-").



.....
Device names should be unique between all power monitoring devices. The names are case-sensitive.
.....

ip_address

Enter the same IP address as that set on the power monitoring device.

Enter a string of numeric values (between 0 and 255) and periods.



.....
IP addresses should be unique between all resources.
.....

snmp_community_name

Enter the same SNMP community (read-only permission) as that set on the power monitoring device.

Enter a string of up to 32 alphanumeric characters, underscores ("_"), and hyphens ("-").

voltage

Enter the voltage (V) that is being supplied to the power monitoring device. Enter a number between 10 and 999.



.....
Resource Orchestrator calculates power consumption data using the electrical current value obtained from the power monitoring device and its specified voltage.
.....

comment (optional)

Enter any comments for the power monitoring device.

Enter up to 128 alphanumeric characters or symbols (ASCII characters 0x20 to 0x7e).



.....
A line break is counted as one character. Use "Alt+Enter" to enter line breaks.
.....

Memo

- Section Name

Enter [Memo] as the section name.

This is required when registering the labels, comments, and contact information (displayed in BladeViewer) using the pre-configuration function.

- Section Header

operation

Enter the desired operation for the current line. Enter a hyphen ("-") to skip this line.

resource_type

Enter the type of the resource for which to set this memo. Enter one of the following.

- When a physical server including a VM host is specified

"physical_server"

- When a VM guest is specified

"vm_guest"

- When contact information is specified

"common"

resource_name

Enter the name of the resource name for which to set this memo. Enter one of the following.

- When "resource_type" is "physical_server"

Enter one of the following.

- Server name ("server_name" of [ServerAgent] section)

- VM host name ("server_name" of [ServerVMHost] section)

- When "resource_type" is "vm_guest"

Enter the registered VM guest name

- When "resource_type" is "common"

Do not enter any characters.

label (optional)

This label is used to identify the applications running on each server. Enter up to 32 alphanumeric characters or symbols (ASCII characters 0x20 to 0x7e). Note that if the value of "resource_type" is "common", do not enter anything.



Line breaks ("\n") are not available.

comment (optional)

This is a comment that can be set as an option for each application. If the "resource_type" is "common", this can be used for the contact details, maintenance information, or other information. Enter up to 256 alphanumeric characters or symbols (ASCII characters 0x20 to 0x7e).

B.4 Examples of CSV Format

This section shows an example of the system configuration file in the CSV format.

RCXCSV,V3.5

ServerView Resource Orchestrator

System configuration file

[Subnet]

operation,subnet_name,network_address,subnet_mask,gateway

-.subnet1,172.16.0.0,255.255.0.0,172.16.0.1

-.subnet2,192.168.1.0,255.255.255.0,192.168.1.1

[VIOManager]

operation,name,ip_address,login_name,login_passwd,passwd_enc

-.VIOM,127.0.0.1,administrator,administrator,plain

[Chassis]

operation,chassis_name,ip_address,snmp_community_name

-.chassis01,192.168.3.150,public

[PRIMERGYPartitionModelChassis]

operation,chassis_name,ip_address,snmp_community_name,mgmt_user_name,mgmt_passwd,mgmt_passwd_enc

-.pqchassis0,192.168.3.207,public,administrator,administrator,plain

-.pqchassis1,192.168.3.208,public,administrator,administrator,plain

[SPARCEnterprisePartitionModelChassis]

operation,chassis_name,ip_address,snmp_community_name,mgmt_user_name,mgmt_passwd,mgmt_passwd_enc

-.spechassis,192.168.3.212,public,fujitsu,fujitsu,plain

[SPARCM10PartitionModelChassis]

operation,chassis_name,ip_address,snmp_community_name,mgmt_user_name,mgmt_passwd,mgmt_passwd_enc

-.sparcm10-1,192.168.10.26,public,xscf,Xk8n5z6MfEg=,encrypted

[LanSwitch]

operation,chassis_name,slot_no,switch_name,ip_address,snmp_community_name,user_name,passwd,passwd_enc,privileged_passwd,privileged_passwd_enc,product_name,connection_type

-.chassis01,1,switch-01,192.168.3.161,public,admin,admin,plain,admin,plain,BX600 GbE Switch Blade 30/12,telnet

-.chassis01,2,switch-02,192.168.3.162,public,admin,admin,plain,admin,plain,BX600 GbE Switch Blade 30/12,telnet

[LanSwitchNet]

operation,chassis_name,slot_no,port_no,vlan_id

-.chassis01,1,31,1/U;10/T;20/T

-.chassis01,1,32,1/U

-.chassis01,1,33,1/U

-.chassis01,1,34,1/U

-.chassis01,1,35,1/U

-.chassis01,1,36,1/U

-.chassis01,1,37,1/U

-.chassis01,1,38,1/U

-.chassis01,1,39,1/U

-.chassis01,1,40,1/U

-.chassis01,1,41,1/U

-.chassis01,1,42,1/U

-.chassis01,1,43,1/U

-.chassis01,1,44,1/U

-.chassis01,2,31,1/U;10/T;20/T

-.chassis01,2,32,1/U

-.chassis01,2,33,1/U

-.chassis01,2,34,1/U

-.chassis01,2,35,1/U

-.chassis01,2,36,1/U
-.chassis01,2,37,1/U
-.chassis01,2,38,1/U
-.chassis01,2,39,1/U
-.chassis01,2,40,1/U
-.chassis01,2,41,1/U
-.chassis01,2,42,1/U
-.chassis01,2,43,1/U
-.chassis01,2,44,1/U

[Server]

operation,chassis_name,slot_no,server_name,ip_address,mac_address,second_mac_address,snmp_community_name,ipmi_ip_address,ipmi_user_name,ipmi_passwd,ipmi_passwd_enc,admin_lan1_nic_number,admin_lan2_nic_number,admin_lan_nic_redundancy

-.chassis01,1,blade001,192.168.3.151,,,,,,,,,1,4,ON
-.chassis01,7,blade002,192.168.3.157,,,,,,,,,1,4,ON
-.chassis01,9,blade003,192.168.3.159,,,,,,,,,1,4,ON
-,,,rackmount001,192.168.3.200,00:E5:35:0C:34:AB,,public,192.168.3.199,admin,admin,plain,,,OFF
-,,,rackmount002,192.168.3.202,00:E5:35:0C:34:AC,,public,192.168.3.201,admin,admin,plain,,,OFF

[SPARC]

operation,server_name,ip_address,mgmt_snmp_community_name,mgmt_ip_address,mgmt_protocol,mgmt_user_name,mgmt_passwd,mgmt_passwd_enc

-.spe001,192.168.3.203,public,192.168.3.204,XSCF,fujitsu,fujitsu,plain
-.spe002,192.168.3.205,public,192.168.3.206,ILOM,fujitsu,fujitsu,plain

[SPARCM10]

operation,server_name,ip_address,mgmt_snmp_community_name,mgmt_ip_address,mgmt_protocol,mgmt_user_name,mgmt_passwd,mgmt_passwd_enc

-.Sparcm10-1-11,192.168.10.162,public,192.168.10.22,XSCF,xscf,Xk8n5z6MfEg=,encrypted
-.Sparcm10-1-12,192.168.10.163,public,192.168.10.23,XSCF,xscf,Xk8n5z6MfEg=,encrypted

[SPARCM10PartitionModelServer]

operation,chassis_name,partition_no,server_name,ip_address

-.sparcm10-1,0,sparcm10-1-0,192.168.10.166

[PRIMERGYPartitionModelServer]

operation,chassis_name,partition_no,server_name,ip_address,boot_option

-.pqchassis0,0,pqserver01,192.168.3.209,legacy
-.pqchassis0,1,pqserver02,192.168.3.210,legacy
-.pqchassis0,2,pqserver03,192.168.3.211,legacy

[ServerNet]

operation,server_name,nic_no,vlan_id

-.blade001,1,1/U;10/T;20/T
-.blade001,3,1/U
-.blade001,5,1/U
-.blade002,1,1/U;10/T;20/T
-.blade002,3,1/U
-.blade002,5,1/U
-.blade003,1,1/U
-.blade003,3,1/U
-.blade003,5,1/U
-.blade001,2,1/U
-.blade001,4,1/U
-.blade001,6,1/U
-.blade002,2,1/U

-,blade002,4,1/U
-,blade002,6,1/U
-,blade003,2,1/U
-,blade003,4,1/U
-,blade003,6,1/U

[SPARCEnterprisePartitionModelServer]

operation,chassis_name,partition_no,server_name,ip_address
-,spechassis,3,speserver3,192.168.3.213
-,spechassis,4,speserver4,192.168.3.214

[ServerWWNN]

operation,server_name,port_count,wwnn
-,blade001,1,20 00 00 17 42 51 00 01
-,blade002,1,20 00 00 17 42 51 00 02

[SpareServer]

operation,server_name,spare_server,vlan_switch,auto_switch,boot_type,spare_server_force_off,spare_server_with_vm_guest
-,blade001,blade003,ON,ON,local,OFF,OFF

[VMManager]

operation,name,ip_address,product,login_name,login_passwd,passwd_enc
-,vCenterServer,127.0.0.1,vmware-vc,Administrator,admin,plain

[ServerAgent]

operation,server_name
-,blade001
-,rackmount001
-,rackmount002

[ServerVMHost]

operation,server_name,vm_login_name,vm_login_passwd,vm_passwd_enc
-,blade002,admin,admin,plain

[MonitorSetting]

operation,server_name,ping_timeout,recovery_action,reboot_count
-,blade001,600,reboot_and_switchover,3

[PowerDevice]

operation,device_name,ip_address,snmp_community_name,voltage,comment
-,ups1,192.168.3.196,public,100,SmartUPS
-,ups2,192.168.3.197,public,100,SmartUPS

[Memo]

operation,resource_type,resource_name,label,comment
-,common,,,"TEL:0000-0000"

Appendix C Maintenance Mode

This appendix explains the maintenance mode available in Resource Orchestrator and how to use it.

Maintenance mode is used during hardware maintenance of managed servers. It is also used during the installation and maintenance of physical OSs and VM hosts. Maintenance mode avoids unwanted error notifications and disables execution of Auto-Recovery upon server failure.

The following operations can be performed on a server that has been placed into maintenance mode:

- Maintenance LED

Maintenance LEDs can be controlled.

- Backup and restore

System images can be backed up and restored.

- Cloning

Cloning images can be collected and deployed.

Use the following procedures to set and release maintenance mode:

- Setting Maintenance Mode

In the ROR console server resource tree, right-click the target server (or its physical OS or VM host) and select [Maintenance Mode]-[Set] from the popup menu.

- Releasing Maintenance Mode

In the ROR console server resource tree, right-click the target server (or its physical OS or VM host) and select [Maintenance Mode]-[Release] from the popup menu.



Note

- When using ServerView Deployment Manager, depending on the operation, servers may be rebooted or temporarily shut down. This also affects servers managed using Resource Orchestrator. It is recommended to place affected servers into maintenance mode before running operations from ServerView Deployment Manager. Then, the maintenance mode should be released once finished.