FUJITSU

FUJITSU Supercomputer PRIMEHPC FX700

Upgrade and Maintenance Manual

C120-0090-05EN

Preface

This document describes the upgrade procedures and maintenance of the FUJITSU Supercomputer PRIMEHPC FX700:

- Upgrading the configuration by adding optional hardware parts
- Upgrading the configuration by replacing existing hardware parts
- Updating HCP firmware through software operations
- Replacing faulty hardware parts

The work procedures contained in this manual vary in degree of difficulty. Before assigning work, check the skill level required for the work.

Before performing work, be sure to read "Work Procedure Classification."

Organization and Contents of This Manual

This document consists of the following chapters and appendix.

Chapter 1 Preliminary Work

This chapter describes the preliminary work before starting upgrade or maintenance work.

Chapter 2 Important Information

This chapter contains important information for using this product correctly and safely.

Chapter 3 Basic Hardware Procedures

This chapter describes the use of diagnostic information as well as hardware handling procedures.

Chapter 4 Basic Software Procedures

This chapter describes software procedures related to operation, including starting maintenance work, updating HCP firmware, and collecting system event logs.

Chapter 5 Blade

This chapter describes the handling of the blades.

Chapter 6 PSU (Power Supply Unit)

This chapter describes the handling of the PSUs (power supply units).

Chapter 7 FANU (Fan Unit)

This chapter describes the handling of the FANUs (fan units).

Chapter 8 InfiniBand Card

This chapter describes the handling of InfiniBand cards.

Chapter 9 M.2 SSD

This chapter describes the handling of the M.2 SSDs.

Chapter 10 BAREBONE (Barebones Server)

This chapter describes the handling of the BAREBONE (barebones server).

Chapter 11 BMCIFU

This chapter describes the handling of the BMCIFU.

Appendix A External Views of the Device

This appendix shows external views of the device as well as the LEDs and buttons.

Warning and Important Notice Symbols

This manual uses the following symbols to provide warnings and indicate useful information to the user, to prevent personal injury and property damage.

WARNING

WARNING indicates a hazardous (potentially dangerous) situation that could result in death or serious personal injury if the product is not used properly.

CAUTION

CAUTION indicates a hazardous situation that could result in minor or moderate personal injury and/or property damage, such as to the product itself or the user's property, if the product is not used properly.

Alert Symbols in the Text

An alert statement follows an alert symbol. An alert statement is indented on both ends to distinguish it from regular text. Similarly, one line is inserted before and after the alert statement.

Revision History

Edition	Date	Changed Location (Change Classification)(*1)	Description
01	February 27, 2020	-	Created
02	March 17, 2020	Preface	Added "Safety, Radio, and Harmonics (Europe)"
			Added "CE Compliance" to "Regulations"
		Chapter 2	Added "2.6.1 CE Compliance"
		Chapter 3	Corrected "3.19 Connecting External Cables"
		Chapter 7	Corrected "7.2.1 Preliminary Steps"
03	September 25, 2020	Chapter 1	Updated "Table 1.5 Tools Required and Screws Used for FX700 Maintenance Work"
		Chapter 4	Updated "4.2 Updating HCP Firmware"
			Updated "4.4 Controlling Nodes"
		Chapter 5	Updated "5.2.6 Final Steps"
		Chapter 8	Updated "8.2 Replacing an InfiniBand Card"
		Chapter 9	Updated "9.2.4 Final Steps"
		Chapter 10	Updated "10.2.4 Final Steps"
		Appendix A	Updated "A.2.1.2 Front Panel Buttons"

Edition	Date	Changed Location (Change Classification)(*1)	Description
04	November 24, 2020	Preface	Updated "Safety, Radio, and Harmonics (North America)," "Safety, Radio, and Harmonics (Europe)," and "Caution Labels"
		Chapter 2	Updated "2.1 Installation Precautions"
		Chapter 4	Updated "4.6.2 Displaying Configuration Information"
		Chapter 10	Updated "10.1 Basic Information" and "10.2 Replacing the BAREBONE"
		Appendix A	Updated "A.1.3 LANs of the FX700 Main Unit"
05	January 28, 2021	Preface	Added "Taiwan" Deleted "Export Related" tables for each country and "Handling Lithium Batteries"
		Chapter 3	Updated "3.3 Disconnecting Power Cords" and "3.4.1 Disconnecting LAN Cables From the Blade" Added "3.4.3 Disconnecting an InfiniBand Cable"
		Chapter 8	Updated "8.2.2 Removing an InfiniBand Card" Added "8.2.5 Updating the InfiniBand Card Firmware" and "8.3.5 Updating the InfiniBand Card Firmware"

*1 The numbers/titles of the chapters/sections to which changes are made are those used in the latest version. However, the numbers/titles of the chapters/sections with an asterisk are those used in the old version.

This section describes the following:

- For Your Safety
- Compliance With Laws and Regulations in Each Country
- Regulations
- Manuals in This Series
- Notation
- Caution Labels

For Your Safety

How to Use This Manual

This manual contains important information required for using this product safely. Read the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN), the *FUJITSU Supercomputer PRIMEHPC FX700 Getting Started Guide* (C120-0093XA), the *FUJITSU Supercomputer PRIMEHPC FX700 Safety and Regulatory Information* (C120-0092XA), the *FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide* (C120-0091EN), and the *FUJITSU Supercomputer PRIMEHPC FX700 Upgrade and Maintenance Manual* (C120-0090EN) thoroughly before using this product. Before attempting to operate this device, carefully read and understand each manual, paying particular attention to the safety precautions.
Be sure to keep this manual in a safe and convenient location for quick reference.
Fujitsu makes every effort to prevent injury to users and bystanders as well as property damage. Be sure to use the product in accordance with the instructions in the manual.

Notes on This Product

This product is designed and manufactured for use in standard applications such as office work, personal devices, and general industrial use. The product is not intended for special uses (nuclear-reactor control in atomic energy facilities, aeronautic and space systems, air traffic control, operation control in mass transit systems, life support, or missile launch controls) where particularly high reliability requirements exist, where the pertinent levels of safety are not guaranteed, or where a failure, an operational error, or some other factor could be life-threatening or cause a physical injury (referred to below as "high-risk" use). Customers considering the use of this product for high-risk applications must have safety-assurance measures in place beforehand. Moreover, they are requested to consult our sales representative before embarking on such specialized use.

Compliance With Laws and Regulations in Each Country

The FX700 system complies with the laws and regulations listed below.

North America

Safety, Radio, and Harmonics (North America)

Certified Standard	Standard Number	Safety	Radio	Harmonics
UL	ANSI/UL 60950-1, 2nd Ed., 2014-10-14 ANSI/UL 62368-1, 2nd Ed., 2014-12-01	✓		
FCC	FCC Part-15 Subpart-B (2019)		✓	

Safety, Radio, and Harmonics (North America) *(continued)*

Certified Standard	Standard Number	Safety	Radio	Harmonics
CSA	CAN/CSA C22.2 No. 60950-1-07, 2nd Ed., 2014-10 CAN/CSA C22.2 No. 62368-1-14, 2nd Ed., 2014-12	✓		
ICES	ICES-003 Issue 6 (2017)		✓	

Environmental Substances (North America)

Standard Number	Energy-Saving	Environmental Substances	Recycling
Regulations on brominated flame retardants (Maine, Washington, Oregon, and Vermont in the U.S.)		✓	
Law on emission of perchloric acid compounds to the environment (California)		✓	
Proposition 65 (California)		✓	
Prohibition of Certain Toxic Substances Regulations (SOR/2012-285)		✓	

Europe

Safety, Radio, and Harmonics (Europe)

Certified Standard	Standard Number	Safety	Radio	Harmonics
EN, IEC	IEC 60950-1:2005 (2nd Ed.); Am1:2009+Am2:2013 EN 60950-1:2006 +A11:2009 +A1:2010+A12:2011+A2:2013 IEC 62368-1:2014 EN 62368-1:2014+A11:2017	✓		
	EN 62479 (2010) EN 55035 (2017) EN 55032 (2012); Class A EN 55024 (2010) EN 61000-4-2 (2009) EN 61000-4-3 (2006), +A1, +A2 EN 61000-4-4 (2012) EN 61000-4-5 (2014), +A1 EN 61000-4-6 (2014) EN 61000-4-8 (2010) EN 61000-4-11 (2004), +A1 EN 300 386 V2.1.1 (2016)		✓	
	EN 61000-3-2 (2014) EN 61000-3-3 (2013)			✓

Environmental Substances and Recycling/Disposal (Europe)

Standard Number	Energy-Saving	Environmental Substances	Recycling
ErP Directive (2009/125/EC)	✓	✓	✓
RoHS II (2011/65/EU)		✓	
New chemical regulation (REACH: No. 1907/2006)		✓	
Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC		✓	
Waste Electrical and Electronic Equipment Directive (WEEE Directive)			✓
European Parliament and Council Directive 94/62/EC of 20 December, 1994 on packaging and packaging waste			✓

Japan

Safety, Radio, and Harmonics (Japan)

Certified Standard	Standard Number	Safety	Radio	Harmonics
PSE	Act on Product Safety of Electrical Appliances and Materials	✓		
VCCI	VCCI (2016)/VCCI-CISPR 32 (2016)		✓	
-	JIS C 61000-3-2 (2019)			✓

Energy-Saving, Environmental Substances, and Recycling/Disposal (Japan)

Standard Number	Energy-Saving	Environmental Substances	Recycling
Act on the Rational Use of Energy	✓		
Law Concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances		✓	
Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Act on Promoting Green Procurement)		✓	
Act on the Promotion of Effective Utilization of Resources			✓

South Korea

Safety, Radio, and Harmonics (South Korea)

Certified Standard	Standard Number	Safety	Radio	Harmonics
KCC	K 60950-1 (2.0) (2011-12) (PSU only)	✓		

Safety, Radio, and Harmonics (South Korea) *(continued)*

Certified Standard	Standard Number	Safety	Radio	Harmonics
	KN32 Class A KN35 KN61000-4-2/3/4/5/6/8/11		✓	

Recycling and Disposal (South Korea)

Standard Number	Energy-Saving	Environmental Substances	Recycling
Display rules on package separation			✓

Australia/New Zealand

Safety, Radio, and Harmonics (Australia/New Zealand)

Certified Standard	Standard Number	Safety	Radio	Harmonics
RCM	IEC 60950-1:2005 (2nd Ed.); Amd1+ Amd2 with AU,NZ deviation	✓		
	AS/NZS CISPR 32 (2013)		✓	

Taiwan

Safety, Radio, and Harmonics (Taiwan)

Certified Standard	Standard Number	Safety	Radio	Harmonics
BSMI	CNS 14336-1	✓		
	CNS 13438		✓	

Environmental Substances (Taiwan)

Standard Number	Energy-Saving	Environmental Substances	Recycling
Taiwan RoHS		✓	

Regulatory Compliance Statements

The applicable regulatory compliance statements provided for this product are as follows:

- Voluntary Control Council for Interference (VCCI) - Japan

Be sure to read the notices on this product before installing the product.
The notices on the product are shown below.

- VCCI Class A Notice

This equipment is Class A information technology equipment. Operation of this equipment in a residential area may cause radio interference, in which case the user may be required to correct the interference at the user's own expense.

VCCI-A

Regulations

This section describes the applicable regulations.

CE Compliance

The system complies with the requirements of European regulations.

CAUTION

This product is a Class A product. Operation of this product in a residential area may cause radio frequency interference,
in which case the user will be required to correct the interference at the user's own expense.

FCC Class A Declaration of Conformity

The device may be marked with an FCC declaration, which would apply to the equipment covered in this document unless otherwise specified herein. The declaration for other products will appear in the accompanying documentation.

CAUTION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules, and meets all requirements of the Canadian Interference-Causing Equipment Standard (ICES-003) for digital apparatus. These regulations are designed to provide reasonable protection against radio interference when the equipment is operated in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no warranty that interference will not occur in the conditions at a particular installation. If the product causes harmful interference to radio or television reception (which can be confirmed by switching the equipment on and off), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit separate from that connected to the receiver.
- Consult a reseller or experienced radio/TV technician for support.

Fujitsu is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu. The user shall be responsible for correcting the interference caused by such unauthorized modification, substitution, or attachment.
The use of shielded I/O cables is required when connecting the equipment to any optional peripheral or host device. Failure to use shielded I/O cables may violate FCC and ICES regulations.

Manuals in This Series

The documentation can be found online.

For the Japanese market
https://www.fujitsu.com/jp/products/computing/servers/supercomputer/downloads/
For the global market
https://www.fujitsu.com/global/products/computing/servers/supercomputer/documents/
See the following table for an overview of the documentation.

Document	Manual Code	Description
FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual	C120-0089EN	Contains information about how to install, set up, and operate the device. (Provided online)
FUJITSU Supercomputer PRIMEHPC FX700 Upgrade and Maintenance Manual	C120-0090EN	Contains device upgrade procedures and replacement procedures for faulty hardware. (Provided online)
FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide	C120-0091EN	Contains information about the BMC (Baseboard Management Controller), which manages the condition of the device. (Provided online)
FUJITSU Supercomputer PRIMEHPC FX700 Safety and Regulatory Information	C120-0092XA	Contains important safety information. (Provided online and as print version)
FUJITSU Supercomputer PRIMEHPC FX700 Getting Started Guide	C120-0093XA	Describes how to access the reference manuals and other important information after unpacking the equipment. (The manual is supplied with the product.)

Storage of Accessories

Keep the accessories in a safe place because they are required for FX700 main unit operation.

Notation

This document uses the following fonts and symbols to indicate special meanings.

Font or Symbol	Meaning	Example
AaBbCc123	Indicates what is input by users and displayed on screens. This font is used to indicate command input examples.	`# adduser jsmith`

AaBbCc123	Indicates the names of commands, files, and directories output by the computer and displayed on screens.
	This font is used to indicate command output examples in boxes.
		`Shell> showinfo`
		.
		.
		`M.2 Slot Device Status: PASS`

Italics	Indicates the name of a referenced manual.	See the *FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide*.
" "	Indicates the title of a referenced chapter, section, or subsection.	See "Chapter 4 Operation."

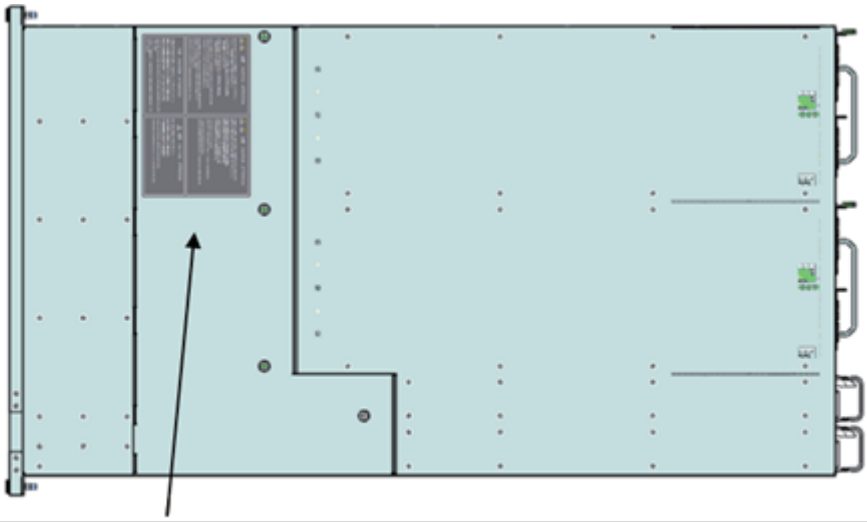
Caution Labels

Caution labels are affixed to this product.

CAUTION

Never peel off the labels.

Main Unit (Top)



感電 触电 注意 CAUTION ATTENTION

保守する前に、すべての電源コードを抜いてください。
（ただし、活性保守時はこの限りではない。）

在进行维护工作之前,请从插座上拔掉所有电源线。
（带电维护不在此范围内）

在進行維護工作之前,請從插座上拔掉所有電源線。
（帶電維護不在此範圍內）

DISCONNECT ALL POWER SUPPLY CORDS BEFORE SERVICE TO AVOID ELECTRIC SHOCK.
(EXCEPT FOR ACTIVE MAINTENACE.)

DEBRANCHER TOUS LES CORDONS D'ALIMENTATION AVANT LA MAINTENANCE POUR PREVENIR LES CHOCS ÉLECTRIQUES.
(EXCEPTÉ LORS DE LA MAINTENANCE ACTIVE.)

感電 触电 注意 CAUTION ATTENTION

内部には高電圧部分があり、感電する恐れがあります。
保守担当者以外の方は内部に触れないでください。

装置内有高电压部分,有引起触电的危险。
除保养担当者之外,请勿触摸装置内部。

裝置內有高壓部分,有引起觸電的危險。
除保養擔當者外,請勿觸摸裝置內部。

HAZARDOUS VOLTAGE.
SERVICE ENGINEER ONLY TOUCH THE INSIDE.

TENSIONS DANGEREUSES.
SEUL UN INGÉNIEUR PEUT VÉRIFIER L'INTÉRIEUR.

注意 CAUTION ATTENTION

本機器を搭載する前に、設置マニュアルをみてください。

请务必先阅读本装置安装手册之后,再进行机器的安装。

請務必先閱讀本裝置安裝手冊之後,再進行機器的安裝。

SEE INSTALLATION INSTRUCTIONS BEFORE INSTALLING THIS UNIT.

VOIR LE MANUEL D'INSTRUCTIONS AVANT D'INSTALLER CET UNITÉ.

注意 CAUTION ATTENTION

保守時は静電気を除去すること。

维护保养时必须佩带防静电腕带。

維護保養時必須佩帶防靜電腕帶。

ELECTROSTATIC SENSITIVE DEVICES.

CIRCUITS SENSIBLES A L'ELECTRICITÉ STATIQUE.

Trademarks

- Company names and product names are the trademarks or registered trademarks of their respective owners.
- Trademark indications (TM, (R)) are omitted for some system and product names in this document.

This document shall not be reproduced or copied without the permission of the publisher.
All Rights Reserved, Copyright FUJITSU LIMITED 2020, 2021,

Notes on Product Handling

Maintenance

WARNING

Ask a certified service engineer or our sales representative to perform the inspection and repair work for this product and the optional products provided by Fujitsu. The work must not be done by the customer under any circumstances. Otherwise, electric shock, injury, or fire may result.

Modifying or Recycling the Product

CAUTION

Modifying this product or recycling and using a secondhand product may result in personal injury to users and/or bystanders or damage to the product and/or other property.

Disposal or Recycling of Products That Have Completed Their Life Cycle

Waste must be disposed of in a professional and responsible way in accordance with environmental regulations. For details, please contact your nearest environmental authority or our sales representative.

Contents

Preface i

Notes on Product Handling xi

Chapter 1 Preliminary Work 1

1.1 Work Procedure Classification 1
1.1.1 Customer Replaceable Unit (CRU) 1
1.1.2 Field Replaceable Unit (FRU) 1
1.1.3 Upgrade and Repair Unit (URU) 2
1.2 Work Time 2
1.3 Required Tools 3

Chapter 2 Important Information 4

2.1 Installation Precautions 4
2.2 Power, Voltage, and Connection Precautions 5
2.3 Precautions on Handling the FX700 Main Unit 5
2.4 Precautions on Handling Optional Equipment 6
2.5 Other Precautions 6
2.6 Regulations 6
2.6.1 CE Compliance 6
2.6.2 FCC Class A Declaration of Conformity 7
2.7 Environmental Protection 7

Chapter 3 Basic Hardware Procedures 9

3.1 Using Diagnostic Information 9
3.1.1 Identifying the FX700 Main Unit 9
3.1.2 Determining the Error Level 9
3.1.3 Identifying a Faulty Part 9
3.2 Shutting Down the FX700 Main Unit 10
3.3 Disconnecting Power Cords 10
3.4 Disconnecting External Cables 10
3.4.1 Disconnecting LAN Cables From the Blade 10
3.4.2 Disconnecting Cables From the BMCIFU 10
3.4.3 Disconnecting an InfiniBand Cable 10
3.5 Removing the Blade 11

3.6 Removing the Dummy Blade ····· 11
3.7 Removing the PSU ····· 11
3.8 Removing the Dummy PSU ····· 11
3.9 Removing the FANU ····· 12
3.10 Removing the FX700 Main Unit From the Rack ····· 12
3.11 Removing the Top Cover ····· 12
3.12 Installing the Top Cover ····· 13
3.13 Installing the FX700 Main Unit in the Rack ····· 15
3.14 Installing the Blade ····· 15
3.15 Installing the Dummy Blade ····· 15
3.16 Installing the PSU ····· 15
3.17 Installing the Dummy PSU ····· 15
3.18 Installing the FANU ····· 15
3.19 Connecting External Cables ····· 16
3.20 Connecting Power Cords ····· 16
3.21 Powering On the FX700 Main Unit ····· 16
3.22 Handling the Riser Module ····· 17
3.22.1 Removing the Riser Module (for PCIE#00) ····· 17
3.22.2 Installing the Riser Module (for PCIE#00) ····· 18
3.22.3 Installing the Slot Cover on the Riser Module ····· 21
3.22.4 Removing the Slot Cover From the Riser Module ····· 21
3.23 Removing the Front Bezel ····· 22
3.24 Installing the Front Bezel ····· 22

Chapter 4 Basic Software Procedures ····· 23

4.1 Maintenance Work ····· 23
4.1.1 Setting Maintenance Mode ····· 23
4.1.2 Clearing Maintenance Mode ····· 24
4.1.3 Precaution on Maintenance Mode ····· 25
4.2 Updating HCP Firmware ····· 25
4.2.1 Registering HCP Firmware ····· 25
4.2.2 Applying HCP Firmware ····· 27
4.2.3 Precaution During Updates ····· 27
4.3 System Event Log (SEL) ····· 28
4.3.1 Displaying SEL ····· 28
4.3.2 Specifying Filter Conditions ····· 30
4.3.3 Collecting a Snapshot ····· 31
4.3.4 Collecting an Environment Log ····· 33
4.4 Controlling Nodes ····· 33
4.4.1 Power Operations ····· 33
4.5 Setting the Time ····· 36
4.6 Checking the I/O Configuration ····· 36

4.6.1 Connecting to the Console ····· 36
4.6.2 Displaying Configuration Information ····· 37
4.7 Installing the OS ····· 37
4.8 Installing the InfiniBand Driver ····· 37

Chapter 5 Blade ····· 38

5.1 Basic Information ····· 38
5.2 Replacing the Blade ····· 39
5.2.1 Preliminary Steps ····· 39
5.2.2 Removing the Blade ····· 39
5.2.3 Removing the Riser Module and M.2 SSD ····· 39
5.2.4 Installing the Riser Module and M.2 SSD ····· 40
5.2.5 Installing the Blade ····· 40
5.2.6 Final Steps ····· 40
5.3 Adding a Blade ····· 40
5.3.1 Preliminary Steps ····· 40
5.3.2 Removing the Dummy Blade ····· 41
5.3.3 Installing the Blade ····· 41
5.3.4 Final Steps ····· 41

Chapter 6 PSU (Power Supply Unit) ····· 42

6.1 Basic Information ····· 42
6.2 Replacing a PSU ····· 43
6.2.1 Preliminary Steps ····· 43
6.2.2 Removing the PSU ····· 43
6.2.3 Installing the PSU ····· 44
6.2.4 Final Steps ····· 45
6.3 Adding a PSU ····· 45
6.3.1 Advance Preparation ····· 45
6.3.2 Removing the Dummy PSU ····· 45
6.3.3 Installing the PSU ····· 46
6.3.4 Final Steps ····· 46

Chapter 7 FANU (Fan Unit) ····· 47

7.1 Basic Information ····· 47
7.2 Replacing a FANU ····· 47
7.2.1 Preliminary Steps ····· 48
7.2.2 Removing the FANU ····· 48
7.2.3 Installing the FANU in the Chassis ····· 50
7.2.4 Final Steps ····· 52

Chapter 8 InfiniBand Card ····· 53

8.1 Basic Information ····· 53
8.2 Replacing an InfiniBand Card ····· 53
8.2.1 Preliminary Steps ····· 53
8.2.2 Removing an InfiniBand Card ····· 54
8.2.3 Installing an InfiniBand Card ····· 54
8.2.4 Final Steps ····· 55
8.2.5 Updating the InfiniBand Card Firmware ····· 56
8.3 Adding an InfiniBand Card ····· 56
8.3.1 Preliminary Steps ····· 56
8.3.2 Removing a Slot Cover ····· 57
8.3.3 Installing an InfiniBand Card ····· 57
8.3.4 Final Steps ····· 57
8.3.5 Updating the InfiniBand Card Firmware ····· 57

Chapter 9 M.2 SSD ····· 58

9.1 Basic Information ····· 58
9.2 Replacing an M.2 SSD ····· 59
9.2.1 Preliminary Steps ····· 59
9.2.2 Removing the M.2 SSD ····· 59
9.2.3 Installing the M.2 SSD ····· 60
9.2.4 Final Steps ····· 61
9.3 Adding an M.2 SSD ····· 62
9.3.1 Preliminary Steps ····· 62
9.3.2 Installing the M.2 SSD ····· 62
9.3.3 Final Steps ····· 62

Chapter 10 BAREBONE (Barebones Server) ····· 63

10.1 Basic Information ····· 63
10.2 Replacing the BAREBONE ····· 64
10.2.1 Preliminary Steps ····· 64
10.2.2 Removing the BAREBONE ····· 65
10.2.3 Installing the BAREBONE ····· 65
10.2.4 Final Steps ····· 66

Chapter 11 BMCIFU ····· 67

11.1 Basic Information ····· 67
11.2 Replacing the BMCIFU ····· 67
11.2.1 Preliminary Steps ····· 68
11.2.2 Removing the BMCIFU ····· 68
11.2.3 Installing the BMCIFU ····· 70

11.2.4 Final Steps 71

Appendix A External Views of the Device 73

A.1 External Views of the Device 73
A.1.1 Front Configuration of the FX700 Main Unit 73
A.1.2 Rear Configuration of the FX700 Main Unit 73
A.1.3 LANs of the FX700 Main Unit 74
A.1.4 Internal Configuration of the FX700 Main Unit 75
A.1.5 Internal Blade Configuration 75
A.2 Indicator Lamps and Controls 76
A.2.1 Server Front 76
A.2.2 Server Rear 79
A.2.3 Blade Rear 82

Figure Table Contents

Figure Contents

Figure 3.1 Riser Module Numbers (Top View of the Blade) ····· 17
Figure 3.2 Riser Module Guide (for PCIECARD#00) ····· 20
Figure 3.3 Riser Module Suspended (Problem) ····· 20
Figure 3.4 Riser Module Not Suspended (No Problem) ····· 21

Figure 4.1 [Maintenance] Screen ····· 24
Figure 4.2 Error Message (at FANU Failure) ····· 25
Figure 4.3 [Firmware Update] Screen ····· 26
Figure 4.4 Confirmation Dialog Box ····· 26
Figure 4.5 Confirmation Dialog Box ····· 27
Figure 4.6 Error Message (at Upload) ····· 28
Figure 4.7 Displayed SEL List ····· 29
Figure 4.8 Specifying Filter Conditions ····· 30
Figure 4.9 Clicking the [Collect] Button ····· 31
Figure 4.10 Specifying Settings in [Type] and [Encrypt] ····· 31
Figure 4.11 Message Displayed ····· 32
Figure 4.12 Display During Snapshot Collection ····· 32
Figure 4.13 Downloading a Snapshot ····· 33
Figure 4.14 Collecting an Environment Log ····· 33
Figure 4.15 [Power Control] Screen ····· 34
Figure 4.16 Specifying a Start Mode ····· 34
Figure 4.17 Setting the Date and Time ····· 36

Figure 5.1 Rear Configuration of the FX700 Main Unit ····· 38

Figure 6.1 PSU Mounting Locations ····· 42

Figure 7.1 Front Configuration of the FX700 Main Unit (Without the Front Bezel) ····· 47

Figure 8.1 Removing an InfiniBand Card ····· 54
Figure 8.2 Installing an InfiniBand Card ····· 55

Figure 9.1 M.2 SSD Mounting Locations (Top View of the Blade) ····· 58
Figure 9.2 Removing the M.2 SSD ····· 60
Figure 9.3 M.2 SSD ····· 60

Figure 9.4 Installing the M.2 SSD ····· 60
Figure 9.5 Securing the M.2 SSD ····· 61

Figure 10.1 BAREBONE of the FX700 Main Unit ····· 64

Figure 11.1 BMCIFU of the FX700 Main Unit ····· 67
Figure 11.2 Removing the BMCIFU (Top View of the FX700 Main Unit) ····· 69
Figure 11.3 Removing the BMCIFU ····· 69
Figure 11.4 Installing the BMCIFU ····· 70
Figure 11.5 Securing the BMCIFU (Top View of the FX700 Main Unit) ····· 71

Figure A.1 Front Configuration of the FX700 Main Unit (With the Front Bezel) ····· 73
Figure A.2 Front Configuration of the FX700 Main Unit (Without the Front Bezel) ····· 73
Figure A.3 Rear Configuration of the FX700 Main Unit ····· 74
Figure A.4 Rear Locations for the LANs of the FX700 Main Unit ····· 74
Figure A.5 Internal Configuration of the FX700 Main Unit ····· 75
Figure A.6 Internal FX700 Blade Configuration ····· 75
Figure A.7 Front Panel LEDs ····· 76
Figure A.8 Front Panel Buttons ····· 78
Figure A.9 Locations of the Front LEDs on the FX700 Main Unit ····· 79
Figure A.10 BMCIFU LED (ID) ····· 79
Figure A.11 BMCIFU LAN LEDs ····· 80
Figure A.12 Hot-Plug PSU LED (AC PSU) ····· 81
Figure A.13 Rear LEDs on the Blade ····· 82
Figure A.14 Rear LAN LEDs on the Blade ····· 82

Table Contents

Table 1.1 Part Handled as a Customer Replaceable Unit 1
Table 1.2 Parts Handled as Field Replaceable Units 1
Table 1.3 Parts Handled as Upgrade Parts 2
Table 1.4 Work Time Calculation 2
Table 1.5 Tools Required and Screws Used for FX700 Maintenance Work 3

Table 4.1 SEL Display Items and Displayed Contents 29
Table 4.2 Specifying Filter Conditions 30
Table 4.3 Specifying Settings in [Type] and [Encrypt] 32
Table 4.4 Collecting an Environment Log 33
Table 4.5 Specifying a Start Mode 35
Table 4.6 Display Items on the [Power Control] Screen 35
Table 4.7 Setting the Date and Time 36

Table 5.1 Mounting Order in Blade Installation 39

Table 9.1 M.2 SSD Mounting Locations on the CMU 59

Chapter 1 Preliminary Work

Perform the following preliminary work before starting upgrade or maintenance work.
- Read the important safety precautions thoroughly in "Chapter 2 Important Information."
- Confirm that you have all the required manuals. (See the documentation overview shown in "Manuals in This Series.") If necessary, print the PDF files.
- Check the work procedure classification shown in "1.1 Work Procedure Classification."
- Confirm that you have all the required tools according to "1.3 Required Tools."

1.1 Work Procedure Classification

The work procedures have widely varying degrees of difficulty.
For details, contact your local Fujitsu service center.

1.1.1 Customer Replaceable Unit (CRU)

The following part can be mounted and replaced.

Table 1.1 Part Handled as a Customer Replaceable Unit

Part Name
PSU (power supply unit)

1.1.2 Field Replaceable Unit (FRU)

The installation and removal of field replaceable units involve complex maintenance procedures for components essential to the device.

⚠CAUTION

Only Fujitsu service personnel and Fujitsu-trained technicians are capable of performing maintenance procedures related to field replaceable units. Please be aware that illegally tampering with the system voids the warranty and exempts the manufacturer from liability.

Table 1.2 Parts Handled as Field Replaceable Units

Part Name
PSU (power supply unit)
FANU (fan unit)
CMU (blade)
InfiniBand card
M.2 SSD

Table 1.2 Parts Handled as Field Replaceable Units *(continued)*

Part Name
BAREBONE (barebones server)
BMCIFU

1.1.3 Upgrade and Repair Unit (URU)

Upgrade and repair parts do not support hot plugging, and customers can order them separately to mount them as options.

Table 1.3 Parts Handled as Upgrade Parts

Part Name
PSU (power supply unit)
CMU (blade)
InfiniBand card
M.2 SSD

⚠CAUTION

Only Fujitsu service personnel and Fujitsu-trained technicians are capable of performing installation procedures related to these units. Please be aware that illegally tampering with the system voids the warranty and exempts the manufacturer from liability.

1.2 Work Time

The approximate work time shown for each work procedure includes the time required for preliminary work. See the following table for the steps included in the work times.

Table 1.4 Work Time Calculation

Step	Included?	Description
Shut down FX700 main unit	No	The shutdown time varies greatly depending on the hardware and software configurations.
Remove from rack and disassemble	Yes	To be able to do the work, remove the FX700 main unit from the rack (when applicable).
Transport (Carry)	No	The work of moving the FX700 main unit to a workbench (as required) varies depending on the environment.
Maintenance work	Yes	Perform maintenance work, including software preparation and post-work operations.
Assemble and mount in rack	Yes	Assemble the FX700 main unit and return it to the rack (when applicable).

Table 1.4 Work Time Calculation *(continued)*

Step	Included?	Description
Start up	No	The startup time varies greatly depending on the hardware and software configurations.

1.3 Required Tools

When preparing for maintenance work, confirm that you have all the required tools according to the following table.
The table lists the types of tools and screws.

Table 1.5 Tools Required and Screws Used for FX700 Maintenance Work

Screwdriver/Bit Insert	Screw	Usage	Type
Phillips PH2 / (+) No. 2		To secure top cover To secure expansion card To secure slot cover To secure M.2 SSD To secure riser module	M3
Phillips PH2 / (+) No. 2		To secure chassis To secure front bezel	M5 Panel fastener
Phillips PH2 / (+) No. 2		To secure BMCIFU	M3 Panel fastener

Chapter 2 Important Information

This chapter contains important information for using this product correctly and safely.

2.1 Installation Precautions

⚠WARNING

- Do not install this product in a place where the floor is unstable. Doing so may cause the floor to collapse.
- Do not install this product in a location exposed to humidity, dust, smoke, poor ventilation, or fire. Doing so may cause malfunctions, fire, or electric shock.
- Do not use this product in locations where water is splashed. Doing so may cause malfunctions, fire, or electric shock.
- Do not block the air intake or exhaust vents. Blocking the air intake and exhaust vents could lead to fire caused by high temperatures inside the product.
- This equipment in not suitable for use in locations where children are likely to be present.
- The FX700 main unit (including the rack system) is designed to operate in an environment with vibrations of 0.2 G or less (equivalent to an earthquake with a seismic intensity of 5 (on the JMA scale: strong earthquake) without any problems.

Consult your sales representative when you design the rack system because earthquake-proofing measures, such as anchoring equipment/racks to the floor, etc., will need to be taken to prevent the equipment from toppling in the event of an earthquake.

⚠CAUTION

- Do not use this product in an environment where corrosive gases are generated or where it may be damaged by seawater. Doing so may cause malfunctions. Corrosive gases and salt spray may corrode the equipment, which can lead to malfunctions and damage, dramatically shortening the service life of the equipment. Therefore, measures such as installing an air cleaning system are required.
  Also, using the product in an environment exposed to dust may cause malfunctions and shorten the service life of the equipment by damaging memory media or by impeding equipment cooling.
  - Sources of corrosive gas include chemical factory areas, hot springs, and volcanic areas.
  - A rough standard for an environment that may be exposed to salt spray damage is anywhere within 500 m of the coastline.
- Do not install the power cord or other types of cables at a location where they may catch someone's foot. Otherwise, the equipment may fall or topple, resulting in bodily injury. Equipment damage or improper operation may also result.
- Do not install this product near TVs or speakers since they generate strong magnetic fields. Doing so may cause malfunctions.
- Do not place heavy objects on the equipment. Doing so may cause the equipment to become unbalanced and fall over, leading to bodily injury. Also, do not drop objects on the equipment or expose the equipment to shock or vibration. Doing so may damage the equipment or cause it to

malfunction.
- Install the FX700 main unit on a level surface at a location not subject to strong vibration. Do not install the main unit at a location subject to strong vibration or in an unstable location such as on a slope. Otherwise, the main unit may fall or topple, resulting in bodily injury.
  Also, to prevent danger, do not install the equipment near access aisles. If the equipment is installed near an access route, vibration generated by walking may cause it to fail or malfunction.

2.2 Power, Voltage, and Connection Precautions

⚠WARNING

- Be sure to fully insert the power plug into the power outlet. Using the product without fully inserting the power plug may lead to fire or malfunctions.
- Connect the grounding wire to equipment requiring a grounding connection before turning the power on. Failing to do so may cause a short circuit, which can lead to fire or electric shock.
- The FX700 main unit is designed to work with power systems having a grounded neutral. To reduce the risk of electric shock or malfunction, do not plug the FX700 main unit into any other type of power system. Contact your facilities manager or a qualified electrician if you are not sure what type of power is supplied to your building.
- Do not use household extension cords with your Fujitsu product. Household extension cords do not have overload protection and are not meant for use with computer systems. Using household extension cords may lead to fire or electric shock.
- Do not use the accessory power cord for other equipment or anything other than its intended purpose. The supplied power cord is designed to be connected to and used with the FX700 main unit, and its safety has been confirmed. Never use power cords from other products or for anything other than their intended purpose. Otherwise, fire or electric shock may result.

2.3 Precautions on Handling the FX700 Main Unit

⚠WARNING

- Do not use cleaning spray containing flammable substances when cleaning the equipment. Doing so may cause malfunctions or fire.
- Do not remove the cover of the FX700 main unit and the covers attached to the insertion slots except for special cases such as installing optional equipment. If you remove a cover, always mount the cover in its original position before turning on the equipment.
  If the inside of the equipment needs to be checked or repaired, contact the hardware repair consultation center to arrange for such work to be performed. The equipment includes high-voltage parts and such parts may cause electric shock.
- Do not insert or drop foreign matter, such as metallic chips or flammable material, into the openings (vent holes) of the equipment. Doing so may cause malfunctions, fire, or electric shock.
- Do not use cleaning spray containing flammable substances when cleaning the equipment. Doing so may cause malfunctions or fire.
- Do not block the openings (vent holes) of the equipment. Blocking the vent holes could lead to fire caused by high temperatures inside the product.

- When performing pest control using pesticide near the equipment, stop the main unit and cover it with a vinyl sheet.
- Do not splash water on the equipment. Doing so may cause malfunctions, fire, or electric shock.

⚠CAUTION

- Do not place heavy objects on the equipment. Also, do not expose the equipment to shock or vibration. Doing so may cause the equipment to become unbalanced and fall over, leading to bodily injury.
- When transporting the equipment, always put it back in its original packaging or pack it in a container that protects the equipment from shock and vibration. Do not unpack the equipment until it arrives at the installation location.

2.4 Precautions on Handling Optional Equipment

⚠WARNING

- Mount or remove optional equipment only after disconnecting the power plugs of the FX700 main unit and connected equipment from the outlets. Otherwise, electric shock may result.
- Only connect Fujitsu-recommended products to this product. Doing so may cause malfunctions, fire, or electric shock.
- Do not insert a finger into the connector insertion opening. Doing so may cause electric shock.

2.5 Other Precautions

⚠CAUTION

Do not use the FX700 main unit in proximity to devices, such as cell phones, that emit electromagnetic radiation. Doing so may cause the FX700 main unit to malfunction.

2.6 Regulations

2.6.1 CE Compliance

CE

The system complies with the requirements of European regulations.

⚠CAUTION

This product is a Class A product. Operation of this product in a residential area may cause radio

frequency interference, in which case the user will be required to correct the interference at the user's own expense.

2.6.2 FCC Class A Declaration of Conformity

The device may be marked with an FCC declaration, which would apply to the equipment covered in this document unless otherwise specified herein. The declaration for other products will appear in the accompanying documentation.

CAUTION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules, and meets all requirements of the Canadian Interference-Causing Equipment Standard (ICES-003) for digital apparatus. These regulations are designed to provide reasonable protection against radio interference when the equipment is operated in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no warranty that interference will not occur in the conditions at a particular installation. If the product causes harmful interference to radio or television reception (which can be confirmed by switching the equipment on and off), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit separate from that connected to the receiver.
- Consult a reseller or experienced radio/TV technician for support.

Fujitsu is not responsible for any radio or television interference caused by unauthorized modification of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu. The user shall be responsible for correcting the interference caused by such unauthorized modification, substitution, or attachment.

The use of shielded I/O cables is required when connecting the equipment to any optional peripheral or host device. Failure to use shielded I/O cables may violate FCC and ICES regulations.

2.7 Environmental Protection

Environmentally-Friendly Product Design and Development

This product has been designed in accordance with the Fujitsu standard for "environmentally friendly product design and development." This means that key factors such as durability, selection and labeling of materials, emissions, packaging, and ease of dismantling and recycling have been taken into account. This saves resources and thus reduces the harm done to the environment.

Energy-Saving Information

Devices that do not need to be constantly switched on should be switched off until they are needed as well as during long breaks and after completion of work.

Packaging Information

This packaging information does not apply in Japan and APAC.
Do not throw away the packaging. You may need it later for transporting the server. If possible, the equipment should only be transported in its original packaging.

Information on Handling Consumables

Please dispose of printer consumables and batteries in accordance with the applicable national regulations. In accordance with EU guidelines, batteries must not be disposed of with unsorted domestic waste. They can be returned free of charge to the manufacturer, the dealer, or an authorized agent for recycling or disposal.
All batteries containing pollutants are marked with a symbol (a crossed-out garbage can). They are also marked with the chemical symbol for the heavy metal that causes them to be categorized as containing pollutants:
Cd Cadmium
Hg Mercury
Pb Lead

Labels on Plastic Casing Parts

Please avoid sticking your own labels on plastic parts wherever possible. Plastic parts with such labels are difficult to recycle.

Returns, Recycling, and Disposal

Please handle returns, recycling, and disposal in accordance with local regulations.

The device must not be disposed of with domestic waste.
This device is labeled in compliance with European directive 2012/19/EU on waste electrical and electronic equipment (WEEE).
This directive sets the framework for returning and recycling used equipment and is valid across the EU. When returning your used device, please use the return and collection systems available to you.

Details regarding the return and recycling of devices and consumables within Europe can also be found in the *Returning used devices* manual. This manual is available at your local Fujitsu branch.

Chapter 3 Basic Hardware Procedures

This chapter describes the use of diagnostic information as well as hardware handling procedures.

3.1 Using Diagnostic Information

The BMC sends a failure notification via an SNMP trap in the following notification format when a hardware failure occurs.

SNMP Trap Notification Format

```
UNITID=[machine ID],[level]:[1st suspected FRU]([SerialNo]):[2nd
suspected FRU]([SerialNo]):[1st suspected FRUE]:[message text]
[code1] [code2] [code3] [code4] [code5] [code6] [code7] [code8]
```

Perform the following diagnostic procedure to identify the faulty FX700 main unit and parts.

3.1.1 Identifying the FX700 Main Unit

Identify the faulty FX700 main unit from the machine ID in the SNMP trap notification.
If working in a data center environment or server room, make the ID lamp blink so that you can easily identify the FX700 main unit or blade.
Use the BMC Web GUI to make the identification LED blink, or use an IPMI command to turn on the LED.
After successfully completing the maintenance work, be sure to turn off the identification LED.

3.1.2 Determining the Error Level

You can determine the error level from [level] in the format of the SNMP trap notification. Using the Web GUI, you can also identify the error level from the [FRU information] screen.
For details on how to log in, see "3.1.1 FRU Information" in the *FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide* (C120-0091EN).

3.1.3 Identifying a Faulty Part

- You can identify the faulty part from [suspected FRU] in the format of the SNMP trap notification.
- You can identify the faulty part from the CMU/FAN/PSU alarm LED.
  For details, see "1.2 Buttons and LEDs on the FX700 Main Unit" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
- You can identify the faulty part from the [FRU Information] screen by using the Web GUI.
  For details, see "3.1.1 FRU Information" in the *FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide* (C120-0091EN).

3.2 Shutting Down the FX700 Main Unit

Ask the system administrator to shut down the FX700 main unit.

3.3 Disconnecting Power Cords

The following is the procedure for disconnecting power cords.

1. **Confirm that all parts of the FX700 main unit are powered off.**

   Before disconnecting the power cords, you need to power off all parts of the FX700 main unit.

   Confirm that the green PSU status LEDs are blinking.

   See "A.2.2.2 Hot-Plug PSU LED."

   If a power cord has a clip to prevent it from being unplugged, unlock the clip. See "3.15.3 Connecting the Power Cord" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

2. **Disconnect the power cords from the PSUs.**

3.4 Disconnecting External Cables

3.4.1 Disconnecting LAN Cables From the Blade

The following is the procedure for disconnecting LAN cables from the blade.

1. **Disconnect LAN cables from the blade.**

Remarks

If your finger is too big to touch the connector lock when disconnecting a LAN or other cable, the cable cannot be removed. In that case, unlock the connector lock by pushing it with a flathead screwdriver. Then, remove the cable by pulling it and the screwdriver out together.

3.4.2 Disconnecting Cables From the BMCIFU

The following is the procedure for disconnecting cables from the BMCIFU.

1. **Disconnect LAN cables from the BMCIFU.**

3.4.3 Disconnecting an InfiniBand Cable

The following is the procedure for disconnecting an InfiniBand cable.

1. Before disconnecting an InfiniBand cable, power off its node.

To power off, control the power from [Power Control] in the [Power Control] menu. For details, see "3.3 Power Control" in the *FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide* (C120-0091EN).

2. Confirm that the LED on the InfiniBand card mounted on the powered-off node is turned off.
3. Disconnect the InfiniBand cable from the InfiniBand card.

3.5 Removing the Blade

See "3.9 Installing/Removing the Blade" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
To hot-swap a blade, see "Chapter 5 Blade."

CAUTION

When hot-swapping a blade, transfer the M.2 SSDs and InfiniBand cards from the old blade to the new blade.

3.6 Removing the Dummy Blade

See "3.11 Installing/Removing the Dummy Blade" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
To perform active addition of a blade, see "Chapter 5 Blade."

3.7 Removing the PSU

See "3.10 Installing/Removing the PSU" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
To hot-swap a PSU, see "Chapter 6 PSU (Power Supply Unit)."

3.8 Removing the Dummy PSU

See "3.12 Installing/Removing the Dummy PSU" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
To perform active addition of a PSU, see "Chapter 6 PSU (Power Supply Unit)."

3.9 Removing the FANU

See "3.13 Installing/Removing the FANU" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
To hot-swap a FANU, see "Chapter 7 FANU (Fan Unit)."

3.10 Removing the FX700 Main Unit From the Rack

CAUTION

- When removing the main unit, be careful not to allow the rack to topple.
- See "Chapter 2 Important Information."

1. **Disconnect all external cables.**
2. **To remove the chassis from the rack, remove all of the blades, PSUs, and FANUs from the FX700 main unit.**

   See "3.5 Removing the Blade," "3.7 Removing the PSU," and "3.9 Removing the FANU."
3. **Remove it from the rack and disassemble.**

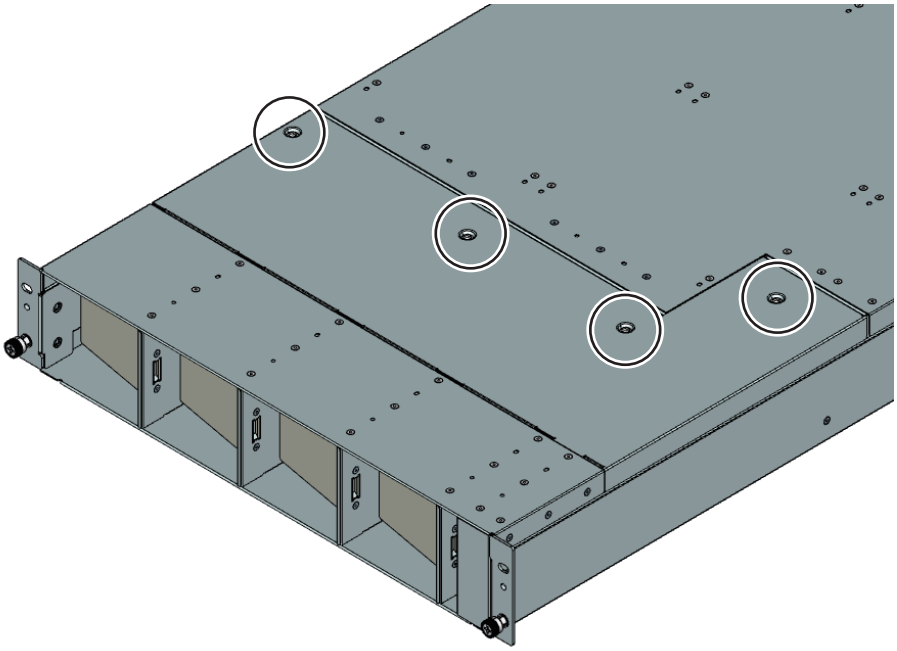
   See "4.2 Removing the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

CAUTION

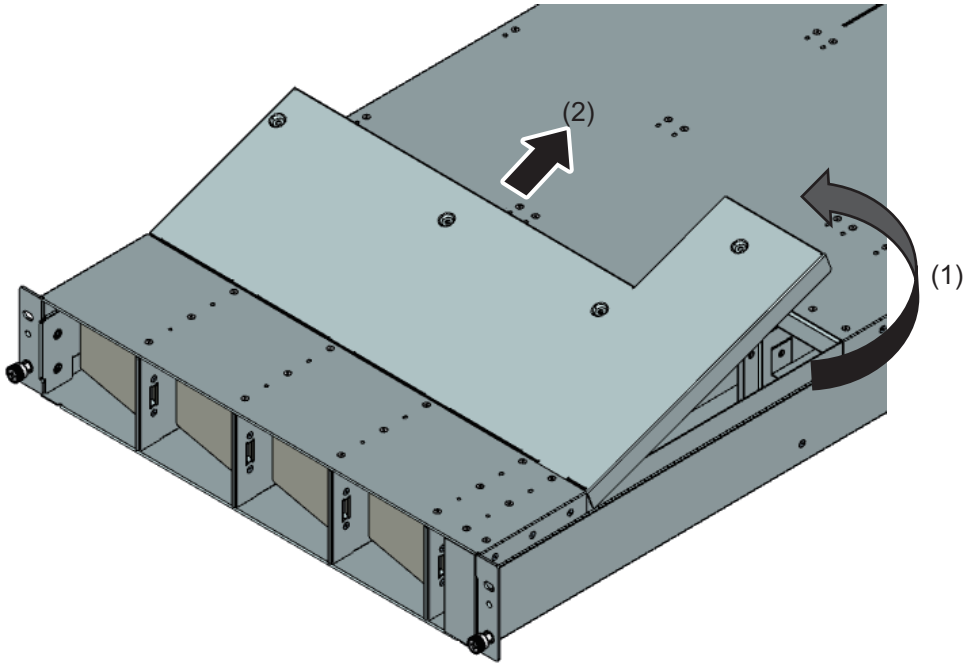
Two or more people are required to remove the chassis from the rack. Be careful that your fingers and clothes do not get trapped when pulling out or returning the chassis.
See "Chapter 2 Important Information."

3.11 Removing the Top Cover

1. **Remove the top cover fixing screws.**



2. **Lift (1) and remove (2) the top cover.**



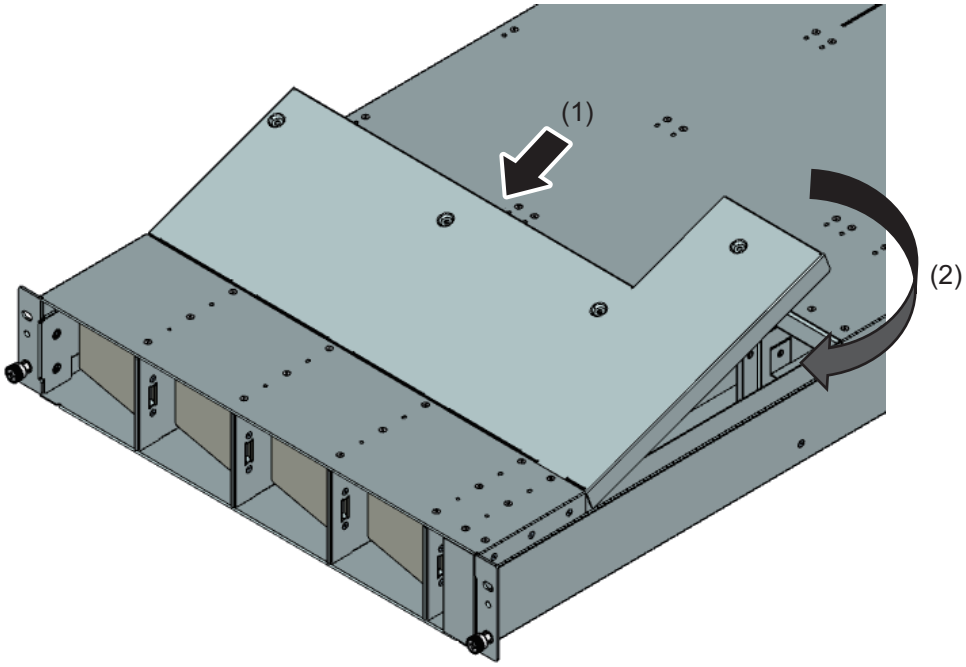
3.12 Installing the Top Cover

CAUTION

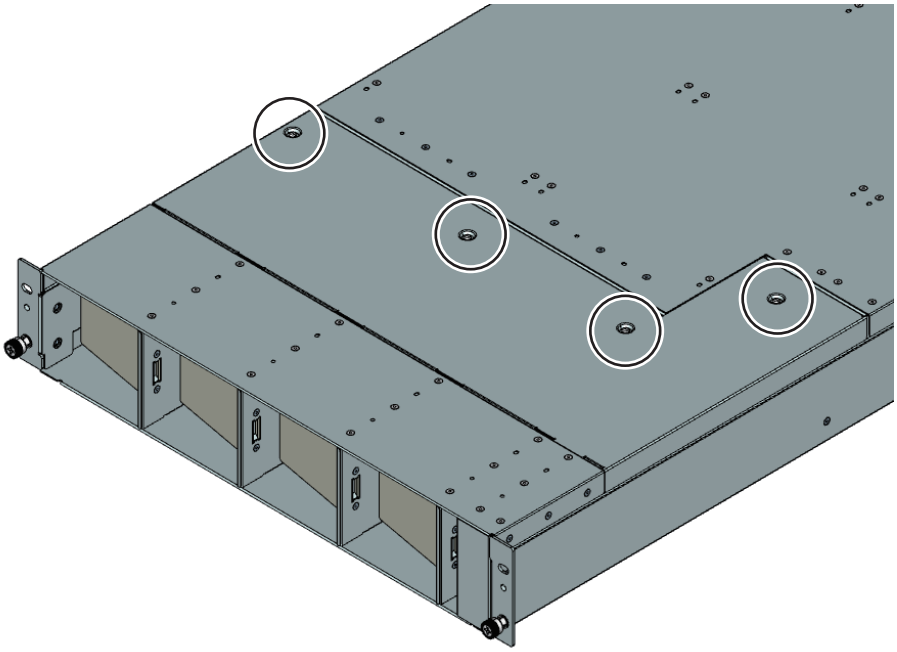
Before installing the cover, confirm that no unnecessary parts or tools have been left in the chassis.

- See "Chapter 2 Important Information."

1. **Insert the top cover (1). Lower the top cover (2).**



2. **Secure the top cover with screws.**



3.13 Installing the FX700 Main Unit in the Rack

CAUTION

- When installing the FX700 main unit, be careful not to allow the rack to topple.

See "3.8.2 Mounting the Chassis in the Rack" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

3.14 Installing the Blade

See "3.9 Installing/Removing the Blade" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
To perform active replacement/addition of a blade, see "Chapter 5 Blade."

3.15 Installing the Dummy Blade

See "3.11 Installing/Removing the Dummy Blade" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

3.16 Installing the PSU

See "3.10 Installing/Removing the PSU" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).
To perform active replacement/addition of a PSU, see "Chapter 6 PSU (Power Supply Unit)."

3.17 Installing the Dummy PSU

See "3.12 Installing/Removing the Dummy PSU" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

3.18 Installing the FANU

See "3.13 Installing/Removing the FANU" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating*

Manual (C120-0089EN).
To hot-swap a FANU, see "Chapter 7 FANU (Fan Unit)."

3.19 Connecting External Cables

See "3.15 Connecting Cables" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

3.20 Connecting Power Cords

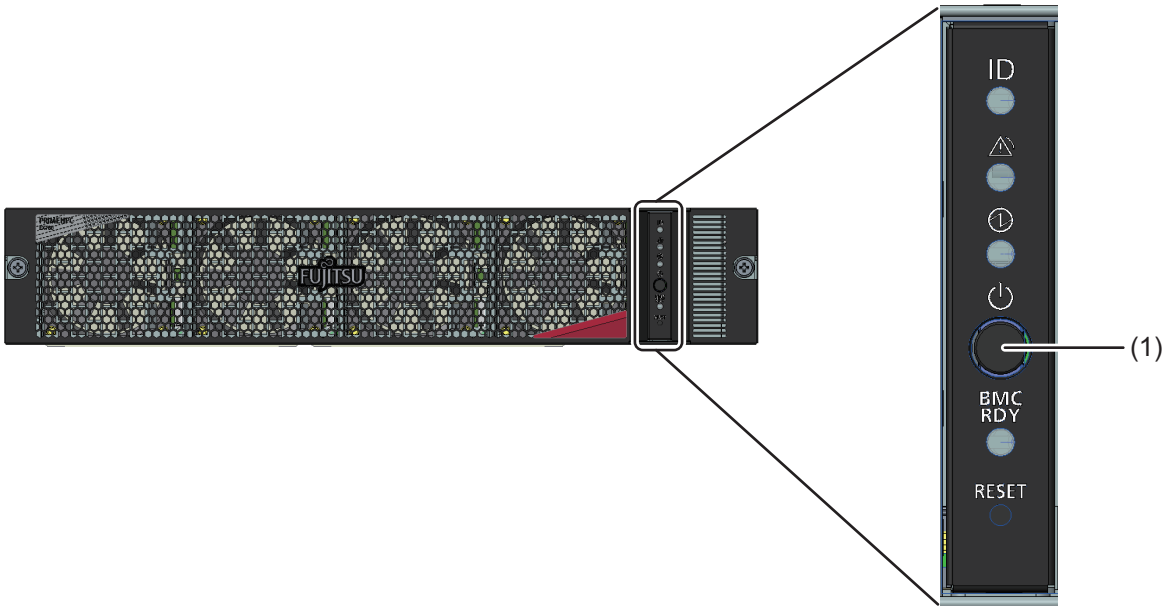
See "3.15.3 Connecting the Power Cord" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

3.21 Powering On the FX700 Main Unit

The following is the procedure for powering on the FX700 main unit.

1. **Press the power button on the front panel (1).**

   The FX700 main unit starts up.

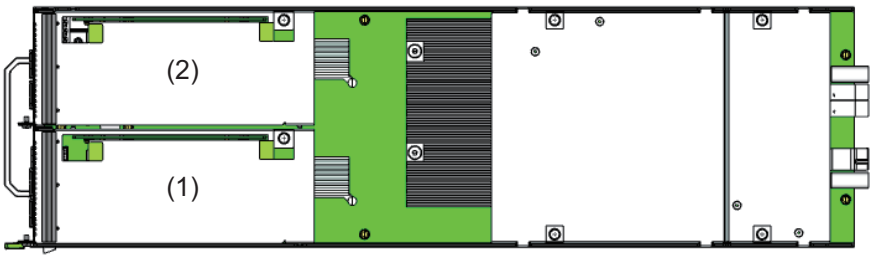


For details, see "A.2 Indicator Lamps and Controls."

3.22 Handling the Riser Module

This section describes the riser modules. The two riser modules are PCIECARD#00 and PCIECARD#01.

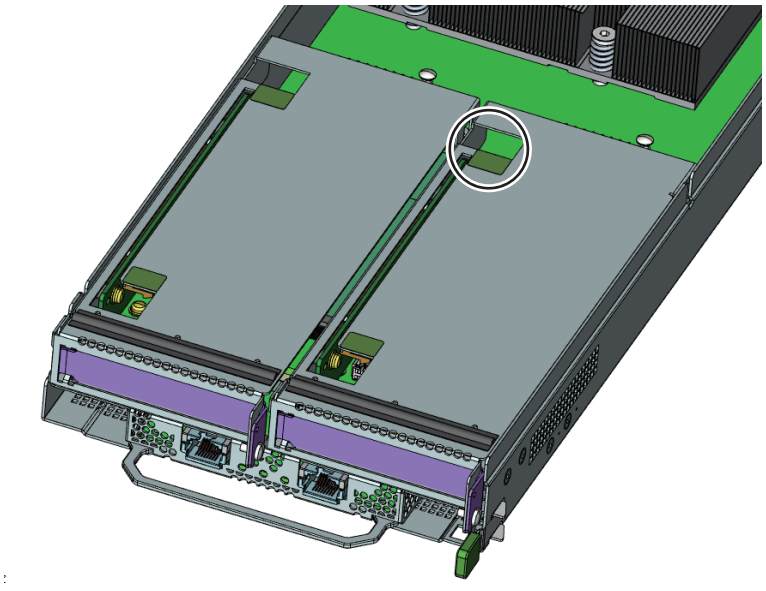
Figure 3.1 Riser Module Numbers (Top View of the Blade)



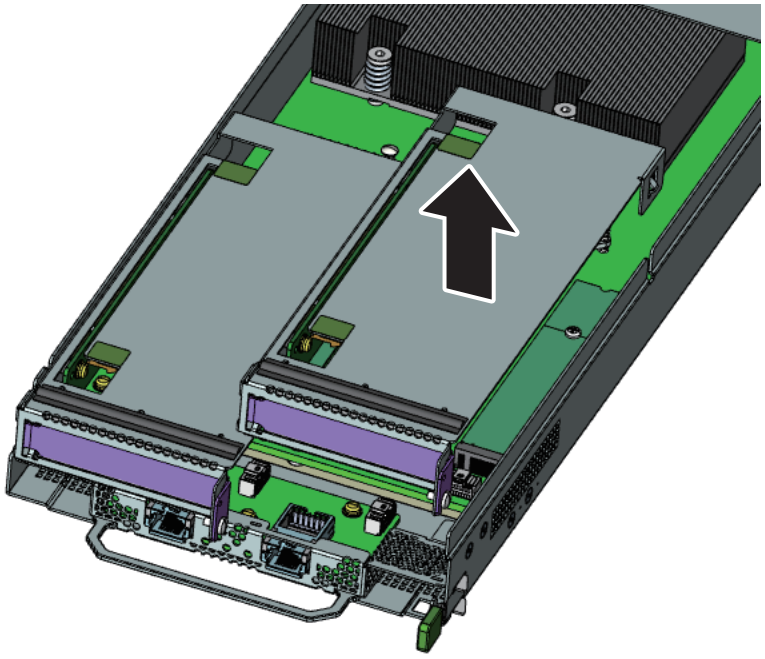
Location	Component
(1)	PCIECARD#00
(2)	PCIECARD#01

3.22.1 Removing the Riser Module (for PCIE#00)

1. **If necessary, remove cables from the blade.**
2. **Remove the fixing screw. (Circled part)**

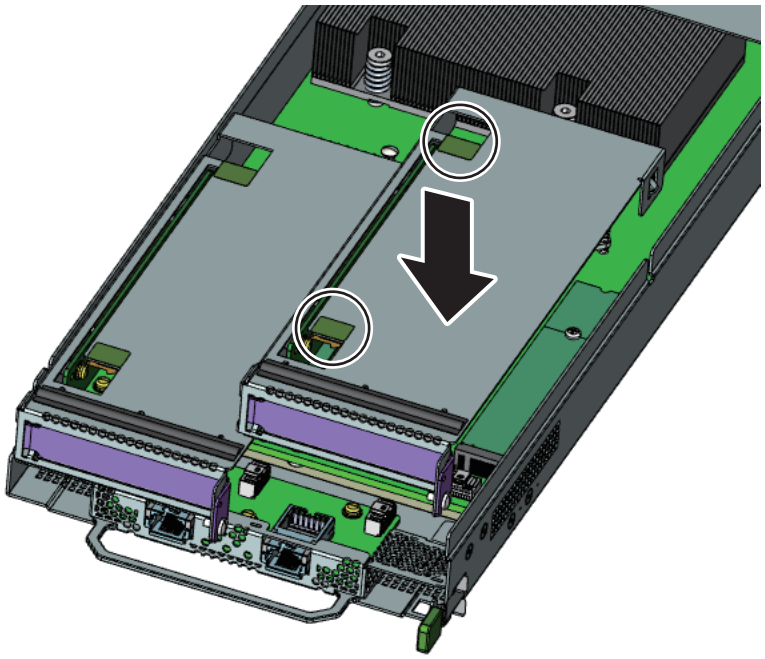


3. **Lift and remove the riser module.**

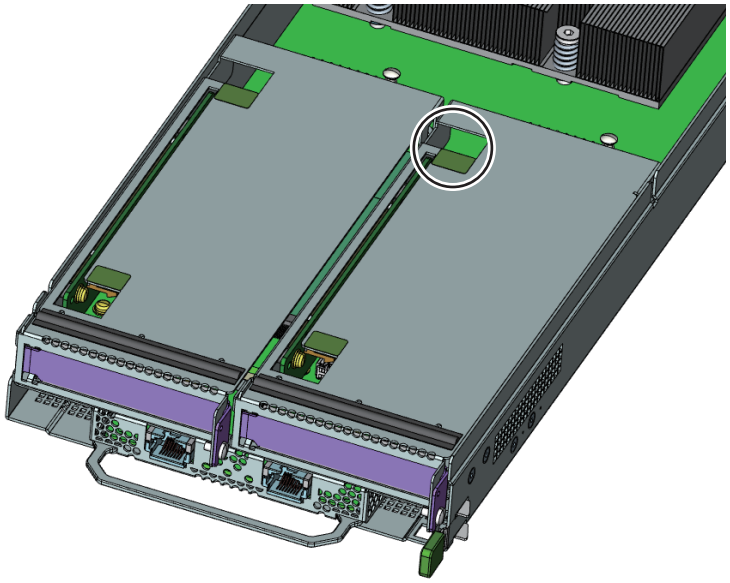


3.22.2 Installing the Riser Module (for PCIE#00)

1. **Mount the riser module in the blade, and push the green touchpoints down. (Circled parts)**



2. **Secure it with a fixing screw. (Circled part)**

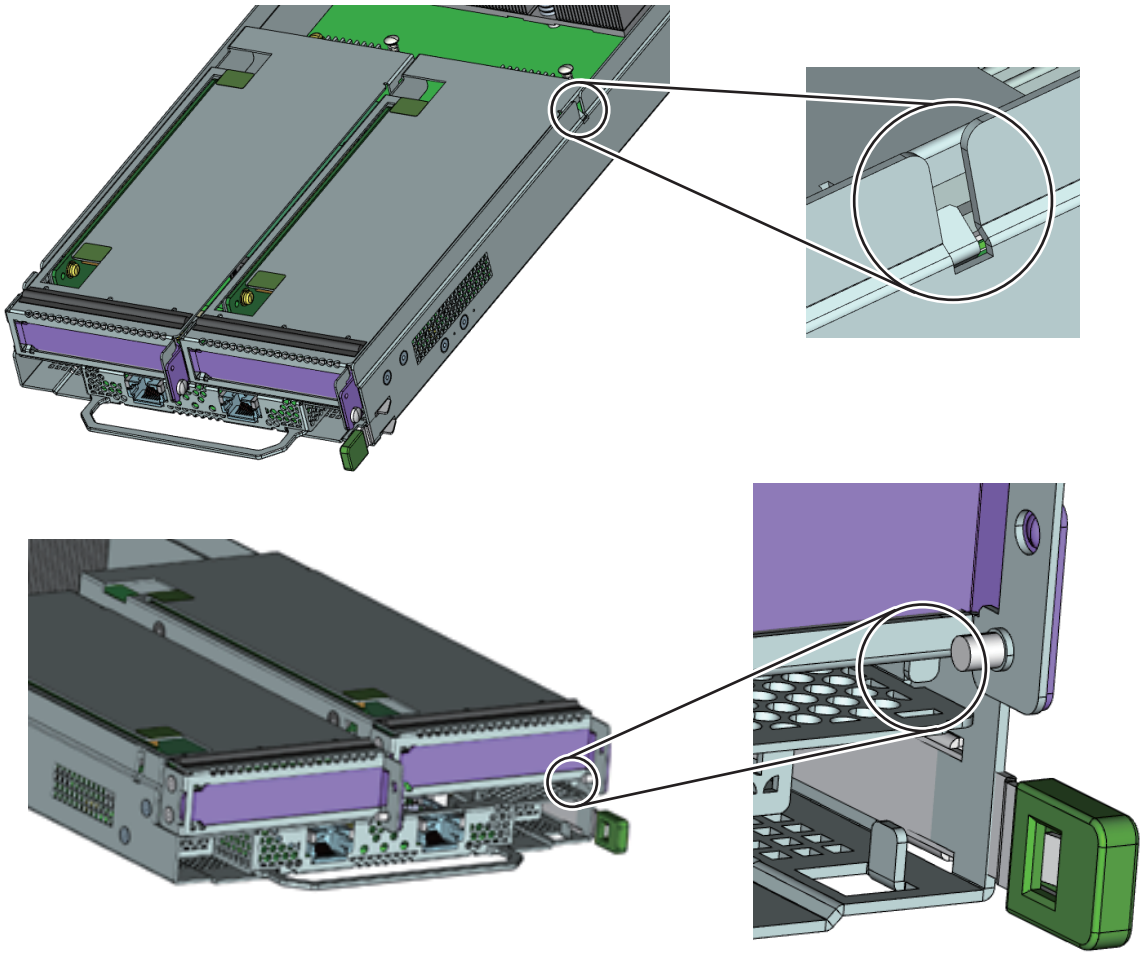


3. **If necessary, connect cables to other components.**

CAUTION

Referring to "Figure 3.2 Riser Module Guide (for PCIECARD#00)," confirm that the riser module is correctly inserted in the guide. (Circled part)

Figure 3.2 Riser Module Guide (for PCIECARD#00)



CAUTION

After inserting the module, confirm that the riser module is not suspended.

Figure 3.3 Riser Module Suspended (Problem)

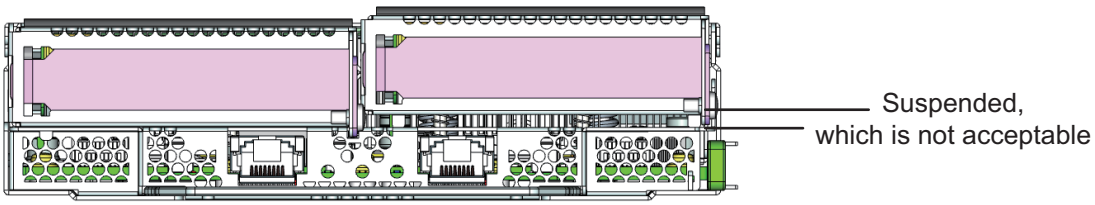
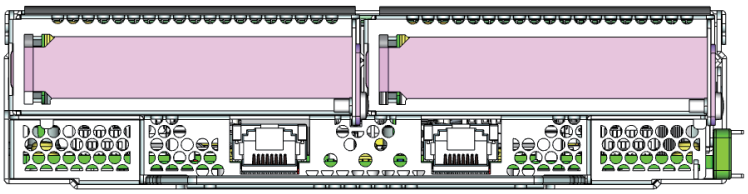
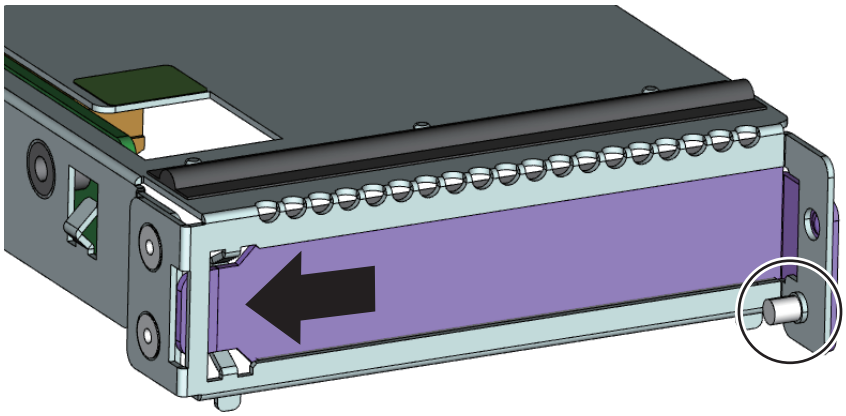


Figure 3.4 Riser Module Not Suspended (No Problem)



3.22.3 Installing the Slot Cover on the Riser Module

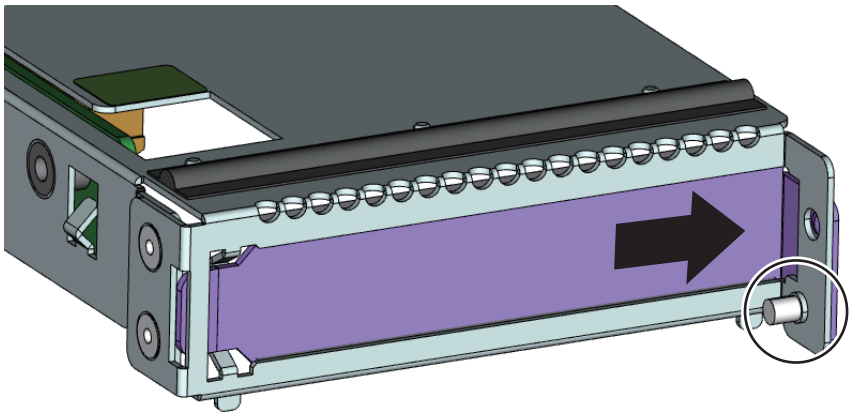
1. **Insert the slot cover in the direction of the arrow into the opening at the front of the riser module.**



2. **Secure the slot cover to the riser module with a screw. (Circled part)**

3.22.4 Removing the Slot Cover From the Riser Module

1. **Remove the screw from the riser module. (Circled part)**

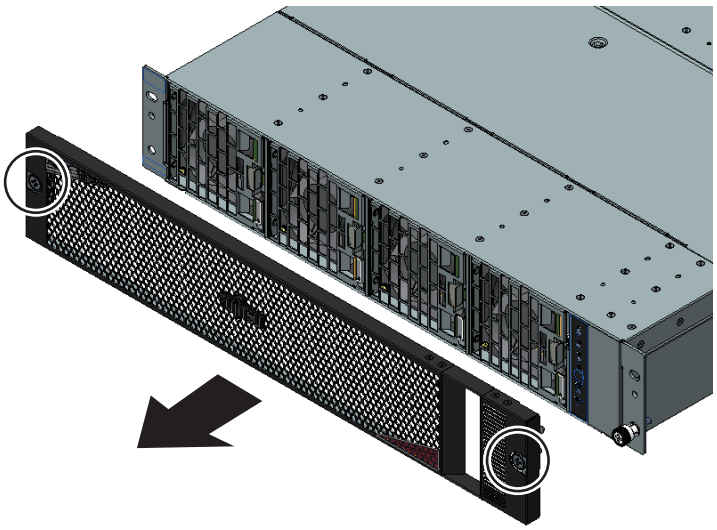


2. **Pull the slot cover out of the riser module in the direction of the arrow.**

3.23 Removing the Front Bezel

The following is the procedure for removing the front bezel.

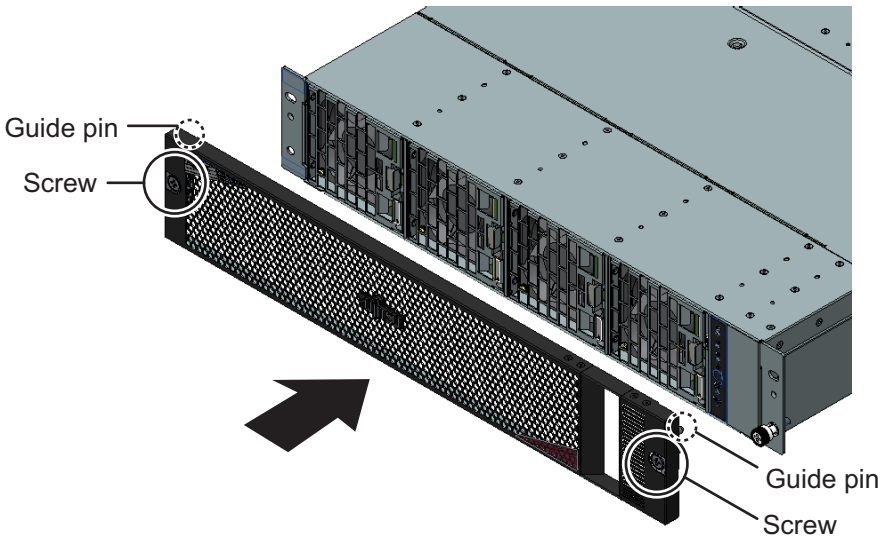
1. **Remove the front bezel fixing screws (circled parts), and remove the front bezel.**



3.24 Installing the Front Bezel

The following is the procedure for installing the front bezel.

1. **Insert the left and right guide pins into the chassis, and secure the bezel with two screws.**



Chapter 4 Basic Software Procedures

This chapter describes software procedures related to operation, including starting maintenance work, updating HCP firmware, and collecting system event logs.
The term HCP**** refers to the version number of the HCP firmware (****: 4-digit number).

4.1 Maintenance Work

To replace a part, set maintenance mode from the Web GUI.

- **For replacement with all nodes stopped, set [Cold Maintenance].**

  For the setting procedure, see "4.1.1 Setting Maintenance Mode." You can replace every service part from [Cold Maintenance].
  Before replacing a part, disconnect the power cords.

- **For active replacement while nodes are operating, configure settings for each CMU/PSU/FANU.**

  For the setting procedure, see "4.1.1 Setting Maintenance Mode."
  For precautions on FANU failures, see "4.1.3 Precaution on Maintenance Mode."

4.1.1 Setting Maintenance Mode

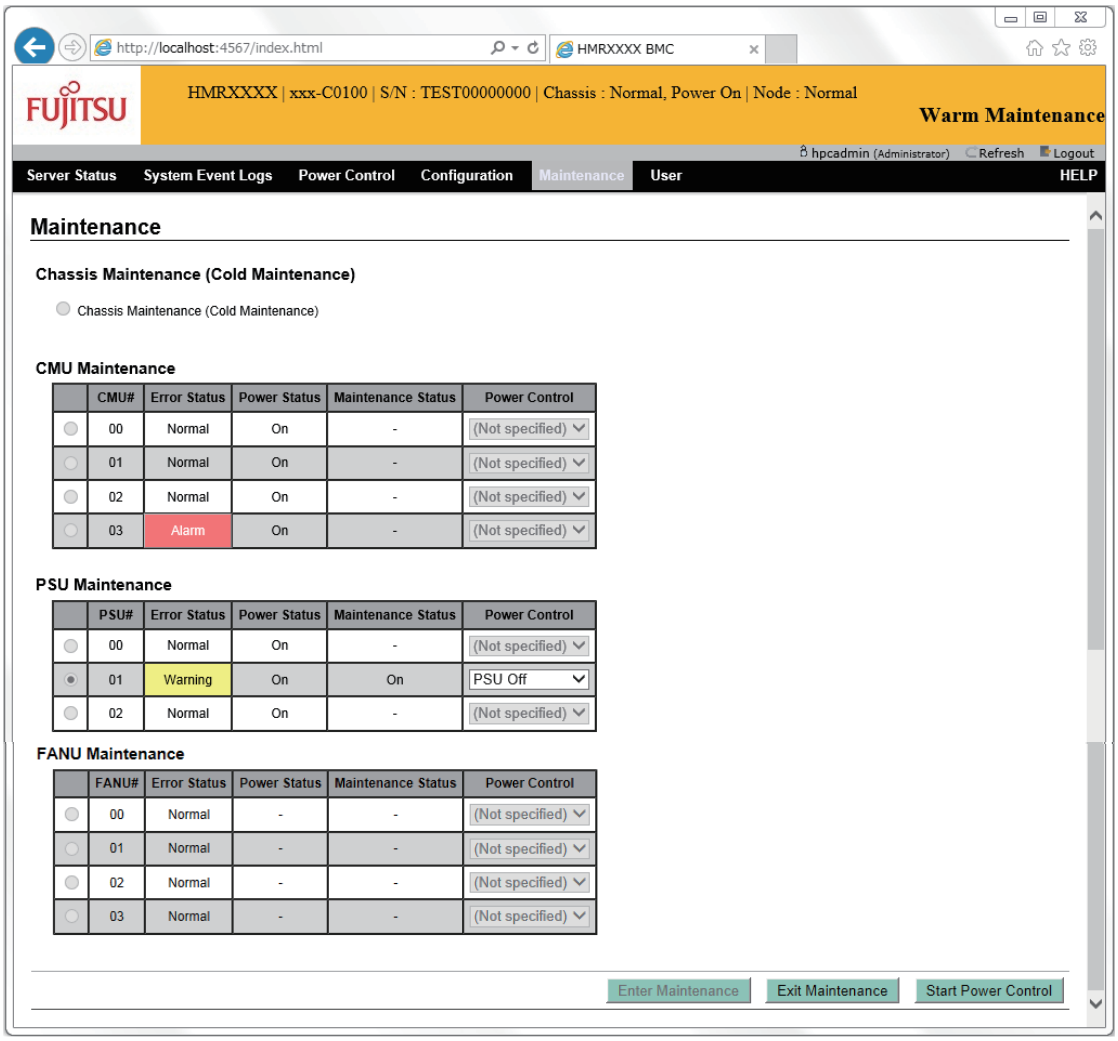
1. **Log in to the Web GUI.**

   For details on how to log in, see "2.1 Login and Logout" in the *FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide* (C120-0091EN).

2. **Select [Maintenance] from the menu.**

   The [Maintenance] screen appears.

Figure 4.1 [Maintenance] Screen



3. **Select the radio button of the part requiring maintenance, and click the [Enter Maintenance] button at the bottom of the screen.**

   The Information area at the top of the screen changes color to orange and displays "Warm Maintenance" or "Cold Maintenance" at the right.

4. **Confirm that the location LED of the device requiring maintenance (the one with the selected radio button) lights up.**

4.1.2 Clearing Maintenance Mode

1. **Log in to the Web GUI.**

   For details on how to log in, see "2.1 Login and Logout" in the *FUJITSU Supercomputer PRIMEHPC FX700 BMC User's Guide* (C120-0091EN).

2. **Select [Maintenance] from the menu.**

   The [Maintenance] screen appears.

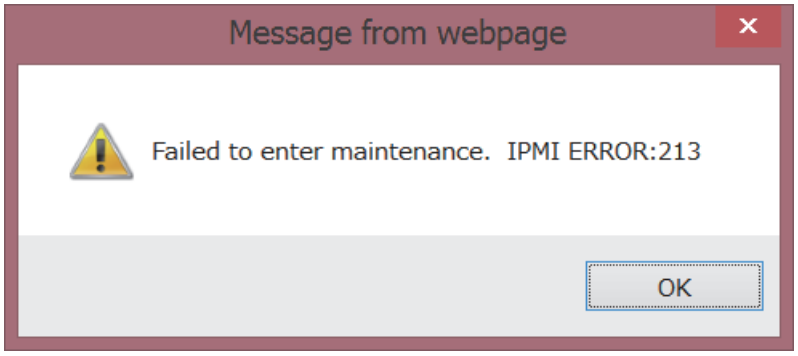
3. **Click the [Exit Maintenance] button at the bottom of the screen.**

The Information area at the top of the screen turns clear, and the location LED of the part requiring maintenance is turned off.

4.1.3 Precaution on Maintenance Mode

If a failure occurs in the FANU, maintenance mode cannot be set for the CMU. Also, the following message will appear.

Figure 4.2 Error Message (at FANU Failure)



For this reason, replace the FANU first.

4.2 Updating HCP Firmware

To update HCP firmware, configure settings from the Web GUI.

- **Selecting and registering HCP firmware from [Firmware Update]**

  For the setting procedure, see "4.2.1 Registering HCP Firmware."
  For the precaution during updates, see "4.1.3 Precaution on Maintenance Mode."

- **Applying HCP firmware**

  For the setting procedure, see "4.2.2 Applying HCP Firmware."

Remarks

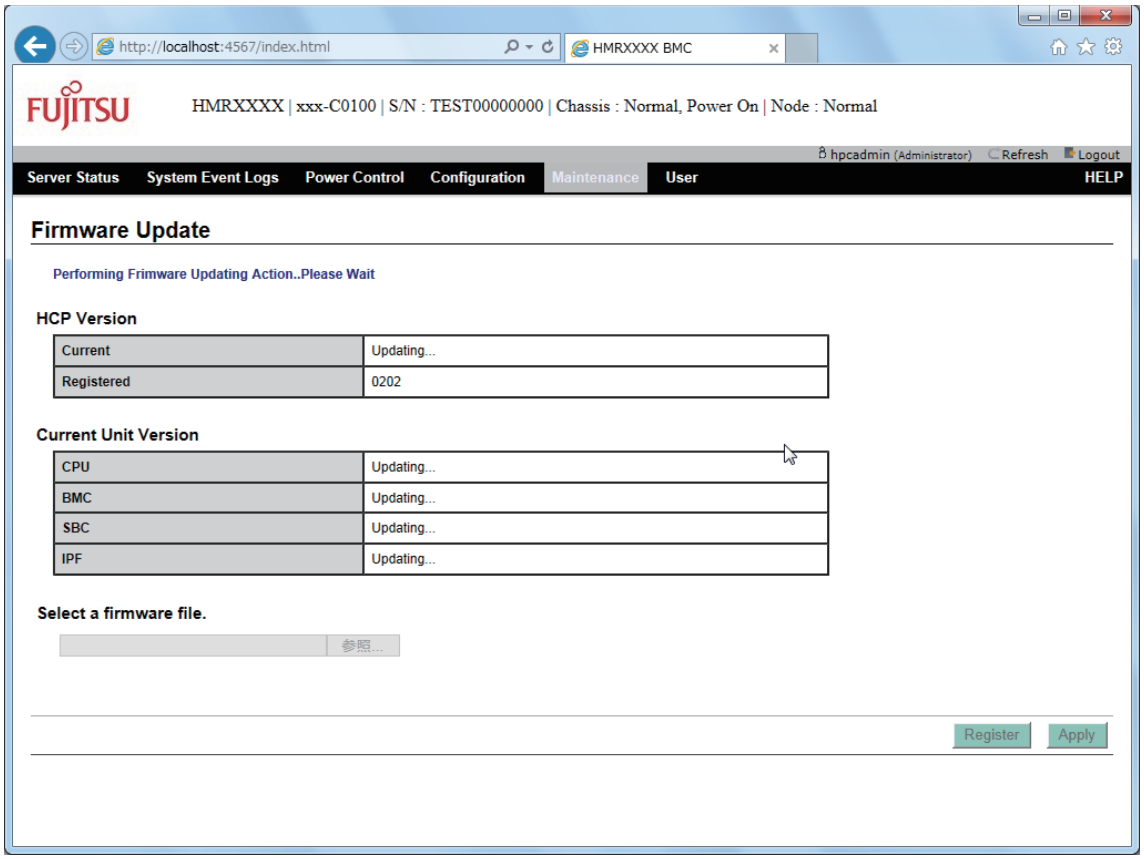
Before selecting [Firmware Update], confirm that [Running Status] is "Stop" for all nodes.

4.2.1 Registering HCP Firmware

1. **Log in to the Web GUI.**
2. **Select [Firmware Update] in [Maintenance] from the menu.**

   The [Firmware Update] screen appears

Figure 4.3 [Firmware Update] Screen



3. **Click the [Browse] button, and select the HCP firmware to be registered.**
4. **Click the [Register] button.**

   A dialog box appears and displays a message about overwriting the already registered HCP firmware.

Figure 4.4 Confirmation Dialog Box

5. **Click the [OK] button.**

   [Registered] in [HCP Version] displays the version number of the registered HCP firmware.

Remarks

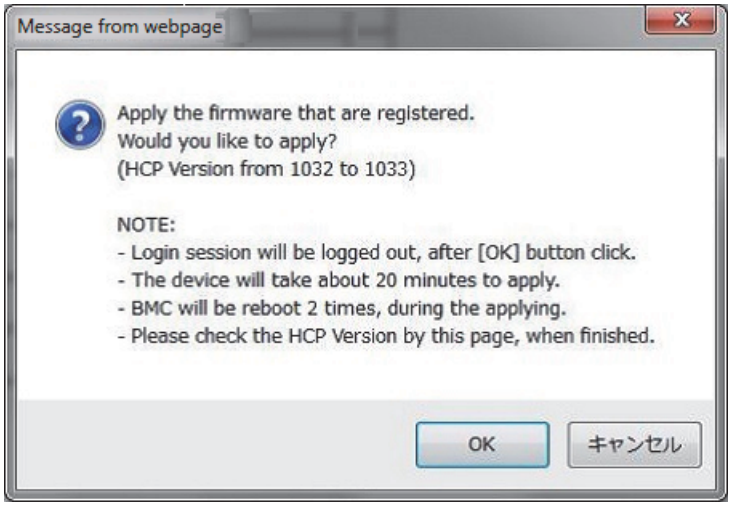
- HCP firmware registration takes about 5 minutes to complete.
- If the HCP firmware registration fails, try again to register it.

4.2.2 Applying HCP Firmware

1. **Confirm that [Registered] in [HCP Version] displays the version number of the HCP firmware to be applied.**
2. **Click the [Apply] button.**

   A confirmation dialog box appears.

Figure 4.5 Confirmation Dialog Box



3. **Click the [OK] button.**

   HCP firmware application begins.

   Remarks

   - HCP firmware application takes between 5 and 30 minutes to complete.

4. **The BMC may restart and not be accessible to the Web GUI during HCP firmware application. For this reason, select [Firmware Update] in [Maintenance] from the menu again.**

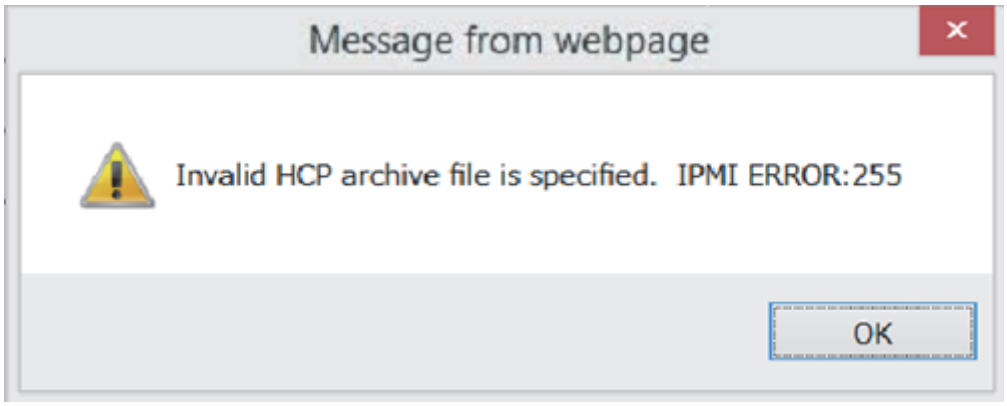
   The [Firmware Update] screen appears

5. **Confirm that both [Current] in [HCP Version] and [Current Unit Version] display the version number of the applied HCP firmware.**

4.2.3 Precaution During Updates

If the uploaded HCP archive is invalid due to file damage, etc., an error message appears.

Figure 4.6 Error Message (at Upload)



Start the HCP firmware registration procedure again from the beginning.

4.3 System Event Log (SEL)

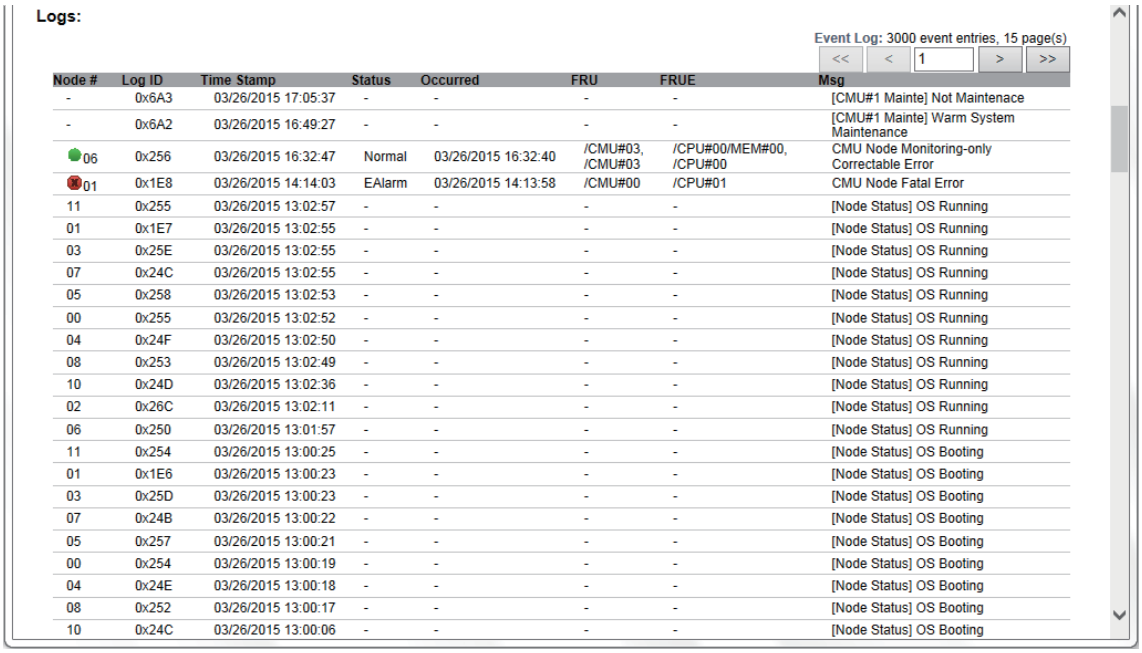
4.3.1 Displaying SEL

From the system event log, the [System Event Logs] screen displays the 3,000 most recent events that occurred in the FX700 main unit. The screen displays 200 events per page.

1. **Log in to the Web GUI.**
2. **Select [System Event Logs] from the menu.**

   The [System Event Logs] screen appears, and [Logs:] at the bottom of the screen displays a SEL list.

Figure 4.7 Displayed SEL List



Logs:

Event Log: 3000 event entries, 15 page(s)

<< < 1 > >>

Node #	Log ID	Time Stamp	Status	Occurred	FRU	FRUE	Msg
-	0x6A3	03/26/2015 17:05:37	-	-	-	-	[CMU#1 Mainte] Not Maintenace
-	0x6A2	03/26/2015 16:49:27	-	-	-	-	[CMU#1 Mainte] Warm System Maintenance
06	0x256	03/26/2015 16:32:47	Normal	03/26/2015 16:32:40	/CMU#03, /CMU#03	/CPU#00/MEM#00, /CPU#00	CMU Node Monitoring-only Correctable Error
01	0x1E8	03/26/2015 14:14:03	EAlarm	03/26/2015 14:13:58	/CMU#00	/CPU#01	CMU Node Fatal Error
11	0x255	03/26/2015 13:02:57	-	-	-	-	[Node Status] OS Running
01	0x1E7	03/26/2015 13:02:55	-	-	-	-	[Node Status] OS Running
03	0x25E	03/26/2015 13:02:55	-	-	-	-	[Node Status] OS Running
07	0x24C	03/26/2015 13:02:55	-	-	-	-	[Node Status] OS Running
05	0x258	03/26/2015 13:02:53	-	-	-	-	[Node Status] OS Running
00	0x255	03/26/2015 13:02:52	-	-	-	-	[Node Status] OS Running
04	0x24F	03/26/2015 13:02:50	-	-	-	-	[Node Status] OS Running
08	0x253	03/26/2015 13:02:49	-	-	-	-	[Node Status] OS Running
10	0x24D	03/26/2015 13:02:36	-	-	-	-	[Node Status] OS Running
02	0x26C	03/26/2015 13:02:11	-	-	-	-	[Node Status] OS Running
06	0x250	03/26/2015 13:01:57	-	-	-	-	[Node Status] OS Running
11	0x254	03/26/2015 13:00:25	-	-	-	-	[Node Status] OS Booting
01	0x1E6	03/26/2015 13:00:23	-	-	-	-	[Node Status] OS Booting
03	0x25D	03/26/2015 13:00:23	-	-	-	-	[Node Status] OS Booting
07	0x24B	03/26/2015 13:00:22	-	-	-	-	[Node Status] OS Booting
05	0x257	03/26/2015 13:00:21	-	-	-	-	[Node Status] OS Booting
00	0x254	03/26/2015 13:00:19	-	-	-	-	[Node Status] OS Booting
04	0x24E	03/26/2015 13:00:18	-	-	-	-	[Node Status] OS Booting
08	0x252	03/26/2015 13:00:17	-	-	-	-	[Node Status] OS Booting
10	0x24C	03/26/2015 13:00:06	-	-	-	-	[Node Status] OS Booting

Table 4.1 SEL Display Items and Displayed Contents

Display Item	Details of Display
Page(s)	Displays the number of registered log entries and the number of pages in the log. You can move between pages by using the [<] button and [>] button.
Node #	Displays one of the following icons according to [Status] and the node number (00 to 07 or "-" (hyphen) for the FX700 main unit) registered for the event: - EAlarm/Alarm: - Warning: - Normal:
Log ID	Uses hexadecimal numbers to show the order of log registration.
Time Stamp	Displays the log registration dates and times.
Status	Displays the error status. - EAlarm: Immediately stop using the part indicated as suspect. The suspected unit must be replaced immediately. - Alarm: After the job is completed, stop using the part indicated as suspect. Then, that FRU must be replaced immediately. - Warning: Continue using the part indicated as suspect. The suspected unit must be replaced during scheduled maintenance. - Normal: Neither the part indicated as suspect nor the suspected unit needs to be replaced.
Occurred	Displays the error occurrence date and times.
FRU	Displays up to two suspected units per entry.
FRUE	Displays the suspected parts.
Msg	Displays descriptions of the errors.

Remarks

- You can display log details from a log column by double-clicking on the column.

4.3.2 Specifying Filter Conditions

To filter the display of SEL in [Logs:], specify filter conditions in [Event type Filter:] on the [System Event Logs] screen.

Figure 4.8 Specifying Filter Conditions

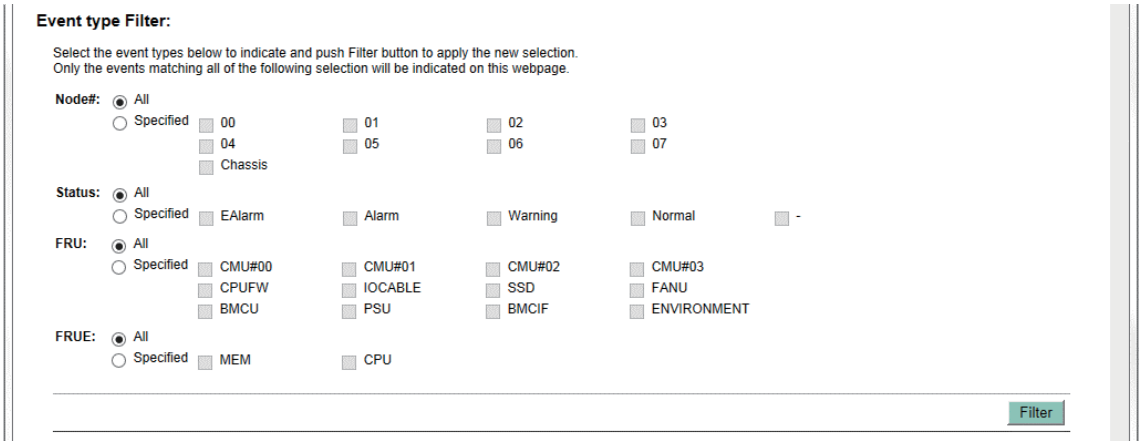


Table 4.2 Specifying Filter Conditions

Input Item	Description
Node#:	If the [All] radio button is selected, none of the check boxes of [Specified] can be checked. If the [Specified] radio button is selected, check the check boxes of the nodes to display in [Logs:]. (Multiple selections allowed)
Status:	If the [All] radio button is selected, none of the check boxes for [Specified] can be checked. If the [Specified] radio button is selected, check the check boxes of the error states to display in [Logs:]. (Multiple selections allowed)
FRU:	If the [All] radio button is selected, none of the check boxes for [Specified] can be checked. If the [Specified] radio button is selected, check the check boxes of the FRUs to display in [Logs:]. (Multiple selections allowed)
FRUE:	If the [All] radio button is selected, none of the check boxes for [Specified] can be checked. If the [Specified] radio button is selected, check the check boxes of the FRUEs to display in [Logs:]. (Multiple selections allowed)

4.3.3 Collecting a Snapshot

A snapshot is used to investigate in detail a hardware failure.
Before collecting a snapshot, contact your local Fujitsu service center.

1. **Click the [Collect] button under [Snapshot Files:].**

   The [Collect Settings] dialog box appears.

Figure 4.9 Clicking the [Collect] Button

2. **Specify settings in [Type] and [Encrypt], and click the [Collect] button.**

   A message appears.

Figure 4.10 Specifying Settings in [Type] and [Encrypt]

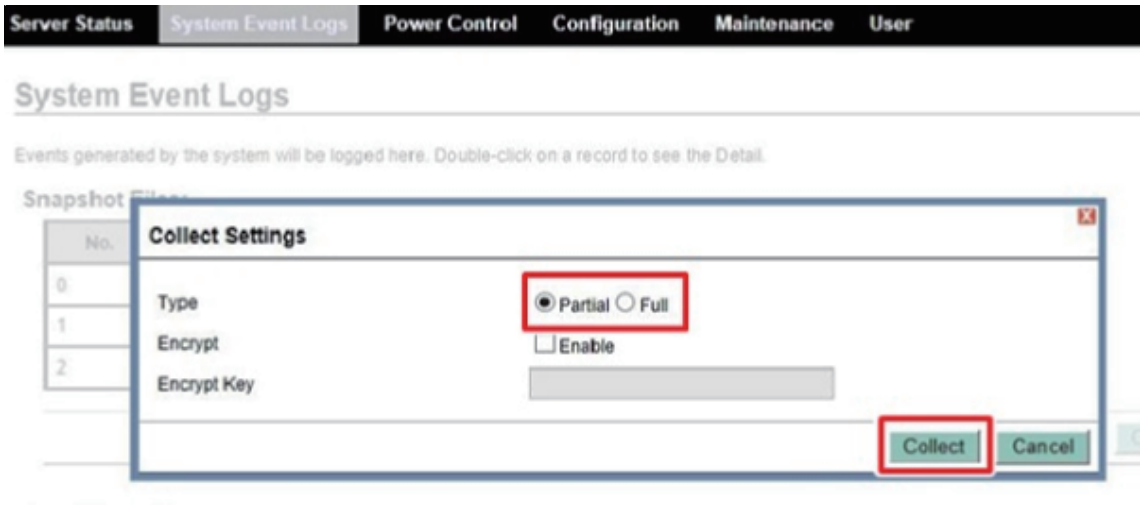


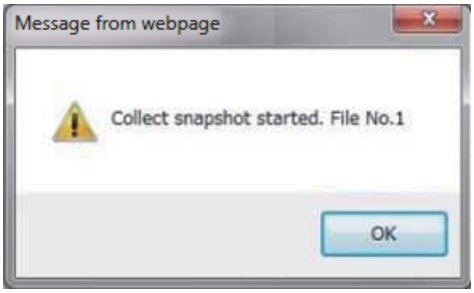
Table 4.3 Specifying Settings in [Type] and [Encrypt]

Input Item	Description
Type	Specify the type of snapshot to collect: - Partial: Reduced-size snapshot - Full: Maximum-size log snapshot
Encrypt	To encrypt the snapshot, check the check box.

3. **Click the [OK] button.**

   Snapshot collection begins.

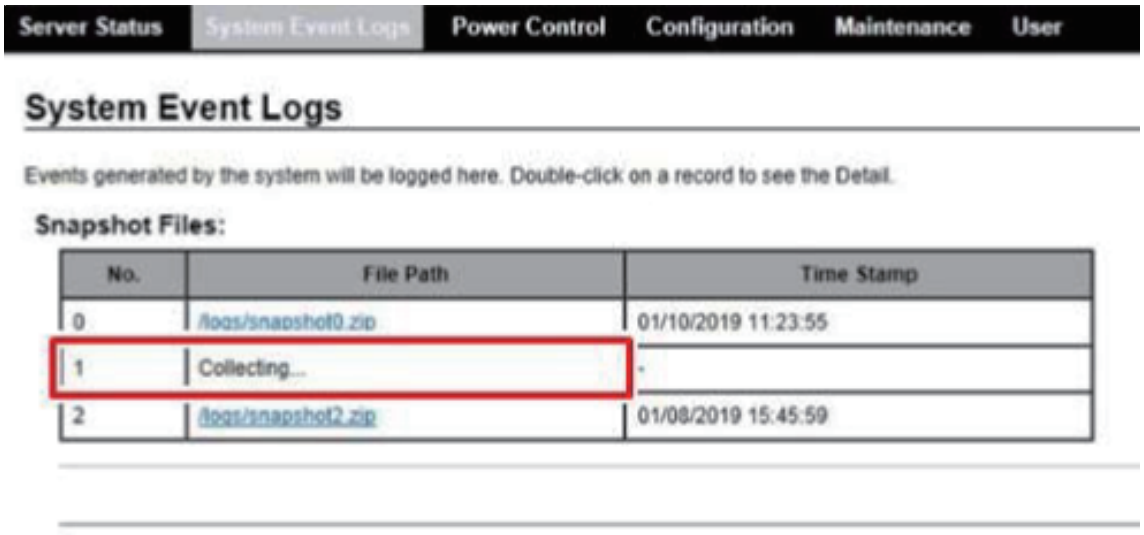
Figure 4.11 Message Displayed



Remarks

[Collecting ...] appears as shown in "Figure 4.12 Display During Snapshot Collection" when snapshot collection begins.

Figure 4.12 Display During Snapshot Collection



4. **After collection, wait a moment before clicking the [Refresh] button at the upper right of the screen.**

   [File Path] in [Snapshot Files:] displays the file name for the snapshot on the BMC when snapshot collection is completed.

5. **Click the BMC file path displayed in [File Path] to download the snapshot.**

Figure 4.13 Downloading a Snapshot

4.3.4 Collecting an Environment Log

An environment log is used to investigate in detail a hardware failure.
Before collecting an environment log, contact your local Fujitsu service center.

1. Specify a node number and log type in [Environment Logs:], and click the [Download] button.

Figure 4.14 Collecting an Environment Log

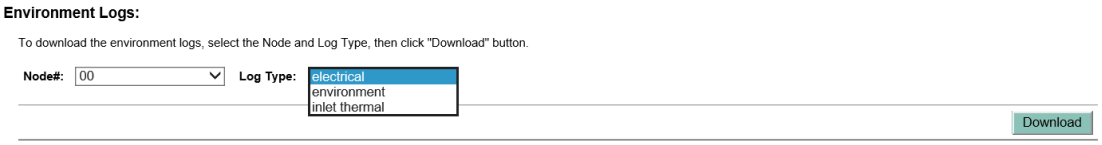


Table 4.4 Collecting an Environment Log

Input Item	Description
Node#:	Specify a node number.
Log Type:	Specify any of [electrical], [environment], and [inletthermal].

4.4 Controlling Nodes

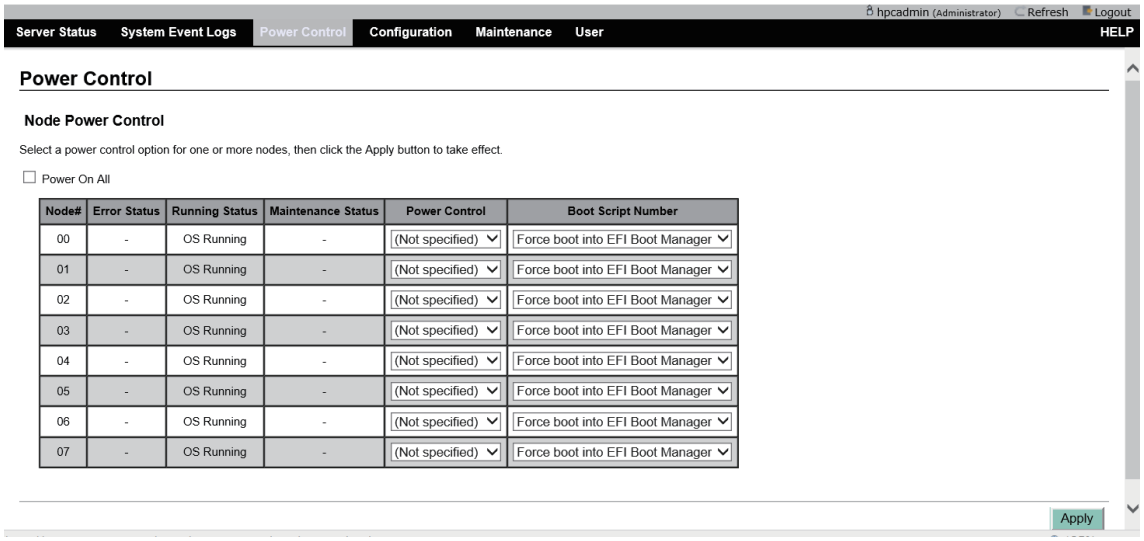
Control the power of the FX700 main unit and nodes as shown below.

4.4.1 Power Operations

1. **Log in to the Web GUI.**
2. **Select [Power Control] from the menu.**

   The [Power Control] screen appears.

Figure 4.15 [Power Control] Screen



3. **Specify an operation in [Power Control] for a node.**

   For a powered-off node, you can specify either of the following:

Power On (Not specified)	- Power On: Issues a power-on instruction. - (Not specified): Does nothing. (Selected by default)

   For a powered-on node, you can specify any of the following:

Stop Reset Dump Request OS Shutdown (Not specified)	- Stop: Stops the node. - Reset: Restarts the OS on the node. - Dump Request: Issues an instruction to collect an OS dump. - OS Shutdown: Stops the OS on the node. - (Not specified): Does nothing. (Selected by default)

Remarks

- Check the [Power On All] check box to specify [Power On] as the selection in [Power Control] for all nodes.

4. **Specify a start mode in [Boot Script Number].**

Figure 4.16 Specifying a Start Mode

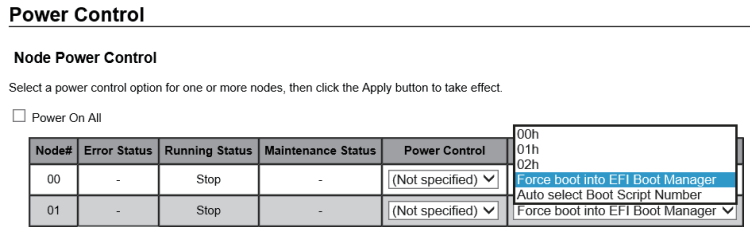


Table 4.5 Specifying a Start Mode

Input Item	Description
00h	Disk boot
01h	Not supported
02h	For OS installation
Force boot into EFI Boot Manager	Stops at UEFI. (Default)
Auto select Boot Script Number	Automatically select DISK boot.

5. Click the [Apply] button at the bottom of the screen.

Table 4.6 Display Items on the [Power Control] Screen

Display Item	Description
Node#	Displays the node numbers (#00 to #07).
Error Status	Displays the error status of nodes: - EA: RouterEAlarm (Alarm) - A: Alarm (Alarm) - R: ReservedAlarm (Alarm) - RR-U: ResetRequest-U (Alarm) - RR-C: ResetRequest-C (Warning) - W: Warning (Warning) - -: Normal (Normal) - Not-Present: CMU not mounted - Unknown: Failed to retrieve status
Running Status	Displays the operating status of nodes: - Stop - Reset - POST - UEFI Shell - OS Booting - OS Running - OS Panic - OS Shutdown - Unknown (Failed to retrieve status) - - (CMU not mounted)
Maintenance Status	Displays the maintenance status of nodes: - On: Mode of maintenance in progress (Warm Maintenance) - -: Other - Unknown: Failed to retrieve status

4.5 Setting the Time

Set the date and time and display the settings as shown below.

Figure 4.17 Setting the Date and Time

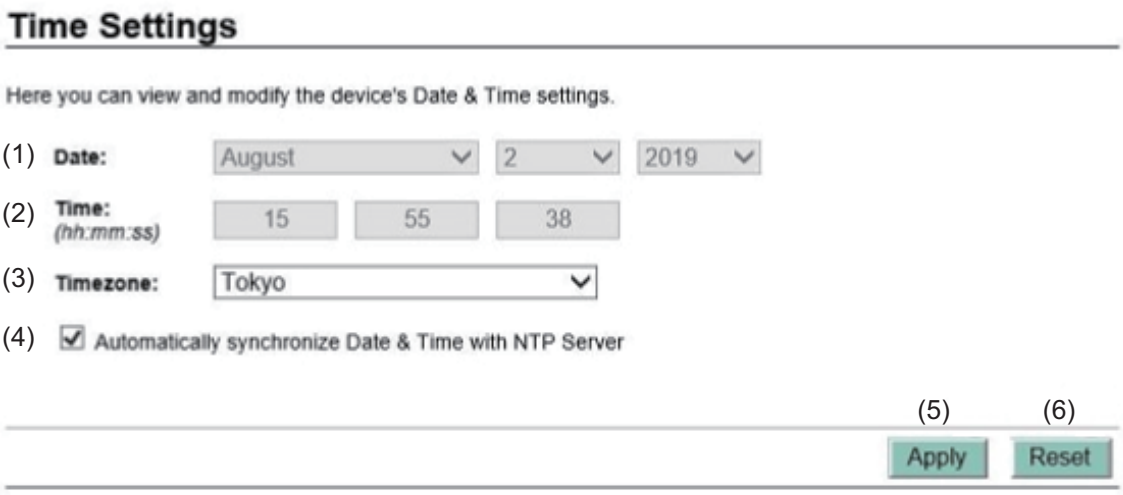


Table 4.7 Setting the Date and Time

No.	Input/Display Item	Description
(1)	Date:	Specify a date with the pulldown menus.
(2)	Time:	Specify a time in the 24-hour format.
(3)	Timezone:	Specify a time zone.
(4)	Automatically synchronize Date & Time with NTP Server	To synchronize the time with the NTP server, check the check box.
(5)	Apply	Click to apply the specified values as the date and time settings.
(6)	Reset	Click to clear the specified values and reload the current date and time settings.

4.6 Checking the I/O Configuration

4.6.1 Connecting to the Console

To check the I/O configuration, connect the console. For the console connection to the node, use an ssh connection to the BMC.
The port number is 9000 + node number.
Example: For node 1
9000 + 1 = 9001

```
$ ssh -p 9001 hpcmainte@{BMC IP address}
```

The password is "HPCMAINTE".

4.6.2 Displaying Configuration Information

Check "M.2 Slot Device Status" and "PCI Slot Device Status."
PASS means "mounted" and MISS means "not mounted."

Note

The only UEFI shell command supported on this device is the showinfo command. The input of a command or characters other than showinfo may interfere with device operation.

```
Shell> showinfo
.
.
M.2 Slot Device Status: PASS
PCI Slot Device Status: PASS
.
```

4.7 Installing the OS

See "3.17 Installing the OS" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

4.8 Installing the InfiniBand Driver

See "3.18 Installing the InfiniBand Driver" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

Chapter 5 Blade

This chapter describes the handling of the blades.

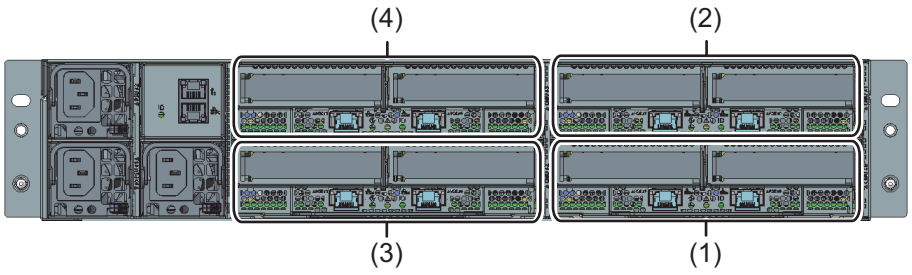
CAUTION

- Do not damage or manipulate the internal cables and devices. Doing so may damage parts or cause fire or electric shock.
- Even after shutdown, the internal devices and components of the blade remain hot for a while. After shutting down a blade, wait until the hot components are cool before installing or removing an internal option.
- The circuits and soldered parts of internal options are sensitive to static electricity because they are exposed. Before handling an electrostatic-sensitive device (ESD), be sure to first discharge static electricity from your body, such as by touching a grounded object (ground).
- Do not touch the electrical circuits and soldered parts of boards. Be sure to hold circuit boards by the slot bracket or edge.
- Installation or disassembly of a device in a way not shown in this chapter voids the warranty.
- For details, see "Chapter 2 Important Information."

5.1 Basic Information

The chassis has one to four mounted blades.

Figure 5.1 Rear Configuration of the FX700 Main Unit



Location	Component
(1)	CMU#00
(2)	CMU#01
(3)	CMU#02
(4)	CMU#03

CAUTION

- The blades need to be mounted in the order shown in "Table 5.1 Mounting Order in Blade Installation."

Table 5.1 Mounting Order in Blade Installation

	CMU#00	CMU#01	CMU#02	CMU#03
Number of blades: 1	1			
Number of blades: 2	1	2		
Number of blades: 3	1	2	3	
Number of blades: 4	1	2	3	4

- At any of these locations where no blade will be mounted, always install a dummy blade in order to comply with applicable EMC directives.

5.2 Replacing the Blade

Work contents: Field replaceable unit (FRU)
Work time: 20 minutes for hardware
Tools: None required

5.2.1 Preliminary Steps

Perform the following procedure to prepare for blade replacement.

1. **Look for the target blade according to "3.1.3 Identifying a Faulty Part."**
2. **Shut down that blade.**

   See "3.2 Shutting Down the FX700 Main Unit."
3. **From the Web GUI, configure CMU replacement in maintenance mode.**
4. **Remove all external cables from the blade.**

   Remarks

   If your finger is too big to touch the connector lock when disconnecting a LAN or other cable, the cable cannot be removed.

   In that case, unlock the connector lock by pushing it with a flathead screwdriver. Then, remove the cable by pulling it and the screwdriver out together.

5.2.2 Removing the Blade

See "3.5 Removing the Blade."

5.2.3 Removing the Riser Module and M.2 SSD

Remove all the riser modules and M.2 SSDs from the blade.
See "3.22.1 Removing the Riser Module (for PCIE#00)."
See "9.2.2 Removing the M.2 SSD."

5.2.4 Installing the Riser Module and M.2 SSD

Install the removed riser modules and M.2 SSDs in the new blade.
See "3.22.2 Installing the Riser Module (for PCIE#00)."
See "9.2.3 Installing the M.2 SSD."

5.2.5 Installing the Blade

See "3.14 Installing the Blade."

5.2.6 Final Steps

Perform the following procedure to put everything back together.

1. **Connect all the external cables.**
2. **Confirm startup.**

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.

   Specify [Both Node On] in the [Power Control] pulldown menu, and click the [Start Power Control] button.
3. **Check the I/O configuration.**

   See "4.6 Checking the I/O Configuration."
4. **Turn off the power.**

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.

   Specify [Both Node Off] in the [Power Control] pulldown menu, and click the [Start Power Control] button.
5. **From the Web GUI, clear maintenance mode.**

5.3 Adding a Blade

Work contents: Upgrade and Repair Unit (URU)
Work time: 20 minutes for hardware
Tools: None required

5.3.1 Preliminary Steps

1. **From the Web GUI, configure CMU replacement in maintenance mode.**

5.3.2 Removing the Dummy Blade

See "3.11.2 Removing the Dummy Blade From the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

5.3.3 Installing the Blade

1. **If necessary, install InfiniBand cards and M.2 SSDs in the blade.**

   See "8.2.3 Installing an InfiniBand Card."
   See "9.2.3 Installing the M.2 SSD."

2. **Install the blade in the chassis.**

   See "3.9.1 Installing the Blade in the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

5.3.4 Final Steps

Perform the following procedure to put everything back together.

1. **Connect all the external cables.**
2. **Confirm startup.**

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.
   Specify [Both Node On] in the [Power Control] pulldown menu, and click the [Start Power Control] button.

3. **Check the I/O configuration.**

   See "4.6 Checking the I/O Configuration."

4. **Turn off the power.**

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.
   Specify [Both Node Off] in the [Power Control] pulldown menu, and click the [Start Power Control] button.

5. **From the Web GUI, clear maintenance mode.**

   See "4.1.2 Clearing Maintenance Mode."

6. **Install the OS and drivers.**

   See "3.17 Installing the OS" and "3.18 Installing the InfiniBand Driver" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

Chapter 6 PSU (Power Supply Unit)

This chapter describes the handling of the PSUs (power supply units).

CAUTION

Safety Precautions

- Do not dismantle the PSUs. Otherwise, electric shock may result.
- Even after shutdown, the temperature around the PSUs remains high. After turning off a PSU, wait until the hot components are cool before removing the PSU.
- When installing a PSU, confirm that the PSU connectors are neither damaged nor bent.
- Be careful when handling the PSUs because they are heavy. If inadvertently dropped, a PSU may cause injury.
- For details, see "Chapter 2 Important Information."

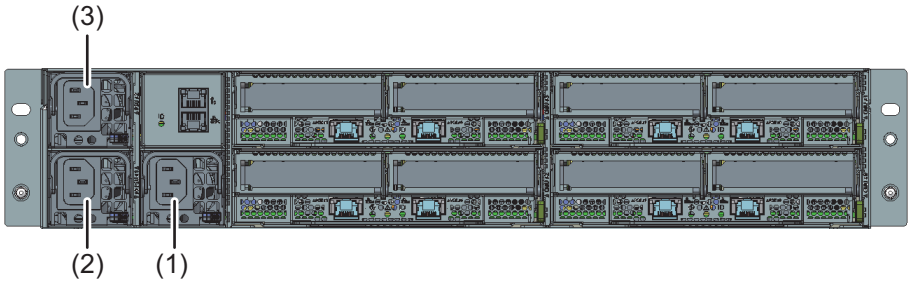
6.1 Basic Information

In the basic configuration, the FX700 main unit has two mounted PSUs. The PSUs are automatically adjusted to the main power voltage within a range from 200 V to 240 V (80 PLUS Platinum). You can install a third PSU as an option for use as a redundant power supply. With the PSUs in a redundant configuration, even if one PSU fails, operation does not stop but continues. Also, the faulty PSU can be replaced during operation. (Hot plug) You can install the third PSU during operation.

CAUTION

This AC PSU is automatically adjusted to the main power voltage within a range from 200 V to 240 V (80 PLUS Platinum). The FX700 main unit operates only when the main power voltage at the location corresponds to the rated voltage range.

Figure 6.1 PSU Mounting Locations



Location	Component
(1)	PSU#00
(2)	PSU#01
(3)	PSU#02 (optional)

CAUTION

- Mount the PSUs in order of priority, which is PSU#00 to PSU#01 to PSU#02.
- At any of these locations where no PSU will be mounted, always install a dummy PSU in order to comply with applicable EMC directives.

6.2 Replacing a PSU

Work contents: Customer replaceable unit (CRU)
Work time: 10 minutes for hardware
Tools: None required

6.2.1 Preliminary Steps

1. **Look for the target PSU.**

   See "3.1 Using Diagnostic Information."
   See "A.2.2.2 Hot-Plug PSU LED."

2. **From the Web GUI, configure PSU replacement in maintenance mode.**

   See "4.1.1 Setting Maintenance Mode."

3. **From the Web GUI, power off the PSU to be replaced.**

   Select [PSU Off] from [Power Control] in [PSU Maintenance] on the [Maintenance] screen.

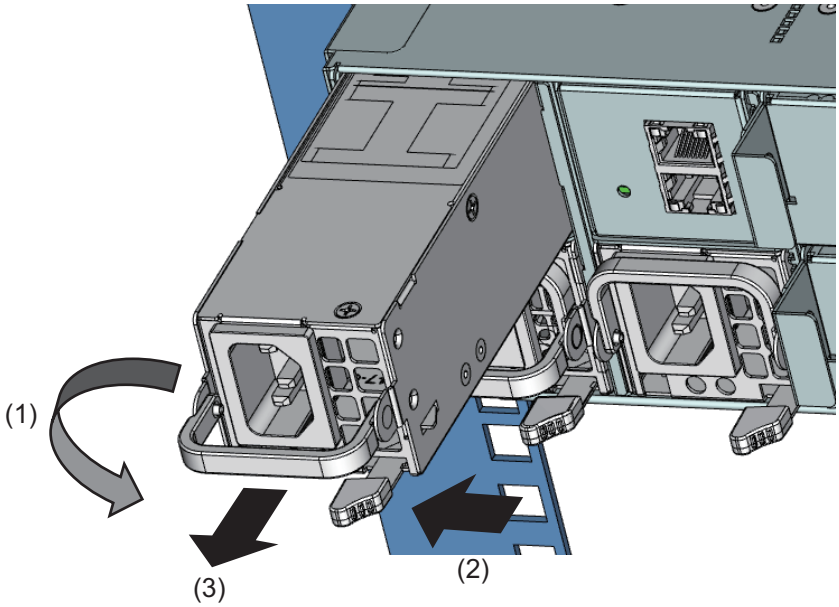
4. **Disconnect the power cord from the faulty PSU.**

   See "3.3 Disconnecting Power Cords."
   The FX700 main unit does not need to be powered off.

6.2.2 Removing the PSU

This section describes how to remove a PSU.

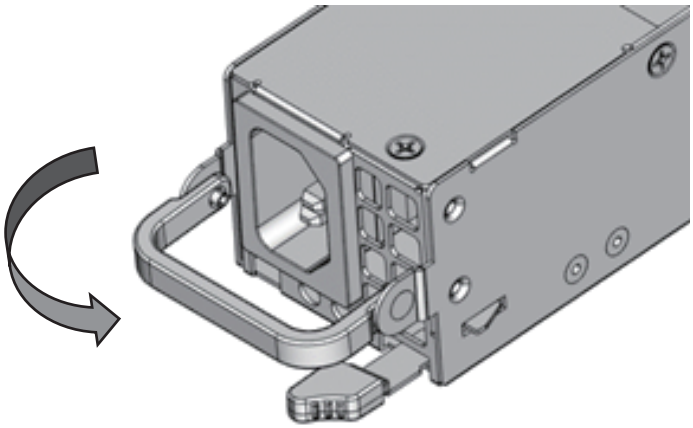
1. **Lift up the handle on the PSU halfway in the direction of the arrow (1), and push the latch (2). While pushing the latch, pull out the PSU (3).**



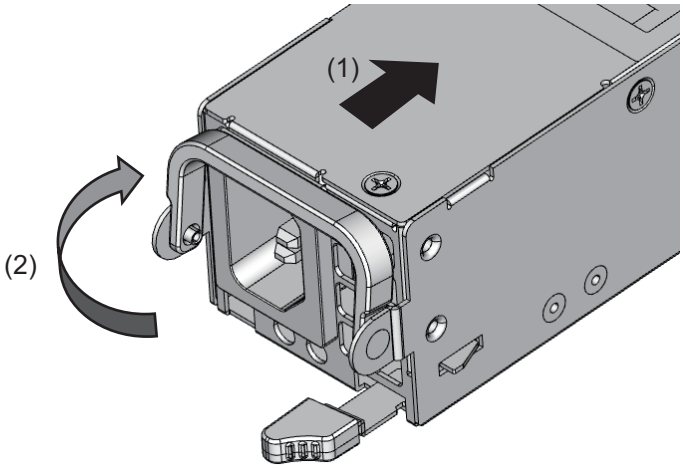
6.2.3 Installing the PSU

This section describes how to install the PSU.

1. **Lift up the handle on the PSU halfway in the direction of the arrow.**



2. **Push in the PSU (1) until the latch clicks and locks in place. Fold back the handle on the PSU (2).**



CAUTION

Confirm that the PSU has been firmly inserted and is secured.

6.2.4 Final Steps

1. **From the Web GUI, power on the newly installed PSU.**

   Select [PSU On] from [Power Control] in [PSU Maintenance] on the [Maintenance] screen.

2. **From the Web GUI, clear maintenance mode.**

   See "4.1.2 Clearing Maintenance Mode."

6.3 Adding a PSU

Work procedure classification: Upgrade and repair unit (URU)
Work time: 10 minutes for hardware
Required tools: None required

6.3.1 Advance Preparation

1. **To add a PSU, check the check box of the PSU on the [Maintenance] screen of the Web GUI, and click the [Enter Maintenance] button.**

   The FX700 main unit does not need to be powered off.

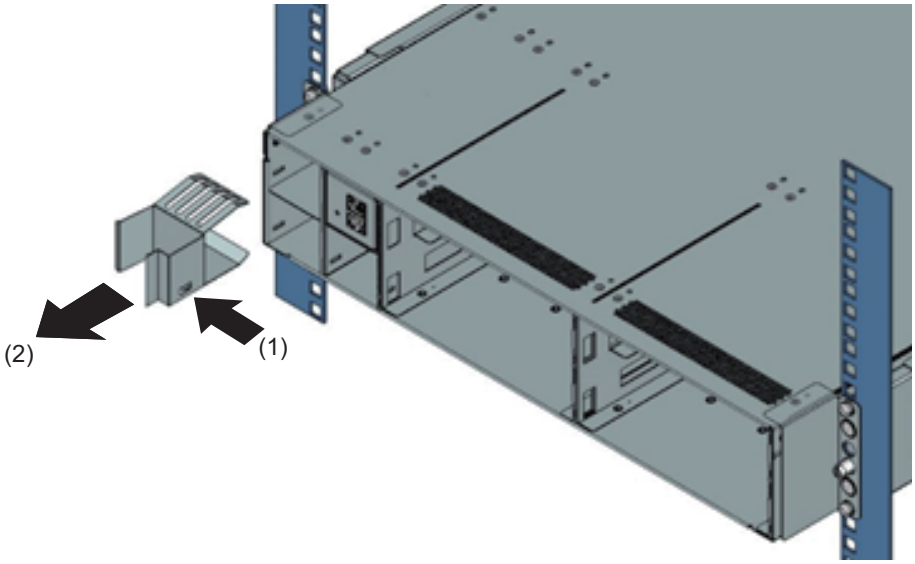
6.3.2 Removing the Dummy PSU

This section describes how to remove the installed dummy PSU in order to add the PSU.

CAUTION

- When performing warm maintenance, mount the PSU within 1 minute after removing the dummy PSU.
- Keep the dummy PSU, considering that it may be used the future.

1. **While pushing the latch (1), remove the dummy PSU in the direction of the arrow (2).**



6.3.3 Installing the PSU

This section describes how to install the PSU.
See "6.2.3 Installing the PSU."

6.3.4 Final Steps

1. **From the Web GUI, set the newly installed PSU to maintenance mode.**
2. **From the Web GUI, power on the newly installed PSU.**
3. **From the Web GUI, clear maintenance mode.**

Remarks

- When reducing the PSUs, install a dummy PSU.
- Removing a PSU during warm maintenance and clicking [Exit Maintenance] causes the System alarm LED on the main unit to blink and the Web GUI screen to display a warning for the chassis. However, use of the chassis can continue.
  To clear the warning from the display and turn off the LED, turn AC power off and on.

Chapter 7 FANU (Fan Unit)

This chapter describes the handling of the FANUs (fan units).

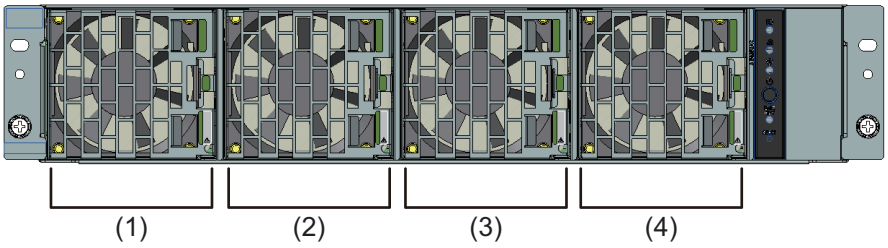
⚠CAUTION

- Do not damage or manipulate the internal cables and devices. Doing so may damage parts or cause fire or electric shock.
- The circuits and soldered parts of internal options are sensitive to static electricity because they are exposed. Before handling an electrostatic-sensitive device (ESD), be sure to first discharge static electricity from your body, such as by touching a grounded object (ground).
- Do not touch the electrical circuits and soldered parts of boards. Be sure to hold circuit boards by the slot bracket or edge.
- Installation or disassembly of a device in a way not shown in this chapter voids the warranty.
- For details, see "Chapter 2 Important Information."

7.1 Basic Information

The chassis has four mounted hot-plug FANUs.

Figure 7.1 Front Configuration of the FX700 Main Unit (Without the Front Bezel)



Location	Component
(1)	FANU#00
(2)	FANU#01
(3)	FANU#02
(4)	FANU#03

7.2 Replacing a FANU

Work contents: Field replaceable unit (FRU)
Work time: 10 minutes for hardware
Tools: Phillips PH2/(+) No.2 screwdriver

CAUTION

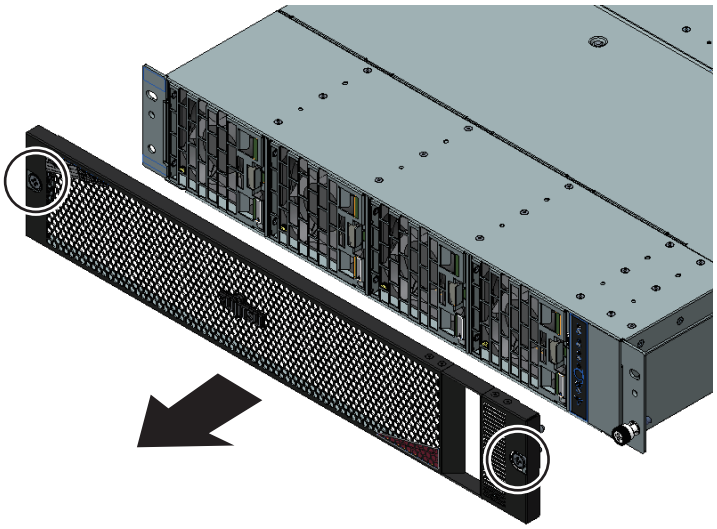
- Be careful when unlocking the FANU lock while the device is running because the FANU may then be ejected with great force.
- When inserting a FANU during warm maintenance, you need to push the FANU forcefully against (60 N or more) and quickly past (within about 1 second) the flap.
- If it takes a long time to push past the FLAP, the FANU LED may light up. If the FANU LED lights up, pull out this FANU immediately. After the fan stops rotating, retry the work.
- If the faulty FANU is left as is, it cannot cool the CMU in operation, and the CMU may stop. So be sure to try again.

7.2.1 Preliminary Steps

1. **From the Web GUI, configure FANU replacement in maintenance mode.**

   See "4.1.1 Setting Maintenance Mode."

2. **Remove the front bezel fixing screws (circled parts), and remove the front bezel.**



3. **Check the LED of each FANU to identify the faulty FANU.**

   See "A.2.1.3 FANU LED."

   The orange LED on the faulty FANU is lit.

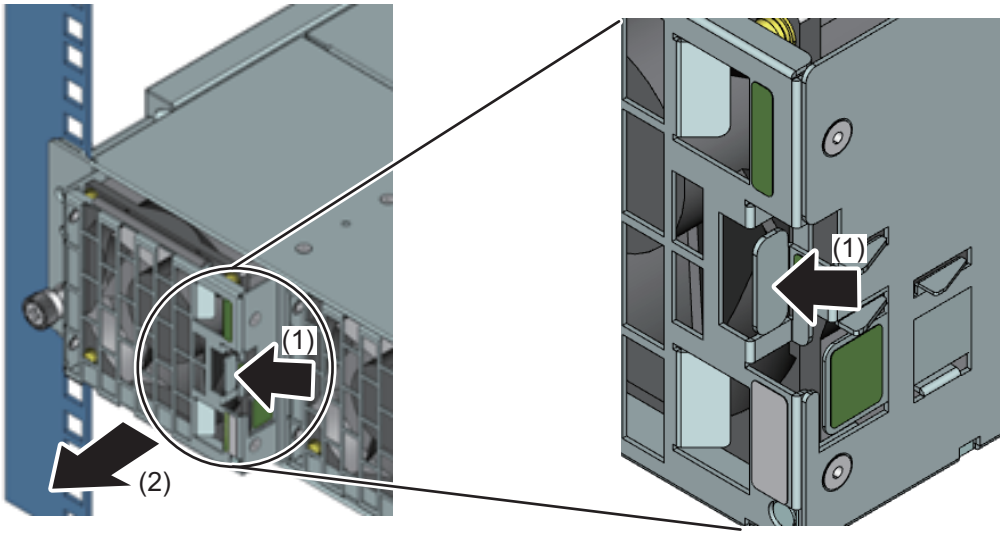
   The LED does not light up when no power is supplied to the device.

7.2.2 Removing the FANU

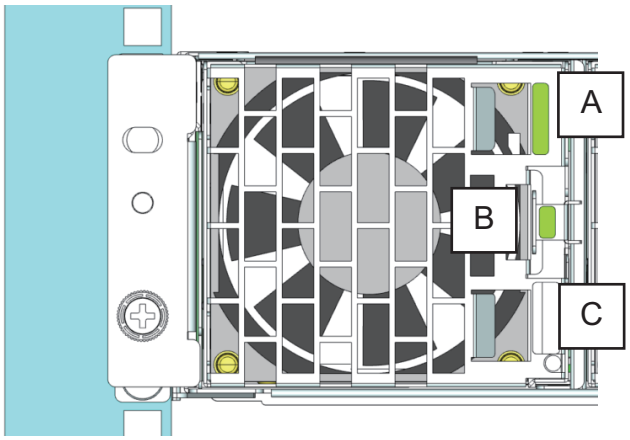
CAUTION

- Be careful when unlocking the FANU lock while the device is running because the FANU may then be ejected with great force.
- Even after you remove the FANU from the FX700 main unit, the fan is still spinning from momentum. Do not insert your fingers, hands, etc. into the unit.

1. **While the first lock is unlocked (1), pull out the FANU in the direction of (2).**

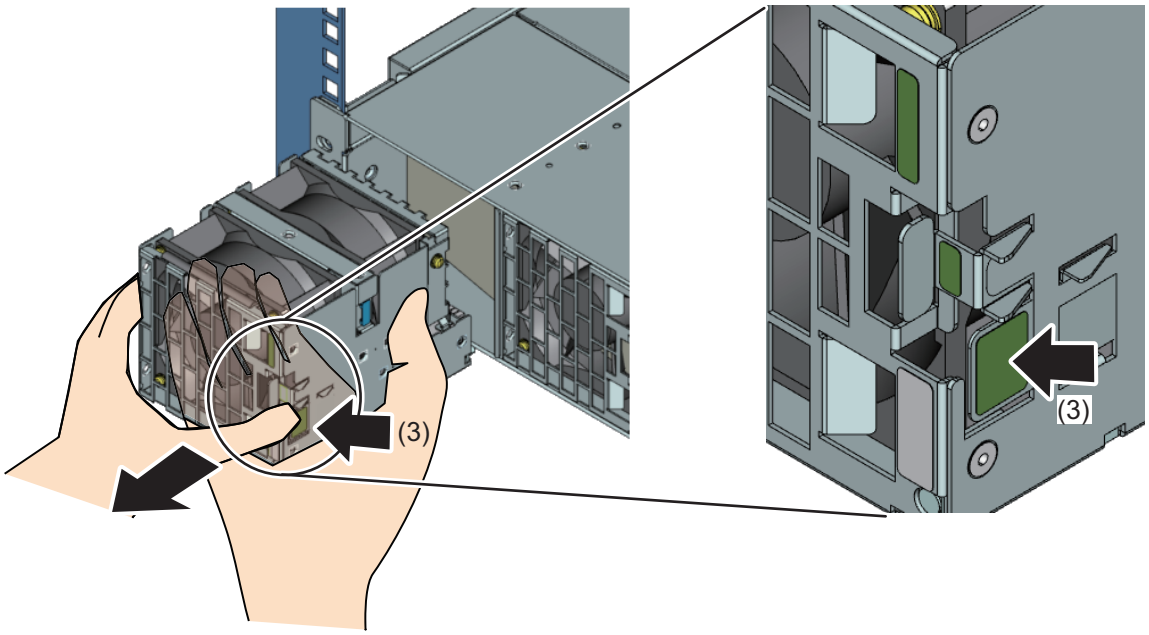


The following shows the places to hold a FANU when removing it.



Example	Thumb	Index Finger
Operation with right hand	C	B
Operation with left hand	B	A

2. **While the second lock for fall prevention is unlocked (3), pull out the FANU.**

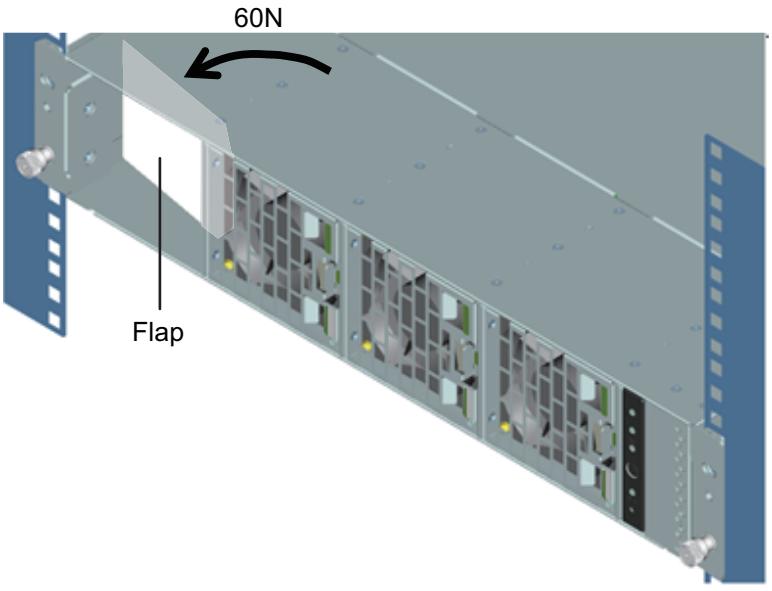


CAUTION

- Be careful when unlocking the FANU lock while the device is running because the FANU may then be ejected with great force.
- Even after you remove the FANU from the FX700 main unit, the fan is still spinning from momentum. Do not insert your fingers, hands, etc. into the unit.

7.2.3 Installing the FANU in the Chassis

The flap is kept firmly closed with a force of 60 N by air blowing out during the operation of the device.

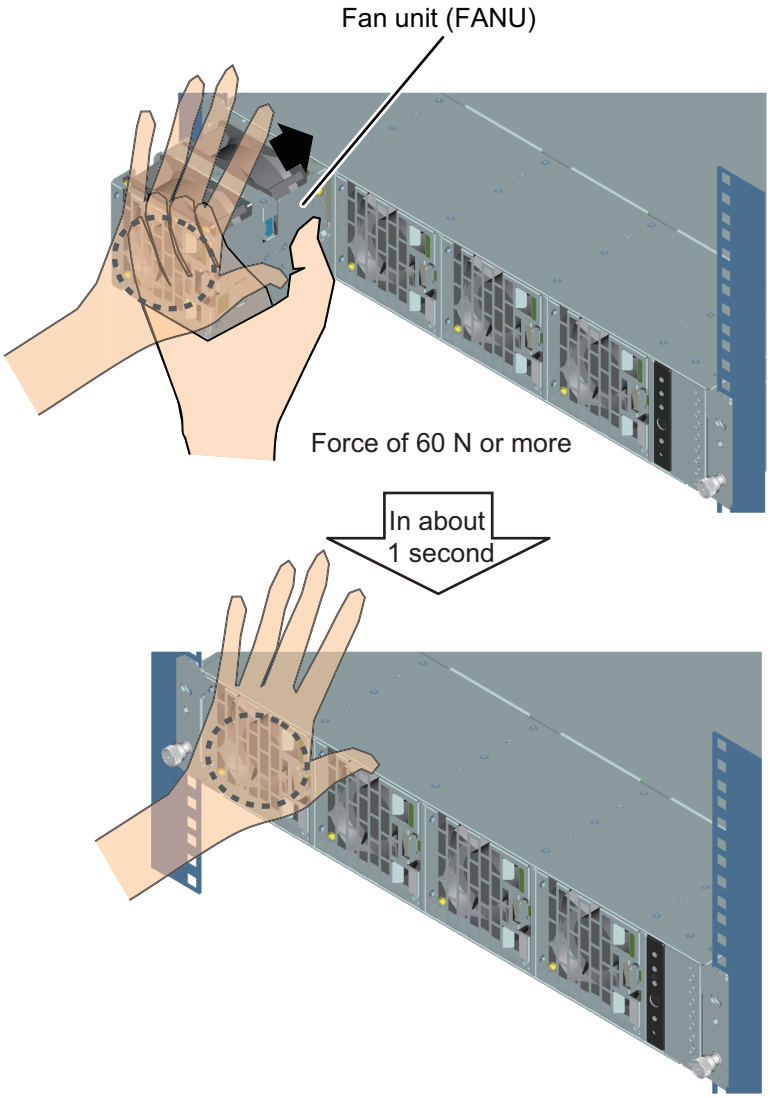


The following is the procedure for installing the FANU in the chassis.

1. **Install the FANU in the chassis.**

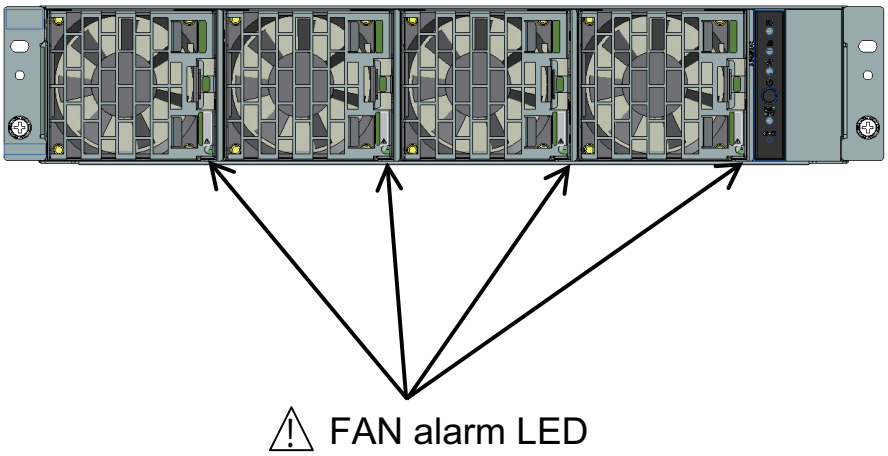
Before mounting the FANU, confirm that its fan has definitely stopped rotating.

From the moment that the FANU starts pushing back the flap as you insert the FANU during warm maintenance, push the FANU forcefully (60 N or more) and quickly (within about 1 second) into the chassis.



2. **Check the status of the FAN alarm LED.**

   - If the FAN alarm LED does not light up for 30 seconds, go to the next step.
   - If the FAN alarm LED lights up before 30 seconds elapse, pull out this FANU immediately, and try again. (See "7.2.2 Removing the FANU.")



3. **Install the front bezel.**

7.2.4 Final Steps

1. **From the Web GUI, clear maintenance mode.**

   See "4.1.2 Clearing Maintenance Mode."

Chapter 8 InfiniBand Card

This chapter describes the handling of InfiniBand cards.

CAUTION

- Do not damage or manipulate the internal cables and devices. Doing so may damage parts or cause fire or electric shock.
- Even after shutdown, the internal devices and components of the FX700 main unit remain hot for a while. After shutting down the FX700 main unit, wait until the hot components are cool before installing or removing an internal option.
- The circuits and soldered parts of internal options are sensitive to static electricity because they are exposed. Before handling an electrostatic-sensitive device (ESD), be sure to first discharge static electricity from your body, such as by touching a grounded object (ground).
- Do not touch the electrical circuits and soldered parts of boards. Be sure to hold circuit boards by the slot bracket or edge.
- Installation or disassembly of a device in a way not shown in this chapter voids the warranty.
- For details, see "Chapter 2 Important Information."

8.1 Basic Information

The blade has two mounted PCIe card slots.
For details, see "Figure 3.1 Riser Module Numbers (Top View of the Blade)."

8.2 Replacing an InfiniBand Card

Work contents: Field replaceable unit (FRU), upgrade and repair unit (URU)
Work time: 20 minutes for hardware
Tools: Phillips PH2/(+) No.2 screwdriver

8.2.1 Preliminary Steps

Perform the following procedure to prepare for InfiniBand card replacement.

1. **Look for the target blade.**

   See "3.1 Using Diagnostic Information."

2. **Shut down that blade.**

   See "3.2 Shutting Down the FX700 Main Unit."

3. **From the Web GUI, configure CMU replacement in maintenance mode.**

   See "4.1.1 Setting Maintenance Mode."

4. **Remove all external cables from the InfiniBand card.**
5. **Remove the blade from the chassis.**

   See "3.9.2 Removing the Blade From the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

6. **Remove the riser module from the blade.**

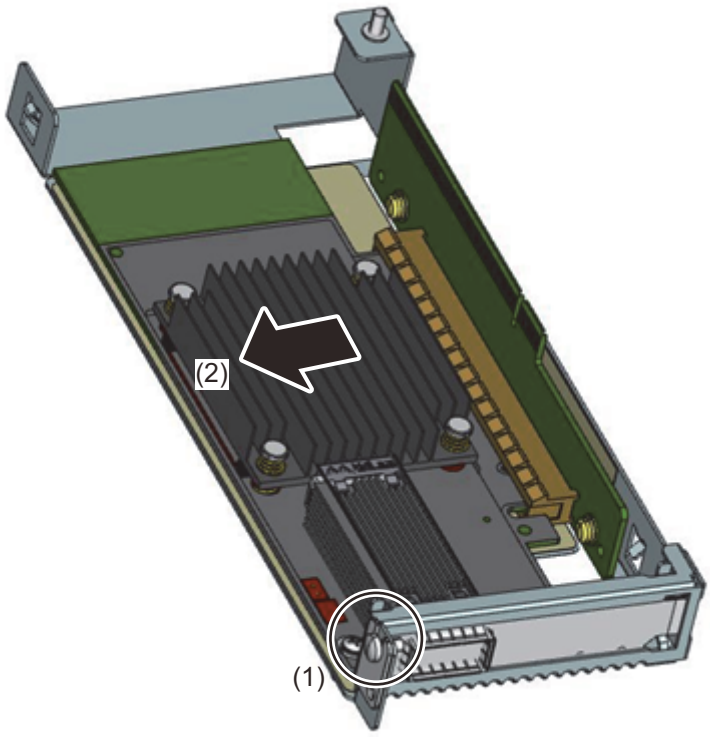
   See "3.22.1 Removing the Riser Module (for PCIE#00)."

8.2.2 Removing an InfiniBand Card

This section describes how to remove an InfiniBand card.

1. **Remove the screw securing the InfiniBand card (1).**

Figure 8.1 Removing an InfiniBand Card



2. **Pull out the InfiniBand card from the riser card connector (2).**

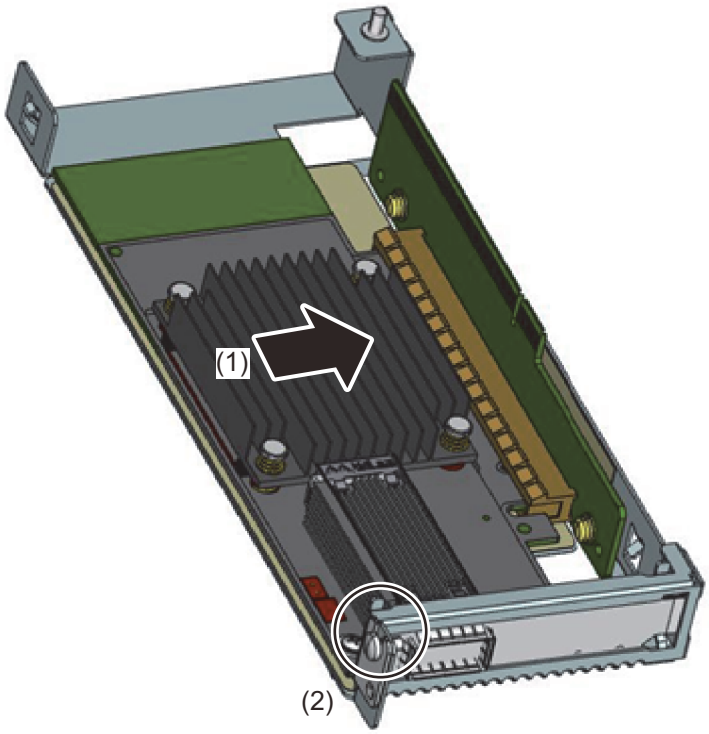
8.2.3 Installing an InfiniBand Card

1. **If a slot cover is installed on the riser card module, remove the slot cover.**

   See "3.22.4 Removing the Slot Cover From the Riser Module."

2. **Insert the InfiniBand card into the riser card connector (1).**

Figure 8.2 Installing an InfiniBand Card



3. **Secure the InfiniBand card with one screw (2).**

8.2.4 Final Steps

Perform the following procedure to put everything back together.

1. **Install the riser module.**

   See "3.22.2 Installing the Riser Module (for PCIE#00)."

2. **Install the blade in the chassis.**

   See "3.9.1 Installing the Blade in the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

3. **Connect all the external cables.**

   See "3.19 Connecting External Cables."

4. **Confirm startup.**

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.

   Specify [Both Node On] in the [Power Control] pulldown menu, and click the [Start Power Control] button.

5. **Check the I/O configuration.**

See "4.6 Checking the I/O Configuration."

6. **Turn off the power.**

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.

   Specify [Both Node Off] in the [Power Control] pulldown menu, and click the [Start Power Control] button.

7. **From the Web GUI, clear maintenance mode.**

   See "4.1.2 Clearing Maintenance Mode."

8.2.5 Updating the InfiniBand Card Firmware

You can check the supported firmware versions, download files, and obtain Readme files from the Fujitsu webpage "FUJITSU Supercomputer PRIMEHPC Documents" (https://www.fujitsu.com/global/products/computing/servers/supercomputer/documents/).
See the Readme files, and check the InfiniBand card firmware version. If necessary, update the firmware.

8.3 Adding an InfiniBand Card

Work contents: Field replaceable unit (FRU), upgrade and repair unit (URU)
Work time: 20 minutes for hardware
Tools: Phillips PH2/(+) No.2 screwdriver

8.3.1 Preliminary Steps

Perform the following procedure to prepare for InfiniBand card addition.

1. **Shut down that blade.**

   See "3.2 Shutting Down the FX700 Main Unit."

2. **From the Web GUI, configure CMU replacement in maintenance mode.**

   See "4.1.1 Setting Maintenance Mode."

3. **Remove all external cables from the blade.**
4. **Remove the blade from the chassis.**

   See "3.9.2 Removing the Blade From the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

5. **Remove the riser module from the blade.**

   See "3.22.1 Removing the Riser Module (for PCIE#00)."

8.3.2 Removing a Slot Cover

See "3.22.4 Removing the Slot Cover From the Riser Module."

8.3.3 Installing an InfiniBand Card

See "8.2.3 Installing an InfiniBand Card."

8.3.4 Final Steps

See "8.2.4 Final Steps."

8.3.5 Updating the InfiniBand Card Firmware

See "8.2.5 Updating the InfiniBand Card Firmware."

Chapter 9 M.2 SSD

This chapter describes the handling of the M.2 SSDs.

⚠CAUTION

- Do not damage or manipulate the internal cables and devices. Doing so may damage parts or cause fire or electric shock.
- Even after shutdown, the internal devices and components of the FX700 main unit remain hot for a while. After shutting down the FX700 main unit, wait until the hot components are cool before installing or removing an internal option.
- The circuits and soldered parts of internal options are sensitive to static electricity because they are exposed. Before handling an electrostatic-sensitive device (ESD), be sure to first discharge static electricity from your body, such as by touching a grounded object (ground).
- Do not touch the electrical circuits and soldered parts of boards. Be sure to hold circuit boards by the slot bracket or edge.
- Installation or disassembly of a device in a way not shown in this chapter voids the warranty.
- For details, see "Chapter 2 Important Information."

9.1 Basic Information

The blade has two mounted M.2 SSD slots.

Figure 9.1 M.2 SSD Mounting Locations (Top View of the Blade)

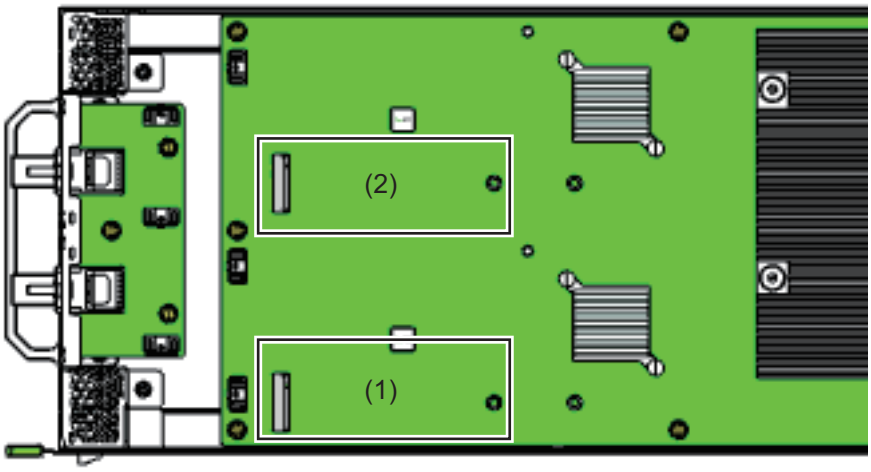


Table 9.1 M.2 SSD Mounting Locations on the CMU

Location	Component
(1)	SSD#00
(2)	SSD#01

9.2 Replacing an M.2 SSD

Work contents: Field replaceable unit (FRU), upgrade and repair unit (URU)
Work time: 20 minutes for hardware
Tools: Phillips PH2/(+) No.2 screwdriver

9.2.1 Preliminary Steps

Perform the following procedure to prepare for M.2 SSD installation.

1. **Look for the target blade.**

   See "3.1 Using Diagnostic Information."

2. **Shut down that blade.**

   See "3.2 Shutting Down the FX700 Main Unit."

3. **From the Web GUI, configure CMU replacement in maintenance mode.**

   See "4.1.1 Setting Maintenance Mode."

4. **Remove all external cables from the blade.**
5. **Remove the blade from the chassis.**

   See "3.9.2 Removing the Blade From the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

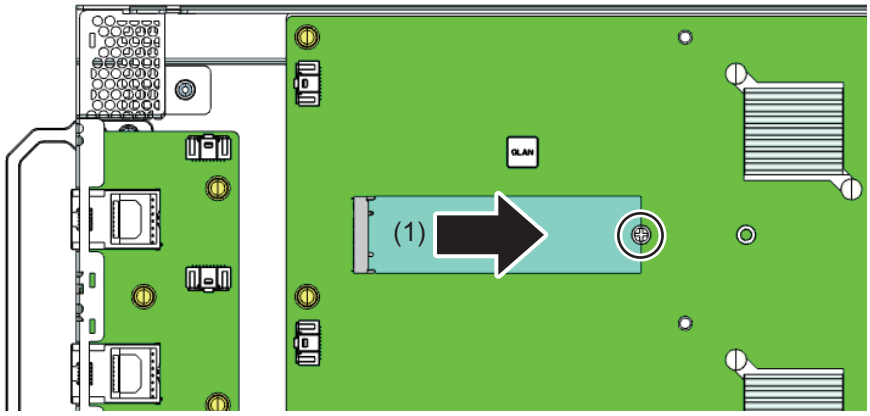
6. **Remove the riser module from the blade.**

   See "3.22 Handling the Riser Module."

9.2.2 Removing the M.2 SSD

1. Remove the screw securing the M.2 SSD, and remove the M.2 SSD (1).

Figure 9.2 Removing the M.2 SSD



9.2.3 Installing the M.2 SSD

Figure 9.3 M.2 SSD

1. With the M.2 SSD slightly tilted and the label facing up, insert the M.2 SSD into the M.2 slot.

Figure 9.4 Installing the M.2 SSD

2. Secure the M.2 SSD to the standoff spacer with one screw.

Figure 9.5 Securing the M.2 SSD

9.2.4 Final Steps

After installing the M.2 SSD, perform the following procedure to put everything back together.

1. Install the riser module.

   See "3.22.2 Installing the Riser Module (for PCIE#00)."

2. Install the blade in the chassis.

   See "3.9.1 Installing the Blade in the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

3. Connect all the external cables.

   See "3.19 Connecting External Cables."

4. Confirm startup.

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.

   Specify [Both Node On] in the [Power Control] pulldown menu, and click the [Start Power Control] button.

5. Check the I/O configuration.

   See "4.6 Checking the I/O Configuration."

6. Turn off the power.

   From [CMU Maintenance] on the [Maintenance] screen of the Web GUI, select the CMU# of the replacement.

   Specify [Both Node Off] in the [Power Control] pulldown menu, and click the [Start Power Control] button.

7. From the Web GUI, clear maintenance mode.

   See "4.1.2 Clearing Maintenance Mode."

8. Install the OS and drivers.

   See "3.17 Installing the OS" and "3.18 Installing the InfiniBand Driver" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

9.3 Adding an M.2 SSD

Work contents: Field replaceable unit (FRU), upgrade and repair unit (URU)
Work time: 20 minutes for hardware
Tools: Phillips PH1/(+) No.1 screwdriver

9.3.1 Preliminary Steps

Perform the following procedure to prepare for M.2 SSD addition.

1. Shut down that blade.

   See "3.2 Shutting Down the FX700 Main Unit."

2. From the Web GUI, configure CMU replacement in maintenance mode.

   See "4.1.1 Setting Maintenance Mode."

3. Remove all external cables from the blade.
4. Remove the blade from the chassis.

   See "3.9.2 Removing the Blade From the Chassis" in the *FUJITSU Supercomputer PRIMEHPC FX700 Operating Manual* (C120-0089EN).

5. Remove the riser module from the blade.

   See "3.22.1 Removing the Riser Module (for PCIE#00)."

9.3.2 Installing the M.2 SSD

See "9.2.3 Installing the M.2 SSD."

9.3.3 Final Steps

See "9.2.4 Final Steps."

Chapter 10 BAREBONE (Barebones Server)

This chapter describes the handling of the BAREBONE (barebones server).

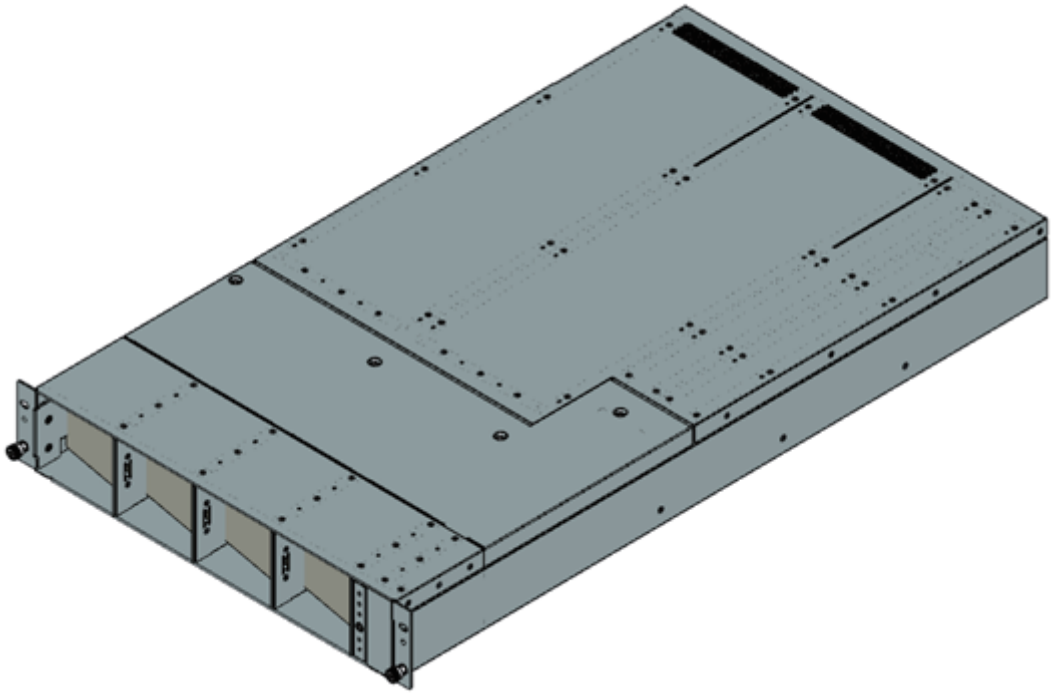
⚠CAUTION

- Do not damage or manipulate the internal cables and devices. Doing so may damage parts or cause fire or electric shock.
- Even after shutdown, the internal devices and components of the FX700 main unit remain hot for a while. After shutting down the FX700 main unit, wait until the hot components are cool before installing or removing an internal option.
- The circuits and soldered parts of internal options are sensitive to static electricity because they are exposed. Before handling an electrostatic-sensitive device (ESD), be sure to first discharge static electricity from your body, such as by touching a grounded object (ground).
- Do not touch the electric circuits of boards and soldered components. Be sure to hold circuit boards by the slot bracket or edge.
- Installation or disassembly of a device in a way not shown in this chapter voids the warranty.
- For details, see "Chapter 2 Important Information."

10.1 Basic Information

The BAREBONE has one mounted BMCU.
For the BMCU mounting location, see "A.1.4 Internal Configuration of the FX700 Main Unit."
The following figure shows the BAREBONE.

Figure 10.1 BAREBONE of the FX700 Main Unit



10.2 Replacing the BAREBONE

If you have done the work in "3.1.3 Identifying a Faulty Part" and identified the BMCU, replace the BAREBONE.
Work contents: Field replaceable unit (FRU)
Work time: 40 minutes for hardware
Tools: Phillips PH2/(+) No.2 screwdriver

10.2.1 Preliminary Steps

1. **Look for the target BAREBONE.**

   See "3.1 Using Diagnostic Information."

2. **Shut down the FX700 main unit.**

   See "3.2 Shutting Down the FX700 Main Unit."

3. **From the Web GUI, configure chassis replacement in maintenance mode.**
4. **Disconnect power cords.**

   See "3.3 Disconnecting Power Cords."

5. **Remove each mounted unit.**

   See "3.5 Removing the Blade."
   See "3.6 Removing the Dummy Blade."
   See "3.7 Removing the PSU."
   See "3.8 Removing the Dummy PSU."
   See "3.9 Removing the FANU."

10.2.2 Removing the BAREBONE

1. **Remove the faulty chassis from the rack.**

   See "3.10 Removing the FX700 Main Unit From the Rack."

2. **Remove the top cover from the faulty chassis.**

   See "3.11 Removing the Top Cover."

10.2.3 Installing the BAREBONE

1. **Install the removed BMCIFU from the faulty chassis in the new chassis.**

   See "Chapter 11 BMCIFU."

2. **Install the removed top cover from the faulty chassis on the new chassis.**

   See "3.12 Installing the Top Cover."

CAUTION

Be sure to install the removed front bezel from the faulty chassis on the new chassis.
For details on how to remove and install the front bezel, see "3.23 Removing the Front Bezel" and "3.24 Installing the Front Bezel."

3. **Install the new chassis in the rack.**

   See "3.13 Installing the FX700 Main Unit in the Rack."

4. **Install each unit in the new chassis.**

   See "3.14 Installing the Blade."
   See "3.15 Installing the Dummy Blade."
   See "3.16 Installing the PSU."
   See "3.17 Installing the Dummy PSU."
   See "3.18 Installing the FANU."

5. **Connect the external cables.**

   See "3.19 Connecting External Cables."

6. **Connect the power cords.**

   See "3.20 Connecting Power Cords."

10.2.4 Final Steps

1. **Update HCP firmware.**

   See "4.2 Updating HCP Firmware."

2. **From the Web GUI, configure chassis replacement in maintenance mode. If maintenance mode is set, go to the next step.**

   See "4.1.1 Setting Maintenance Mode."

3. **Confirm startup.**

   Start the node from the power button on the operation panel.

4. **Check the I/O configuration.**
5. **Turn off the power.**

   Stop all nodes by long-pressing the power button on the operation panel.

6. **Clear maintenance mode.**

Chapter 11 BMCIFU

This chapter describes the handling of the BMCIFU.

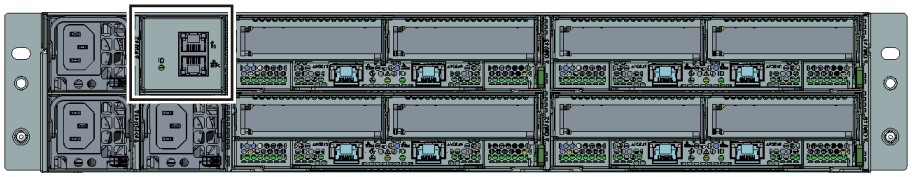
⚠CAUTION

- Do not damage or manipulate the internal cables and devices. Doing so may damage parts or cause fire or electric shock.
- Even after shutdown, the internal devices and components of the FX700 main unit remain hot for a while. After shutting down the FX700 main unit, wait until the hot components are cool before installing or removing an internal option.
- The circuits and soldered parts of internal options are sensitive to static electricity because they are exposed. Before handling an electrostatic-sensitive device (ESD), be sure to first discharge static electricity from your body, such as by touching a grounded object (ground).
- Do not touch the electric circuits of boards and soldered components. Be sure to hold circuit boards by the slot bracket or edge.
- Installation or disassembly of a device in a way not shown in this chapter voids the warranty.
- For details, see "Chapter 2 Important Information."

11.1 Basic Information

The FX700 main unit has one mounted BMCIFU.
Figure 11.1 shows the BMCIFU mounting location.

Figure 11.1 BMCIFU of the FX700 Main Unit



11.2 Replacing the BMCIFU

Work contents: Field replaceable unit (FRU)
Work time: 40 minutes for hardware
Tools: Phillips PH2/(+) No.2 screwdriver

11.2.1 Preliminary Steps

Perform the following procedure to prepare for BMCIFU replacement.

1. **Look for the target BMCIFU.**

   See "3.1 Using Diagnostic Information."

2. **Shut down the FX700 main unit.**

   See "3.2 Shutting Down the FX700 Main Unit."

3. **From the Web GUI, configure chassis replacement in maintenance mode.**
4. **Disconnect power cords.**

   See "3.3 Disconnecting Power Cords."

5. **Remove each mounted unit.**

   See "3.5 Removing the Blade."
   See "3.6 Removing the Dummy Blade."
   See "3.7 Removing the PSU."
   See "3.8 Removing the Dummy PSU."
   See "3.9 Removing the FANU."

6. **Remove the FX700 main unit from the rack.**

   See "3.10 Removing the FX700 Main Unit From the Rack."

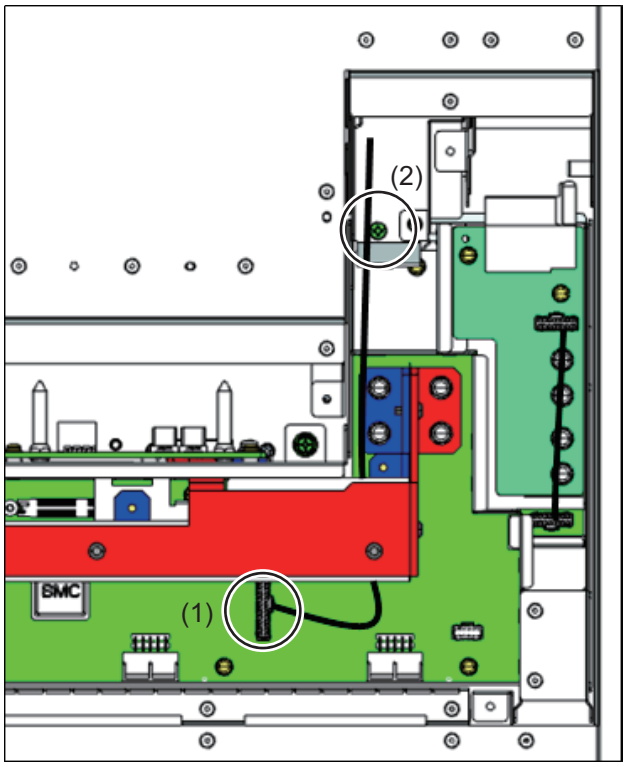
7. **Remove the top cover from the FX700 main unit.**

   See "3.11 Removing the Top Cover."

11.2.2 Removing the BMCIFU

1. **Disconnect the cable connector (1).**

Figure 11.2 Removing the BMCIFU (Top View of the FX700 Main Unit)

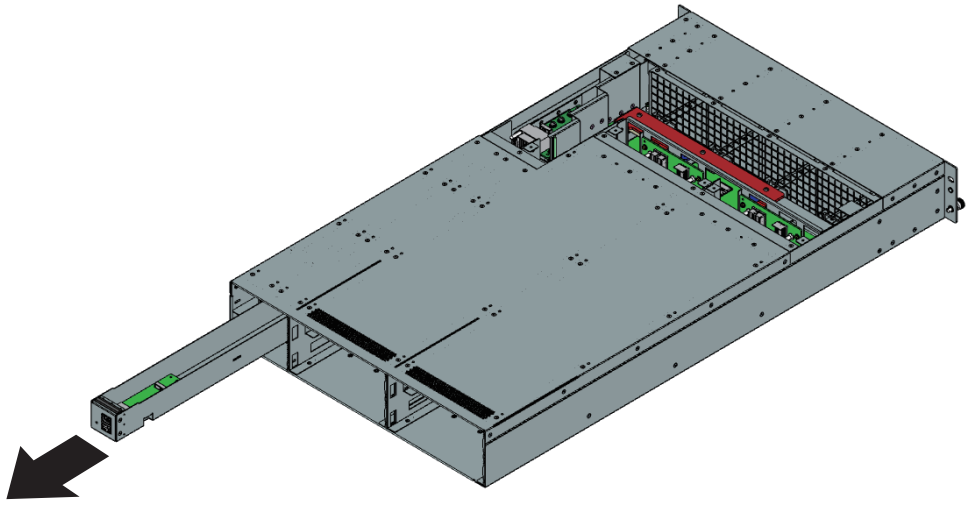


CAUTION

- Be sure to hold the body of the connector when disconnecting the connector. Do not pull any part of the cable to disconnect it.
- Take sufficient care not to damage the parts around the connector when disconnecting the connector.

2. **Remove the BMCIFU fixing screw (2).**
3. **From the rear of the FX700 main unit, pull out the BMCIFU.**

Figure 11.3 Removing the BMCIFU



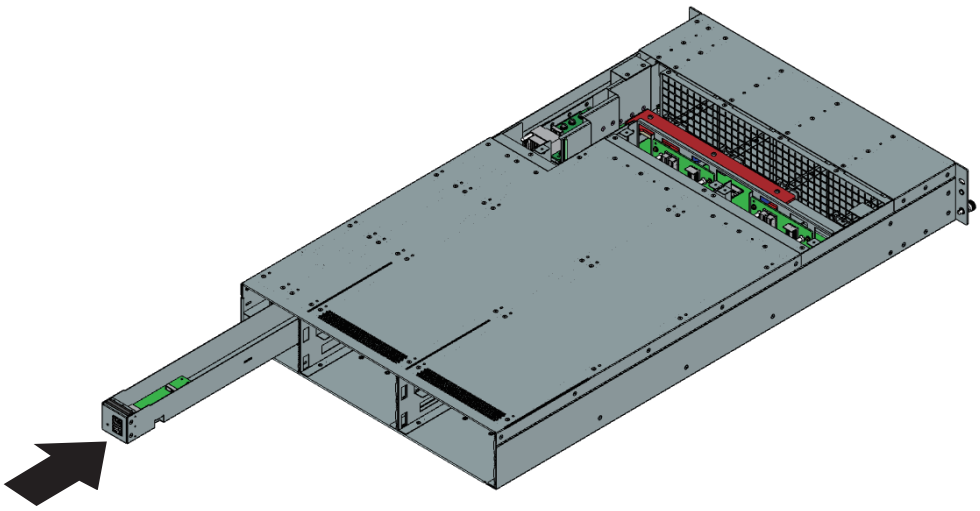
CAUTION

Be careful that no cable gets caught when you pull out the BMCIFU.

11.2.3 Installing the BMCIFU

1. **From the rear of the FX700 main unit, insert the BMCIFU.**

Figure 11.4 Installing the BMCIFU

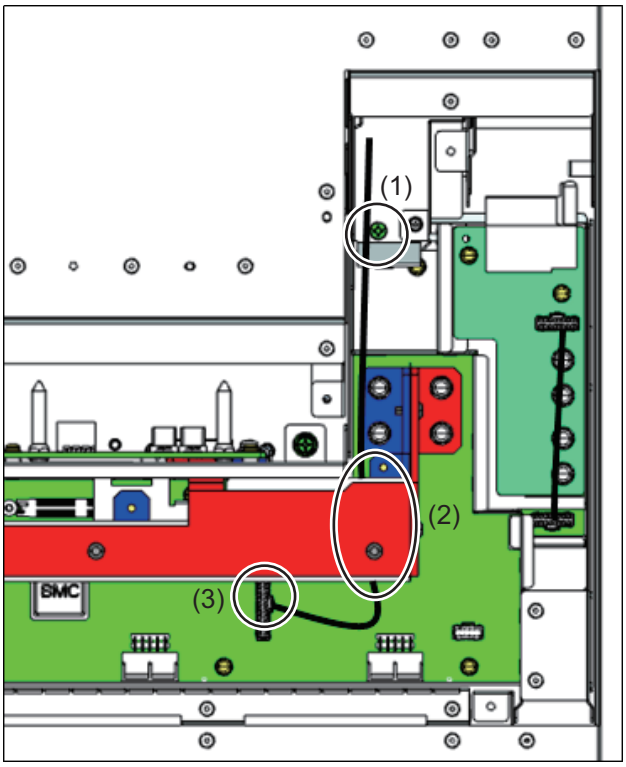


CAUTION

Be careful that the BMCIFU cable does not get caught when you insert the BMCIFU.

2. **Install the BMCIFU fixing screw (1).**

Figure 11.5 Securing the BMCIFU (Top View of the FX700 Main Unit)



3. **Pass the cable under the bus bar (2).**
4. **Connect the cable connector (3).**

CAUTION

Take sufficient care not to damage the parts around the connector when connecting the connector.

11.2.4 Final Steps

After replacing the BMCIFU, perform the following procedure to put everything back together.

1. **Install the top cover on the FX700 main unit.**

   See "3.12 Installing the Top Cover."

2. **Install the FX700 main unit in the rack.**

   See "3.13 Installing the FX700 Main Unit in the Rack."

3. **Install each unit in the chassis.**

   See "3.14 Installing the Blade."
   See "3.15 Installing the Dummy Blade."
   See "3.16 Installing the PSU."
   See "3.17 Installing the Dummy PSU."
   See "3.18 Installing the FANU."

4. **Connect the external cables.**

   See "3.19 Connecting External Cables."

5. **Connect the power cords.**

   See "3.20 Connecting Power Cords."

6. **From the Web GUI, configure chassis replacement in maintenance mode. If maintenance mode is set, go to the next step.**

   See "4.1.1 Setting Maintenance Mode."

7. **Confirm startup.**

   Start the node from the power button on the operation panel.

8. **Check the I/O configuration.**

   See "4.6 Checking the I/O Configuration."

9. **Turn off the power.**

   Stop all nodes by long-pressing the power button on the operation panel.

10. **Clear maintenance mode.**

    See "4.1.2 Clearing Maintenance Mode."

Appendix A External Views of the Device

This appendix shows external views of the device as well as the LEDs and buttons.

A.1 External Views of the Device

A.1.1 Front Configuration of the FX700 Main Unit

This section shows the front of the FX700 main unit.

Figure A.1 Front Configuration of the FX700 Main Unit (With the Front Bezel)

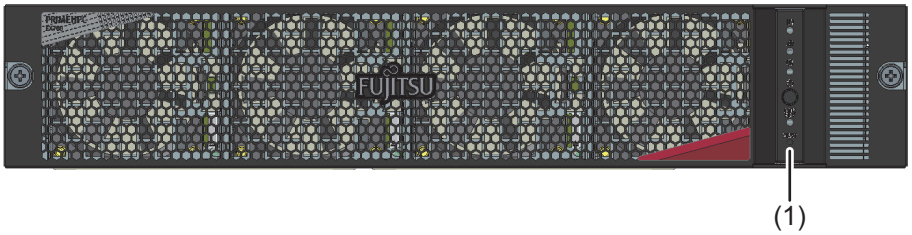
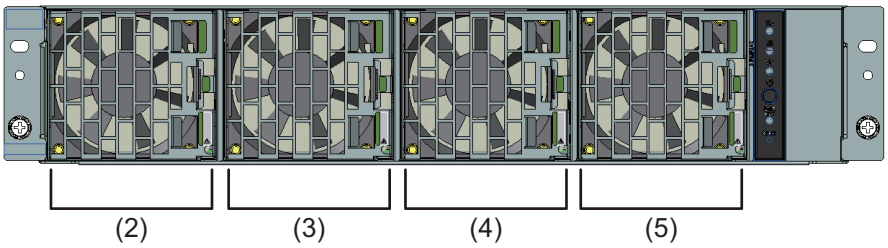


Figure A.2 Front Configuration of the FX700 Main Unit (Without the Front Bezel)

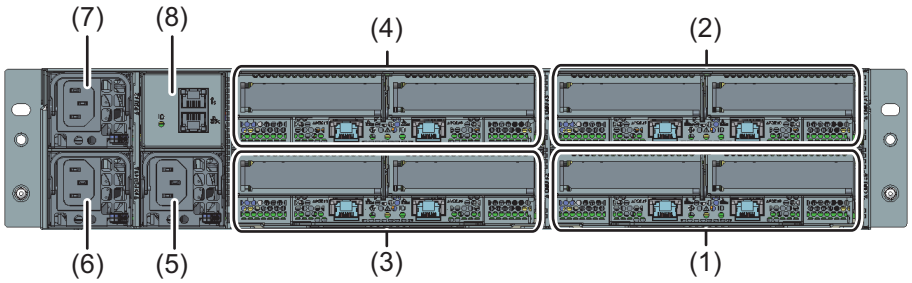


Location	Component
(1)	Front panel
(2)	FANU#00
(3)	FANU#01
(4)	FANU#02
(5)	FANU#03

A.1.2 Rear Configuration of the FX700 Main Unit

This section shows the rear of the FX700 main unit.

Figure A.3 Rear Configuration of the FX700 Main Unit

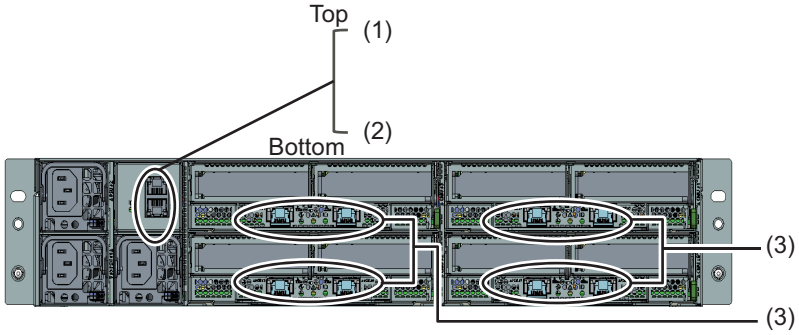


Location	Component
(1)	CMU#00
(2)	CMU#01
(3)	CMU#02
(4)	CMU#03
(5)	PSU#00
(6)	PSU#01
(7)	PSU#02
(8)	BMCIF#00

A.1.3 LANs of the FX700 Main Unit

This section shows the locations of the BMC maintenance port, BMC control port, and node management ports.

Figure A.4 Rear Locations for the LANs of the FX700 Main Unit

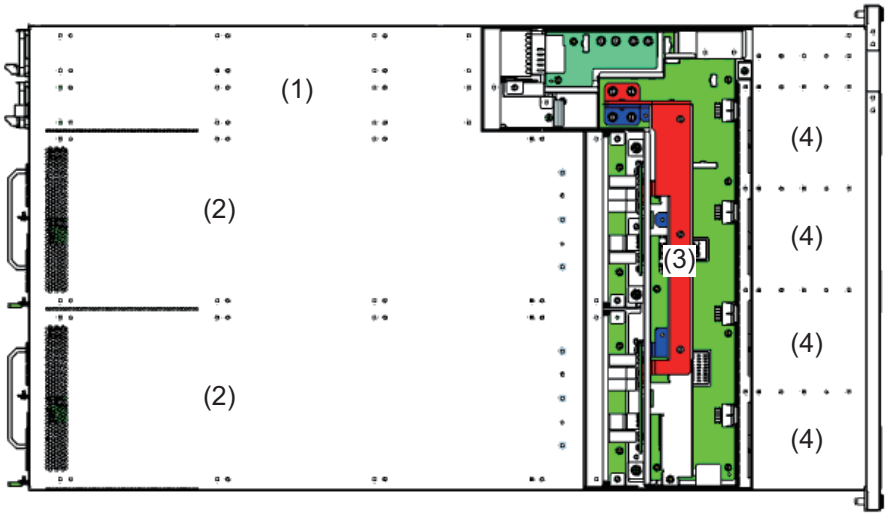


Location	Display	Name	Description
(1)	S	Maintenance port	Used to connect a maintenance work terminal when performing maintenance work
(2)	C	Control port	Connected to the BMC and used for hardware status monitoring, failure notification, and power control
(3)	M	Management port	Used to connect nodes

A.1.4 Internal Configuration of the FX700 Main Unit

This section shows the internal configuration of the FX700 main unit.

Figure A.5 Internal Configuration of the FX700 Main Unit

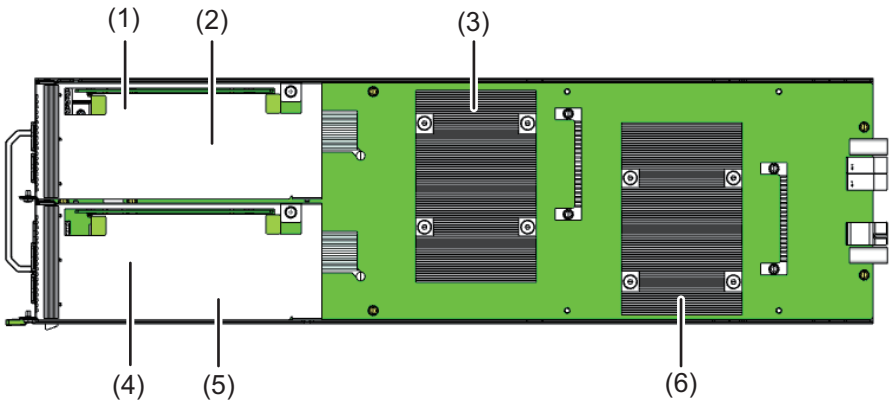


Location	Component
(1)	PSU x 3, BMCIFU (not visible)
(2)	FX700 blade (not visible)
(3)	BMCU
(4)	FANU x 4 (not visible)

A.1.5 Internal Blade Configuration

This section shows the configuration of components inside the blade.

Figure A.6 Internal FX700 Blade Configuration



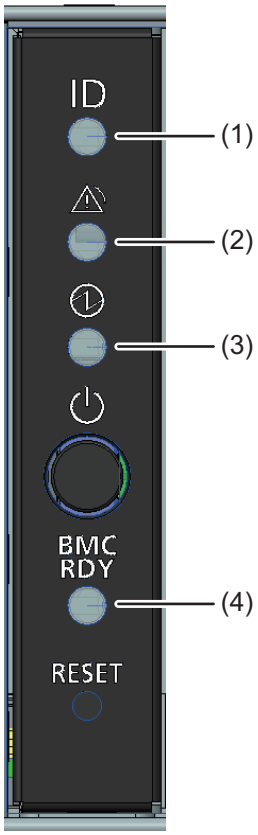
Location	Component
(1)	CPU#01 M.2 SSD (not visible because it is under riser module)
(2)	CPU#01 riser module
(3)	CPU#01 and heat sink
(4)	CPU#00 M.2 SSD (not visible because it is under riser module)
(5)	CPU#00 riser module
(6)	CPU#00 and heat sink

A.2 Indicator Lamps and Controls

A.2.1 Server Front

A.2.1.1 Front Panel LEDs

Figure A.7 Front Panel LEDs



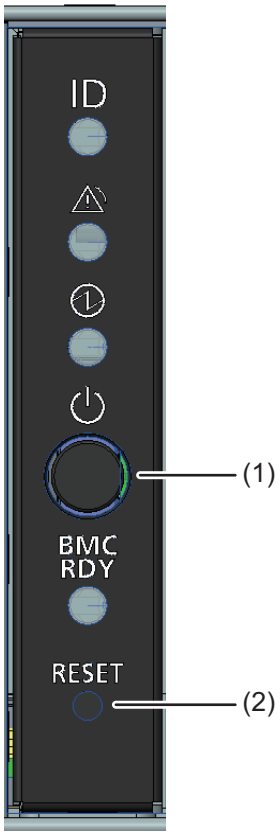
Location	Display	LED	State	Description
(1)		System identification LED (front)	Off	This device not selected as maintenance target
			On, blue	This device selected as maintenance target
			Blinking, blue	Maintenance in progress on this device
(2)		System alarm LED	Off	No failure
			On, orange	This device contains part requiring immediate replacement
			Blinking, orange	This device contains part requiring preventive replacement
(3)		System power LED	Off	All nodes powered off
			On, green	At least 1 node powered on
(4)		BMC ready LED	Off	AC off/BMC stopped
			On, green	BMC initialization completed
			Blinking, green	BMC initializing
			Fast blinking, green	BMC failed

A.2.1.2 Front Panel Buttons

CAUTION

Resetting the BMC during operation may result in abnormal system operation.

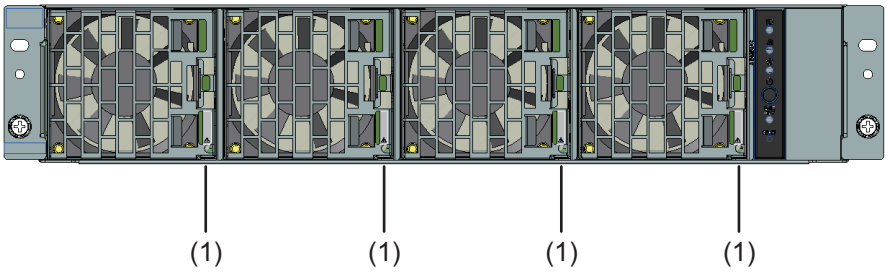
Figure A.8 Front Panel Buttons



Location	Display	Button	Description
(1)		Power on/off button	Press the button to power on or off the server. - Short press the button to power on all nodes (only if all the nodes in the device are off). - Long press the button (4 seconds or longer) to start shutdown of the operating systems on all nodes.
(2)	RESET	BMC reset button	You can reset the BMC by pressing this button. Use the button for maintenance purposes when the BMC is inaccessible.

A.2.1.3 FANU LED

Figure A.9 Locations of the Front LEDs on the FX700 Main Unit

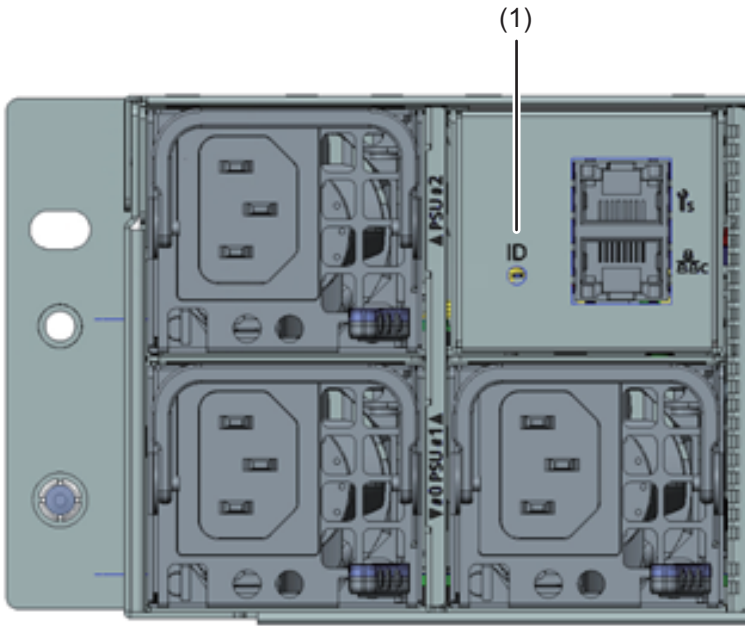


Location	LED	State	Description
(1)	FAN alarm LED	Off	No failure
		On, orange	This FANU failed

A.2.2 Server Rear

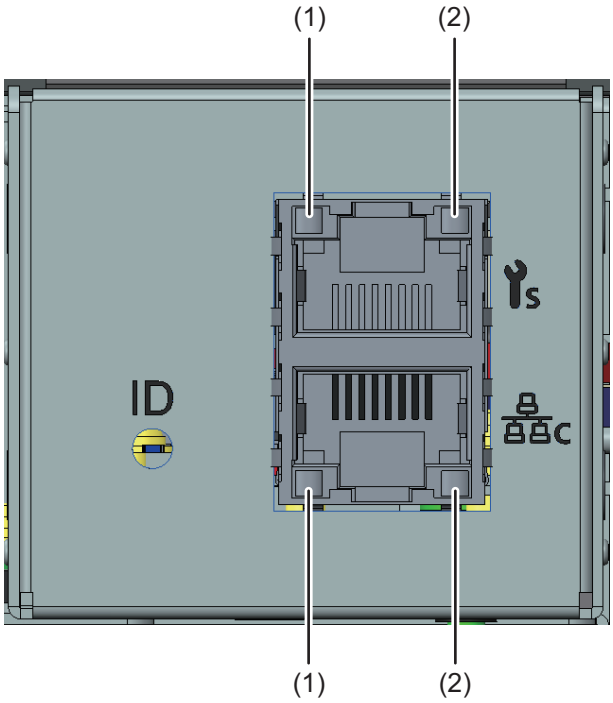
A.2.2.1 BMCIFU LEDs

Figure A.10 BMCIFU LED (ID)



Location	Display	LED	State	Description
(1)	ID	System identification LED (rear)	Off	This device not selected as maintenance target
			On, blue	This device selected as maintenance target
			Blinking, blue	Maintenance in progress on this device

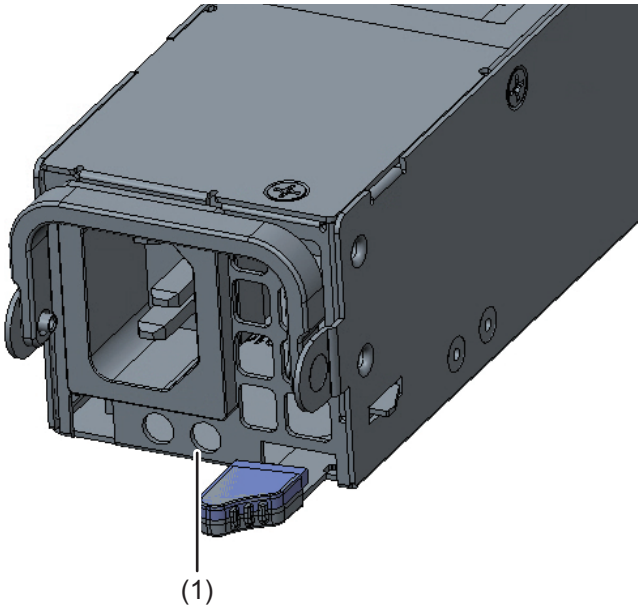
Figure A.11 BMCIFU LAN LEDs



Location	LED	State	Description
(1)	LAN speed LED	On, orange	Indicates data traffic at a transmission speed of 1 Gbit/s.
		On, green	Indicates data traffic at a transmission speed of 100 Mbit/s.
		Off	Indicates data traffic at a transmission speed of 10 Mbit/s.
(2)	LAN link/transmission LED	On, green Off Blinking, green	A LAN connection has been established. The LAN is not connected. LAN data is being transmitted.

A.2.2.2 Hot-Plug PSU LED

Figure A.12 Hot-Plug PSU LED (AC PSU)

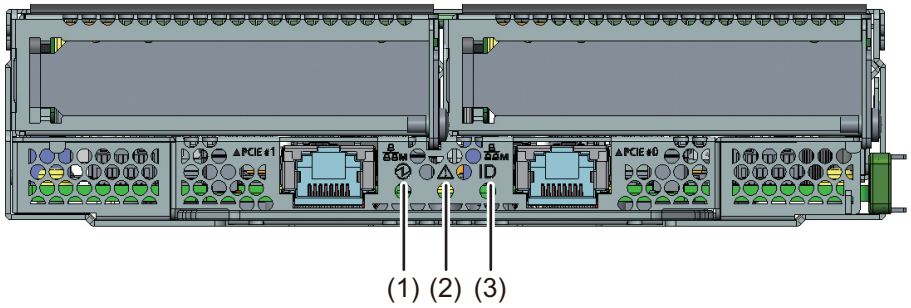


Location	LED	State		Description
		Green LED	Orange LED	
(1)	PSU status LED	Off	Off	No AC output from any PSU connected to device
		Off	On	One of following states: - Output stopped due to PSU failure - No AC connection to other PSUs mounted in device, or no AC input to this PSU
		Blinking	Off	AC input to PSU, and output stopped
		On	Off	PSU currently operating normally

A.2.3 Blade Rear

A.2.3.1 Rear LEDs on the Blade

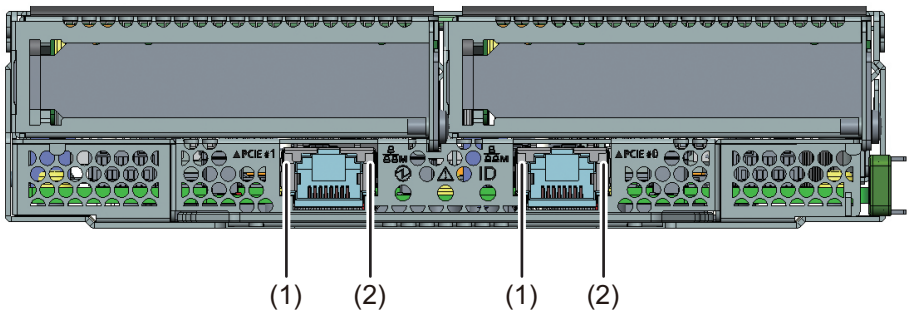
Figure A.13 Rear LEDs on the Blade



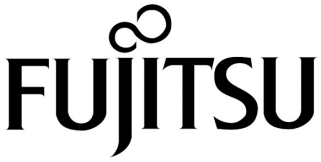
Location	Display	LED	State	Description
(1)		Power LED	Off On, green	This blade node powered off This blade node powered on
(2)		Alarm LED	Off On, orange Blinking, orange	No failure This blade contains part requiring immediate replacement This blade contains part requiring preventive replacement
(3)	ID	Identification LED	Off On, blue	This blade not selected as maintenance target This blade selected as maintenance target

A.2.3.2 Rear LAN LEDs on the Blade

Figure A.14 Rear LAN LEDs on the Blade



Location	LED	State	Description
(1)	LAN speed LED	On, orange	Indicates data traffic at a transmission speed of 1 Gbit/s.
		On, green	Indicates data traffic at a transmission speed of 100 Mbit/s.
		Off	Indicates data traffic at a transmission speed of 10 Mbit/s.
(2)	LAN link/transmission LED	On, green	A LAN connection has been established.
		Off	The LAN is not connected.
		Blinking, green	LAN data is being transmitted.


FUJITSU