FUJITSU Server PRIMEQUEST 2000 Series

Linux Installation Guide

-Red Hat Enterprise Linux-

CA92344-0700-02

Table of Contents

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Preface

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■ About This Manual

■ Contents of This Manual

This manual describes OS installation and notes for people who want to install and use Red Hat Enterprise Linux (RHEL) on the PRIMEQUEST 2000 series. For details on the operation method, refer to the manuals for the PRIMEQUEST 2000 series main unit and RHEL.

■ Organization of Manuals

The following figure shows the organization of manuals for the PRIMEQUEST 2000 series (for RHEL).

| Design Guide | → | Linux (RHEL) Design Guide | → | Linux (RHEL) Installation Guide | → | Linux (RHEL) Operation Guide |

| Design | Installation | Operation |

Preface
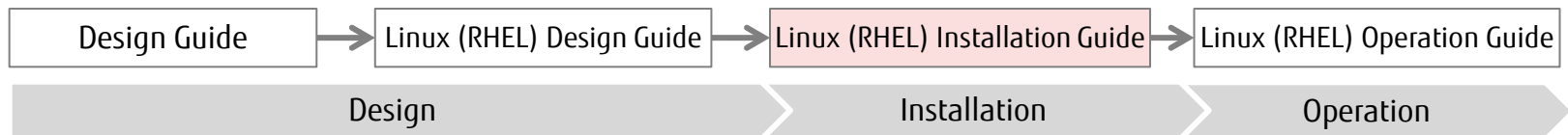
■ Reference Manuals

Manual name	Description	Acquire from:
PRIMEQUEST 2000 Series Hardware Installation Manual	Provides the specifications for installing the PRIMEQUEST 2000 series and the requirements for the installation location of the PRIMEQUEST 2000 series	Fujitsu's official site: PRIMEQUEST catalogs and technical materials http://www.fujitsu.com/global/products/computing/servers/mission-critical/primequest/documents/
PRIMEQUEST 2000 Series Installation Manual	Describes preparation, initial settings, software installation, and setup for installing the PRIMEQUEST 2000 series	
ServerView Suite ServerView Installation Manager User Guide	Describes the installation method using ServerView Installation Manager	
Related RHEL manuals provided by Red Hat	Product information, such as RHEL installation or environment settings	Go to the Red Hat Customer Portal (https://access.redhat.com/), and then click [Products & Services]. Under [Documentation], click on [Red Hat Enterprise Linux].

■ Symbol in This Manual

The following table shows the meaning of the symbol used in this manual.

Symbol	Meaning
👉	Indicates the page or document to refer to.

Preface

■ Abbreviations in This Manual

Name	Abbreviation	
PRIMEQUEST 2400E2	PRIMEQUEST 2000 series PRIMEQUEST	
PRIMEQUEST 2400E3		
PRIMEQUEST 2800B2		
PRIMEQUEST 2800B3		
PRIMEQUEST 2800E2		
PRIMEQUEST 2800E3		
System Board	SB	
Management Board	MMB	
ServerView Mission Critical Option	SVmco	
Red Hat® Enterprise Linux® 6 (for Intel64)	RHEL6	RHEL Linux
Red Hat® Enterprise Linux® 7 (for Intel64)	RHEL7	
PRIMEQUEST 2000 Series Hardware Installation Manual	Hardware Installation Manual	
PRIMEQUEST 2000 Series Installation Manual	Installation Manual	
ServerView Suite ServerView Installation Manager User Guide	SVIM Manual	
PRIMEQUEST 2000 Series Design Guide	Design Guide	
PRIMEQUEST 2000 Series Linux Design Guide -Red Hat Enterprise Linux-	Linux (RHEL) Design Guide	
PRIMEQUEST 2000 Series Linux Operation Guide -Red Hat Enterprise Linux-	Linux (RHEL) Operation Guide	

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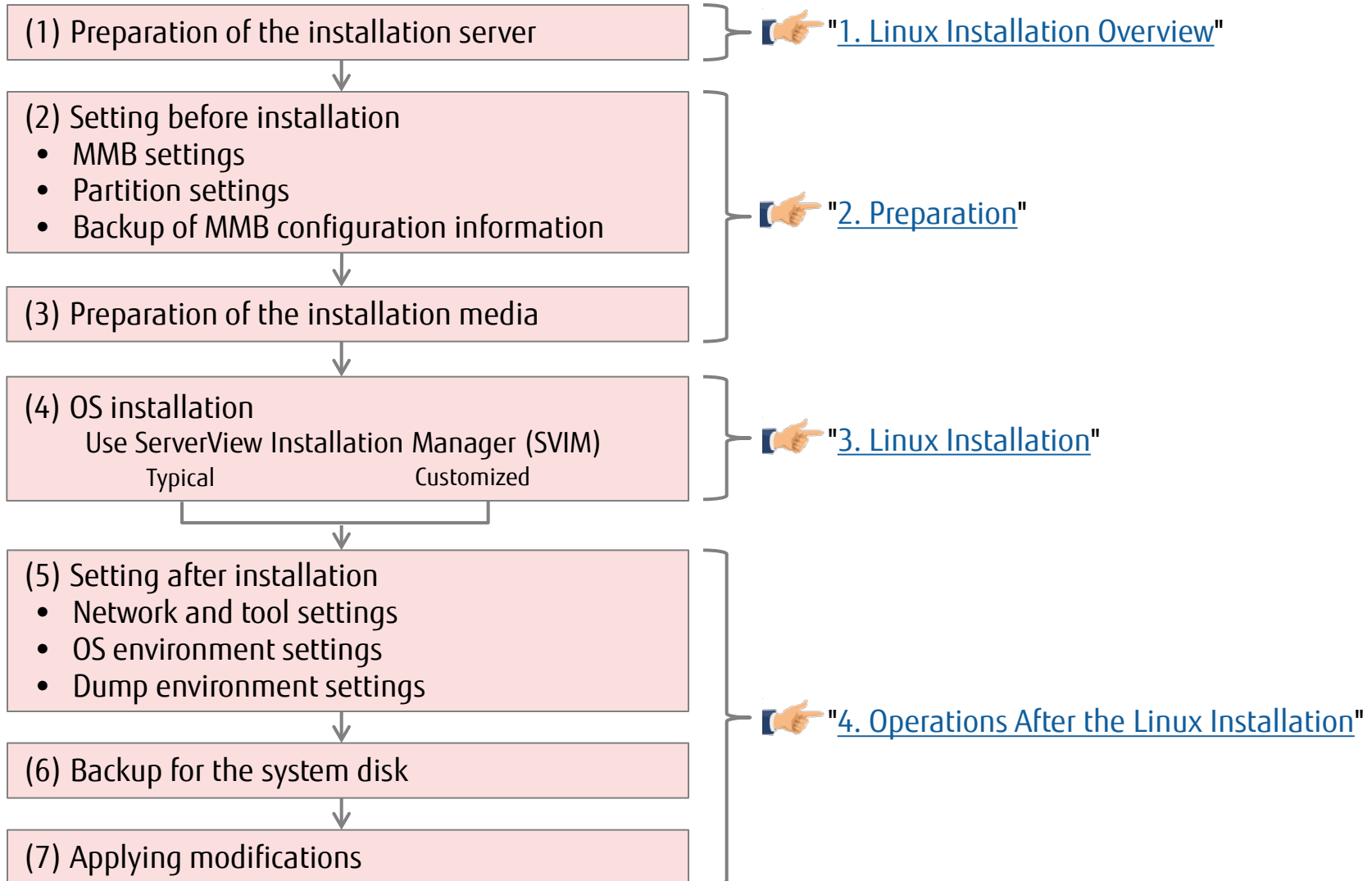
1. Linux Installation Overview

This chapter describes an overview of a Linux installation.

For details, refer to the manuals below.

- "Installation Manual"
- "SVIM Manual"
- Related RHEL manuals provided by Red Hat

1.1 Installation Workflow

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Chapter

(1) Preparation of the installation server	👉 "1. Linux Installation Overview"
(2) Setting before installation • MMB settings • Partition settings • Backup of MMB configuration information (3) Preparation of the installation media	👉 "2. Preparation"
(4) OS installation Use ServerView Installation Manager (SVIM) Typical Customized	👉 "3. Linux Installation"
(5) Setting after installation • Network and tool settings • OS environment settings • Dump environment settings (6) Backup for the system disk (7) Applying modifications	👉 "4. Operations After the Linux Installation"

👉 For details about the installation procedure, refer to "Installation Manual".

1.2 ServerView Installation Manager Features

To install the OS, use ServerView Installation Manager (SVIM). The following items can be performed with SVIM.

- Automatic RAID configuration for HDDs
- Installation of the optimal driver
- Support for automatic installation of software for operations
- Selection between Typical and Customized

Item	Features	Precautions
Typical	Simple installation that performs the basic necessary settings	Does not require detailed settings such as for the boot loader option or network (Can be changed after installation)
Customized	■ Performs an installation using information configured with the setup wizard ■ Can perform detailed settings ■ The saved configuration file can be used to perform installation on other partitions	To save the configuration file, specify where to save the configuration file on the SVIM initial screen

☞ For details, refer to "2. Overview and quick step guides" in "SVIM Manual".

To use SVIM, also refer to "PRIMEQUEST 2000/1000 Series Notes on ServerView Suite".

http://www.fujitsu.com/global/products/computing/servers/mission-critical/primequest/documents/manuals/index.html

1.3 Key Points for Preparing an Installation Server

■ Preparation for installation

Item	Key points
Confirming environmental conditions	Follow the installation specifications.
Preparing power source equipment	Consider the following points when ensuring redundancy for the power supply. ■ Prepare two independent power sources for the power source equipment. ■ Do not connect both power cables to the same power source equipment.
Confirming the installation location	Consider the size of each peripheral and the necessary service area (maintenance area).
Preparing to install the main unit	Check the MMB configuration information (IP address, subnet mask, default gateway, etc.) before installation.
Confirming components	Refer to the List of Attachment and confirm the delivered products.
Mounting on a 19-inch rack	Mount on a Fujitsu 19-inch rack.
Connecting the power cable	Make sure to connect the power cable to a grounded outlet.

☞ For details, refer to "Hardware Installation Manual" and "Chapter 2 Preparing for Main Unit Installation" in "Installation Manual".

2. Preparation

This chapter describes the preparation necessary before installing Linux.

For details, refer to "Installation Manual".

2.1 Operations Prior to OS Installation

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■ Setting the Main Unit

Item	Procedure	Refer to:
Connecting to the MMB and configuration settings	■ Connection environment settings for a production operation ■ Network settings ■ Various initial settings	"2.2 Key Points for the MMB Settings" "3.3 Connection and Setting of MMB" in "Installation Manual"
Partition settings	■ Partition configuration settings ■ Home SB settings ■ Reserved SB settings ■ Partition name settings ■ Various mode settings ■ Console Redirection settings ■ Boot Watchdog cancellation ■ Turning the partitions power on or off ■ Partition information confirmation	"2.3 Key Points for the Partition Settings" "3.4 Partition Configuration (Physical Partition)" in "Installation Manual"
Saving the configuration information	■ Saving the MMB configuration information	"3.7 Storage of the configuration information" in "Installation Manual"

■ Required Media Preparation

☞ Refer to "2.4 Required Media Preparation".

2.2 Key Points for the MMB Settings

■ **Password for the Initial Account (Administrator)**

After receiving the "User Name" and "Password" from the field engineer, make sure to change them.

■ **Network Settings**

- Set the physical IP address and virtual IP address for MMB#0 and MMB#1 that are connected to the management LAN in the same subnet.

- Confirm that the internal LAN's IP address is not overlapping with other LANs (management LAN, operation LAN, maintenance LAN, and cluster LAN).

■ **Time and Date Settings**

Designate multiple NTP servers (three or more servers are recommended) for stable NTP operation.

☞ For details, refer to "3.3 Connection and Setting of MMB" in "Installation Manual".

2.3 Key Points for the Partition Settings

- **Decide on the Following Items Before Configuring the Partitions**
  - Number of partitions
  - Partition names
  - Partition configuration
  - Home SB
  - Boot and control methods
  - 👉 For details, refer to "3.2 Key Points for Hardware Partitioning Design" in "Design Guide" and "3.4 Partition Configuration (Physical Partition)" in "Installation Manual".

- **Console Redirection Settings**

  Assign the same subnet as the management LAN.
  - 👉 For details, refer to "1.2.1 IP addresses used in the PRIMEQUEST 2000 series server" in "Administration Manual".

- **Boot Watchdog Cancellation**

  Cancel Boot Watchdog before installing the OS.

  For the cancellation method, refer to the following.
  - 👉 "11.4.1 Setting automatic partition restart conditions" in "Administration Manual"

2.4 Required Media Preparation (1/2)

■ **Location and Method to Acquire the Required Media**

  ■ RHEL Distribution

   Download the image file and create the installation media.

Media name	Acquire from:	How to acquire	Condition for acquisition
RHEL distribution DVD	Red Hat Customer Portal website	Download the image file and create a DVD	Registration for a subscription to the Red Hat Customer Portal

```
┌──────────────┐   Download        ┌──────────┐                    ╭──────╮
│  Red Hat     │                   │          │                    │  ◯   │
│Customer Portal│ ────────────▶    │ Customer │ ──Create a DVD──▶  │      │  RHEL distribution DVD
│  website     │   Image file      │          │                    ╰──────╯
└──────────────┘                   └──────────┘
```

☞ For details on creating DVDs, refer to "4.5.2 Preparation for installation" or "4.6.2 Preparing for Installation" in "Installation Manual".

2.4 Required Media Preparation (2/2)

■ **Software Bundled with Hardware**

Provided via "ServerView Suite" (Bundled by default with the hardware).

■ **Latest Patch**

Download from the Red Hat Customer Portal website.

3. Linux Installation

This chapter describes the installation of Linux and the bundled software.

For details, refer to "Installation Manual".

3.1 Key Points for Installation

■ Tools that Can be Installed with SVIM

Tool	Typical	Customized	Remarks
ServerView Operations Manager	-	*1	Select optionally if centrally monitoring multiple servers, including PRIMERGY
ServerView Agentless Service	Yes	*2	When install is selected, ServerView Agent must be unselected
ServerView Agent	-	*1	• Required to link with ServerView Resource Orchestrator or Systemwalker Service Quality Coordinator • When monitoring PCIe-SSD in Windows, ServerView RAID Manager must be installed simultaneously • When install is selected, ServerView Agentless Service must be unselected
ServerView RAID Manager	-	*1	• If a RAID configuration is necessary after installing the OS, driver, etc., installing ServerView RAID Manager is required • When monitoring PCIe-SSD in Windows, ServerView Agent must be installed simultaneously
SVmco	-	*1	Required to link with clusters
HBA blockage function	-	*1	
Dynamic Reconfiguration utility	-	*1	

Yes: Automatically installed

*1: Must be selected to be installed. It is not selected by default.

*2: Must be selected to be installed. It is selected by default.

- : Installed manually

☞ For details about installation, refer to "Installation Manual".

3.2 Key Points for Additional Package Installation

The following installation types are supported with SVIM when Customized is selected.

- **Installation of Packages Included in the RHEL Distribution**

  Packages can be selected for installation on the "Package Selection" screen.

- **Additional Installation**

  If additional packages are required, they can be added and installed.

  Selected packages listed in "Single packages selection" are installed in addition to the default packages.

☞ For details, refer to "SVIM Manual".

4. Operations After the Linux Installation

This chapter describes the procedures necessary after installing Linux.

For details, refer to "Installation Manual".

4.1 Operations After OS Installation

■ Settings After Installation

Item	Key points	Refer to:
Network and tool settings	■ Set and check the network ■ Update the tools	"4.2 Network and Tool Settings"
OS environment settings	■ Settings to prevent device name conflicts ■ Time correction	"4.3 Key Points for the OS Environment Settings"
	■ Dump environment settings	"4.4 Key Points for the Dump Environment Settings"
Save the management information and configuration information	■ Save the MMB configuration information ■ Save the BIOS configuration information	"5.7 Saving management and configuration information" in "Installation Manual"

■ Applying OS Modifications

☞ Refer to "4.5 Key Points for Applying Modifications".

4.2 Network and Tool Settings

■ Items to Set and Confirm

- ■ Internal LAN settings
- ■ Confirm the management LAN settings
- ■ Confirm the SELinux function settings
- ■ Confirm the firewall function (open ports)
- ■ Setting the trap destinations from the partition
- ■ Setting the management LAN IP address
- ■ SNMP settings when using copied disks
- ■ Updating SVmco

☞ For details, refer to "Chapter 5 Work after Operating System installation" in "Installation Manual".

4.3 Key Points for the OS Environment Settings

■ Settings to Prevent Device Name Conflicts

Set prevention of device name conflicts caused by reasons such as hardware failures.

■ Time Correction

Time inaccuracies occur in operations that are performed for extended periods of time. Periodically correcting the hardware clock with the system clock is recommended.

* During system operation, the system clock and hardware clock are both timed independently and are not synchronized.

☞ For details, refer to "4.4 Key Points for Time Correction" in "Linux (RHEL) Design Guide".

■ File System Settings and Mount Settings, etc.

For SVIM, various OS settings that are necessary for operations are performed automatically.

☞ For details, refer to the README bundled in SVIM.

Outline of the Dump Function

kdump function

RHEL's default dump function

Acquires the contents of the memory if an error occurs during operation.

sadump function

Dump function unique to PRIMEQUEST

Acquires the contents of the memory if the kdump function cannot or fails to acquire the dump.

Design of the Area Used for the Dump

Function name	Area	Size	Precautions
kdump	Dump saving area	(Installed memory capacity (*) + 1GB) × the number of memory dumps to be acquired ÷ 0.9	■ The dump saving area cannot be shared between multiple partitions. One dump saving area must be prepared for each partition. ■ If the dump saving area is insufficient, the dump will not be properly saved. Make sure that the free space is the required size.
sadump	Dump device	(Installed memory capacity (*) + 512MB) × n * n = the number of secondary devices in the event of a device error + 1	■ The dump device cannot be shared between multiple partitions. One dump device must be prepared for each partition. ■ The dump device cannot be shared with the file system or the swap partition.

(*) Installed memory capacity = Physical memory capacity

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■ Precautions for Dump Acquisition

- If installing PRIMECLUSTER GDS, remove the following areas from PRIMECLUSTER GDS's managed area
  - Dump device for sadump
  - Dump saving area for kdump
- When the dump device is created, the dump device will be initialized

  The time necessary for initialization varies depending on the selected disk and the size of the partition.

- If setting a device on ETERNUS as a dump device, UEFI driver settings are necessary in advance

4.5 Key Points for Applying Modifications

■ Applying Modifications

- ■ Update to the latest OS environment

- ■ Back up the system volume before applying modifications

- ■ Type of modification

Provided by:	Type of modification	Acquiring method	Description
Red Hat	errata	Download from Red Hat Customer Portal	Major error modifications for OS (including security patches)
	Minor releases		Releases provided periodically that include support for new hardware, additional functions, and error patches
Fujitsu	Emergency modification	Contact your sales representative	Major error modifications for software bundled with hardware provided by Fujitsu

☞ For details, refer to "4.1 Overview of Applying Modifications" in "Linux (RHEL) Design Guide".

Revision Record

Date	Revised location (*)	Description
2014-02-18	-	Created the first edition
2014-04-10	3.1 Key Points for Installation	Added tools
2014-08-30	Preface	Added RHEL7 information
2015-05-06	Preface	Added new models
2016-04-19	All	Added new models Updated with the latest information

(*) Chapter, section, and item numbers in the "Revised location" column refer to those in the latest edition of this manual.

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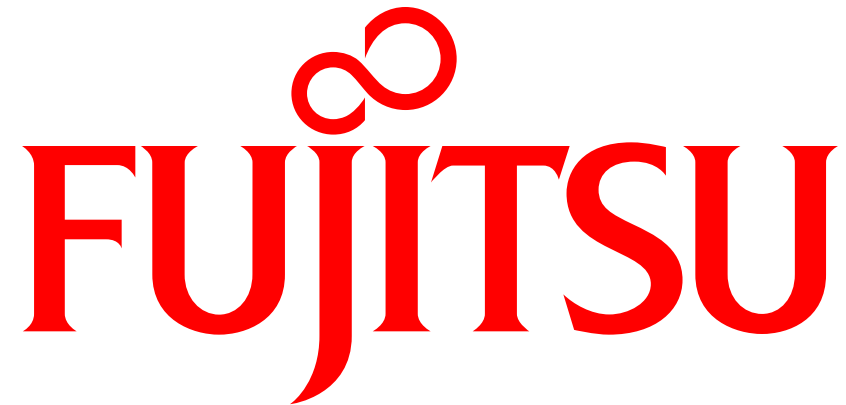
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