

SPARC Enterprise M3000 Server

Installation Guide



ORACLE



SPARC

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Preface

This guide explains how to install and set up the SPARC Enterprise M3000 server from Oracle and Fujitsu. The guide is intended for authorized service personnel and field engineers who perform maintenance work on the system.

The guide assumes that system components have already been unpacked.

References herein to the M3000 server are references to the SPARC Enterprise M3000 server.

This preface includes the following sections:

- [“Audience” on page ix](#)
- [“Related Documentation” on page x](#)
- [“Text Conventions” on page xi](#)
- [“Notes on Safety” on page xi](#)
- [“Syntax of the Command-Line Interface \(CLI\)” on page xii](#)
- [“Documentation Feedback” on page xii](#)

Audience

This guide is written for experienced system administrators with working knowledge of computer networks and advanced knowledge of the Oracle Solaris Operating System (Oracle Solaris OS).

Related Documentation

All documents for your server are available online at the following locations.

Documentation	Link
Sun Oracle software-related manuals (Oracle Solaris OS, and so on)	http://www.oracle.com/documentation
Fujitsu documents	http://www.fujitsu.com/sparcenterprise/manual/
Oracle M-series server documents	http://www.oracle.com/technetwork/documentation/sparc-mseries-servers-252709.html

The following table lists titles of related documents.

Related SPARC Enterprise M3000 Server Documents
<i>SPARC Enterprise M3000 Server Site Planning Guide</i>
<i>SPARC Enterprise Equipment Rack Mounting Guide</i>
<i>SPARC Enterprise M3000 Server Getting Started Guide*</i>
<i>SPARC Enterprise M3000 Server Overview Guide</i>
<i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Important Legal and Safety Information *</i>
<i>SPARC Enterprise M3000 Server Safety and Compliance Guide</i>
<i>SPARC Enterprise M3000 Server Installation Guide</i>
<i>SPARC Enterprise M3000 Server Service Manual</i>
<i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Administration Guide</i>
<i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide</i>
<i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF Reference Manual</i>
<i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Product Notes†</i>
<i>SPARC Enterprise M3000 Server Product Notes</i>
<i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Glossary</i>

* This is a printed document.

† Beginning with the XCP 1100 release.

Text Conventions

This manual uses the following fonts and symbols to express specific types of information.

Font/Symbol	Meaning	Example
AaBbCc123	What you type, when contrasted with on-screen computer output. This font represents the example of command input in the frame.	XSCF> adduser jsmith
AaBbCc123	The names of commands, files, and directories; on-screen computer output. This font represents the example of command output in the frame.	XSCF> showuser -P User Name: jsmith Privileges: useradm auditadm
<i>Italic</i>	Indicates the name of a reference manual, a variable, or user-replaceable text.	See the <i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide</i> .
" "	Indicates names of chapters, sections, items, buttons, or menus.	See Chapter 2, "System Features."

Notes on Safety

Read the following documents thoroughly before using or handling any SPARC Enterprise M3000 server:

- *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Important Legal and Safety Information*
- *SPARC Enterprise M3000 Server Safety and Compliance Guide*

Syntax of the Command-Line Interface (CLI)

The command syntax is as follows:

- A variable that requires input of a value must be put in *Italics*.
- An optional element must be enclosed in [].
- A group of options for an optional keyword must be enclosed in [] and delimited by |.

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Include the title and part number of your document with your feedback:

SPARC Enterprise M3000 Server Installation Guide, part number E28367-01

- For Fujitsu users:

http://www.fujitsu.com/global/contact/computing/sparce_index.html

Installation Overview

This chapter describes the steps required in the processes from installing the server to checking hardware operation.

For details, refer to the section indicated by double quotation marks ("").

TABLE 1-1 Installation Workflow

Installation Stage	Workflow Task
Preliminary checks	Before installing the server, check the environmental requirements, power facility, and installation location. Section 2.2, “Before Installing the Server” on page 2-2
↓	Prepare the items required for installing the server. Section 2.3, “Requirements for Server Installation” on page 2-6
Installation and connection of this server	Check the components and accessories items. Section 3.1, “Checking Components” on page 3-1
↓	Refer to the relevant equipment rack document to install the server in the rack.
↓	Connect the input power cord, UPS cable, and administration console cable. Section 3.3, “Connecting Cables” on page 3-2
Setting confirmation and power-on	Log in to the XSCF Shell, check the host public key of the XSCF, register a user account, set the time, and make other advanced settings. Section 3.4, “Setting and Checking the Required Information for the Server” on page 3-6

TABLE 1-1 Installation Workflow (*Continued*)

Installation Stage	Workflow Task
↓	From the operator panel, power on the server. Confirm the configuration and operation with the dual power feed option. Section 3.5, “Powering On the Server” on page 3-10
↓	Connect additional peripheral devices. Section 3.6, “Connecting Additional Peripheral Devices” on page 3-13
Test environment creation and confirmation of operation	Connect the Gigabit Ethernet port (GbE port) and the user network. Section 4.2, “Connecting to the Network” on page 4-2
↓	Confirm the network connection. Section 4.3, “Verifying the Network Connection” on page 4-3
↓	Start the Oracle Solaris operating system. Section 4.4, “Starting the Oracle Solaris Operating System” on page 4-3
↓	Start Oracle VTS, and confirm hardware operation. Section 4.5, “Verifying Operation by Running Oracle VTS” on page 4-4
→	From this point, begin to do the setup required for system operation. Refer to the <i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Administration Guide</i> .

Preparing to Install the Server

This chapter describes the items that you must prepare for installing the server.

- [Section 2.1, “Safety Precautions” on page 2-1](#)
- [Section 2.2, “Before Installing the Server” on page 2-2](#)
- [Section 2.3, “Requirements for Server Installation” on page 2-6](#)

2.1 Safety Precautions

Observe the following precautions during server installation.

Failure to do so may result in damage to the server or a malfunction.

- Observe the precautions, warnings, and notes on handling shown on the server.
- Do not block any ventilation holes.
- Avoid installing the equipment in a place exposed to direct sunlight or near devices that becomes extremely hot.
- Do not install the server at a location that has a lot of dust or that is exposed to corrosive gases or air with a high salt concentration.
- Do not install the server at a location exposed to frequent vibrations. Install the server on a flat and level surface.
- The grounding resistance must not be greater than 10 Ω . The grounding method varies by the building where you install the server. Make sure that the facility administrator or a qualified electrician verifies the grounding method for the building and performs the grounding work.
- Do not place cables under the equipment. Do not have cables stretched tight. Do not disconnect a power cord from the server while its power is on.

- If the LAN cable must be pulled out and your hands cannot reach the lock part of the connector, use a flathead screwdriver to press the lock part and pull out the cable. Forcibly inserting your fingers may result in damage to the PCI Express (PCIe) card.
- Do not place anything on the server. Do not perform any work directly above it.
- Be careful not to allow the ambient temperature to rise sharply in winter. Such a sudden temperature change would cause condensation to form inside the server. Allow for a sufficient warm-up period prior to operation.
- Avoid installing the equipment near a copy machine, air conditioner, welding machine, or any other devices generating electronic noise.
- Do not install the server on the same circuit as devices, such as equipment elevators, that can cause voltage sags when it is started.
- Take measures to prevent static electricity from being generated at the installation location.
- Confirm that the supply voltage and frequency match the electrical ratings indicated on the server.
- Do not insert anything into any opening in the server. The server contains high-voltage parts. If a metal object or another conductor were inserted into an opening in the equipment, it could cause a short circuit that may result in fire, electric shock, or equipment damage.
- For details on maintenance of the server, contact a certified service engineer.

2.2 Before Installing the Server

Before installing the server, you must know the system configuration and obtain all the prerequisite information for system installation. For the environmental requirements for server installation, refer to the *SPARC Enterprise M3000 Server Site Planning Guide*.

2.2.1 Preparing Power Supply Equipment

This section describes the electrical specifications, power cord specifications, facility power requirements, and grounding for the M3000 server.

To prevent catastrophic failures, the facility power design must ensure that sufficient redundant power is provided to the system. Use a dedicated power distribution panel for all power supply lines supplying power to your server. Electrical work and installation must comply with the applicable local, state, or national electrical codes.

2.2.1.1 Electrical Specifications

[TABLE 2-1](#) lists the M3000 server electrical specifications.

The values in the following table are the maximum power values for the server in its maximum configuration. The actual values vary depending on the system configuration.

TABLE 2-1 Electrical Specifications

Item	Specifications CPU: 2.52 GHz		CPU: 2.75 GHz / CPU: 2.86 GHz	
Input voltage	100 to 120 VAC	200 to 240 VAC	100 to 120 VAC	200 to 240 VAC
Number of power cords	2 (1 cord for each power supply unit)		2 (1 cord for each power supply unit)	
Power cord length	3 m/9.84 ft		3 m/9.84 ft	
Redundancy	1 + 1 redundant configuration		1 + 1 redundant configuration	
Rated current*	4.80 A	2.59 A	5.15 A	2.81 A
Frequency	50/60 Hz		50/60 Hz	
Maximum power consumption	470 W	460 W	505 W	500 W
Apparent power	480 VA	517 VA	515 VA	562 VA
Heat dissipation	1,603.7 BTU/hr (1,692 KJ/hr)	1,569.6 BTU/hr (1,656 KJ/hr)	1,723.1 BTU/hr (1,818 KJ/hr)	1,707.9 BTU/hr (1,800 KJ/hr)
Power factor	0.98	0.89	0.98	0.89

* In a redundant configuration, the rated current per cable is half the value shown in [TABLE 2-1](#).

2.2.1.2 Power Cord Specifications

[TABLE 2-2](#) lists the power cord specifications and connector specifications of the M3000 server.

TABLE 2-2 AC Power Cords and Connector Shape

Destination	Power Cord Type	Connector Shape
Japan	NEMA 5-15 125V15A	IEC 60320 C13
North America	NEMA L6-15 250V15A	
China	GB 2099.1 250V15A	
Hong Kong	BS1363 250V15A	
South Korea	IEC 60320-C14 250V15A	

Note – For the servers that have the plug with lock function, confirm that a 15A overcurrent protection device is available outside the server. If one is not available, prepare an external 15A overcurrent protection that can be achieved by means of no-fuse breakers (NFBs) or fuses. The plug with lock function refers to plugs other than grounding-type ones with two parallel blades, such as the NEMA L6-30, L6-20, L6-15, and L5-15.

2.2.1.3 Facility Power Requirements

For proper redundancy, the facility must have two independent power sources. That is, circuit breakers must be connected either to separate power company utility feeds or to an uninterruptible power system (UPS). For power redundancy, the power cords must not be connected to the same facility power source.

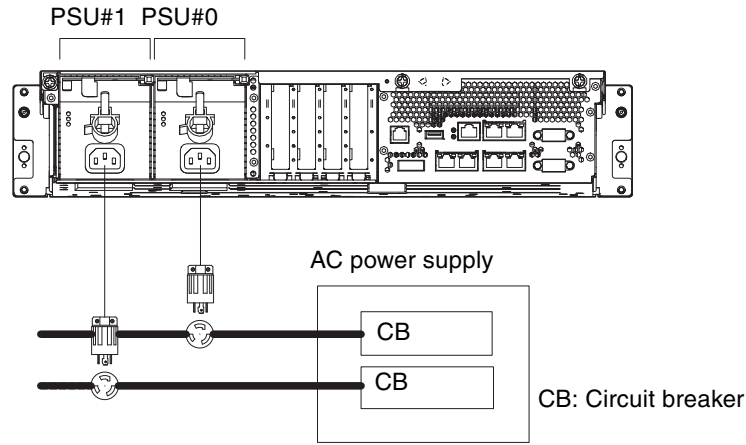
If the computer equipment is subjected to repeated power interruptions and fluctuations, it is susceptible to a component failure rate that is higher than it would be with a stable power source.

The M3000 server has the following basic connection configurations:

- Power cords with a redundant PSU connection ([FIGURE 2-1](#))
- Power cords with a dual-power feed connection ([FIGURE 2-2](#))

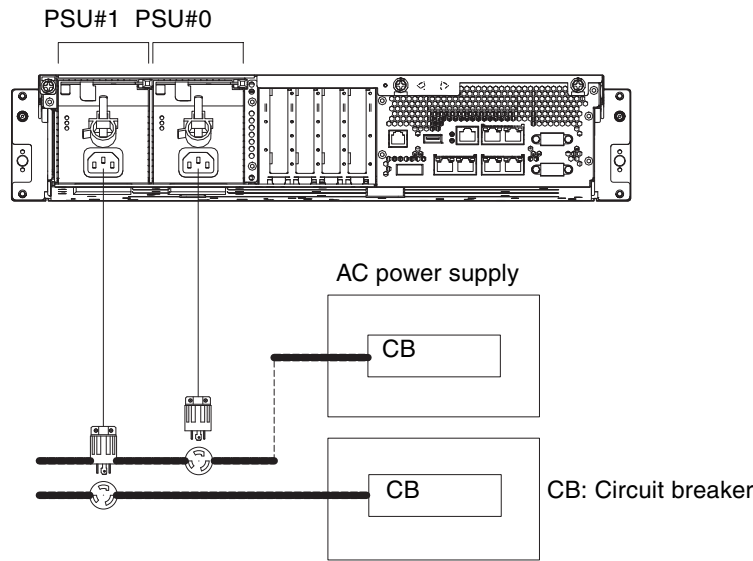
To connect the power cords in a redundant PSU connection to the same AC power supply, connect each power cord independently to its own outlet.

FIGURE 2-1 Power Cords With a Redundant PSU Connection



For a dual-power feed connection, connect each power cord separately to each AC power supply system.

FIGURE 2-2 Power Cords With a Dual-Power Feed Connection



2.2.1.4 Grounding

The M3000 server is shipped with two grounded type (three-wire type) power cords. Always connect the power cords to grounded power outlets. Contact the facilities manager or a qualified electrician to determine what type of power is supplied to your building.

2.3 Requirements for Server Installation

The following items and information are required for installing the server. Prepare them before installation.

- Screwdriver, Phillips No. 2
Used for mounting the server on the rack
- Antistatic wrist strap
Used to prevent static electricity from the human body from damaging the server
- Antistatic mat
- Ethernet cable of category 5 or higher
- Administration console
Obtain one of the following from the customer:
 - ASCII terminal
 - Workstation
 - Terminal server (or a patch panel connected to a terminal server)
 - Personal computer (PC)
- XSCF unit configuration information (IP address, subnet mask, default gateway, etc.)
- Domain configuration information (IP address, subnet mask, default gateway, etc.)
- Circuit tester
Used to check the input power voltage

Installing the Server

This chapter explains how to install the server. It contains the following sections:

- [Section 3.1, “Checking Components” on page 3-1](#)
- [Section 3.2, “Mounting the Server in the Equipment Rack” on page 3-2](#)
- [Section 3.3, “Connecting Cables” on page 3-2](#)
- [Section 3.4, “Setting and Checking the Required Information for the Server” on page 3-6](#)
- [Section 3.5, “Powering On the Server” on page 3-10](#)
- [Section 3.6, “Connecting Additional Peripheral Devices” on page 3-13](#)



Caution – Extend only one server at a time out of the equipment rack to prevent the rack from becoming unbalanced. The stabilizer or a Quake-Resistant Options Kit must be deployed every time a server is pulled out of the rack.

3.1 Checking Components

This section explains how to check the M3000 server components.

1. **Check the delivered items against the list of attachment that came with the server.**

Note – If any optional item, such as additional memory or a PCI Express (PCIe) card, is shipped separately, do not install it until normal operation of the server is confirmed.

2. **Check for a model name and configuration on the product test record.**

If any of the items on the list of attachment or the product test record are missing, incorrect, or damaged, contact your sales representative.

3.2 Mounting the Server in the Equipment Rack

The M3000 server is mounted in the equipment rack for use. For the mounting procedure, refer to the *SPARC Enterprise Equipment Rack Mounting Guide*.

Caution – Do not grab the handles on the front of the server to lift the server. The front handles should be used only to insert the server into or pull it out from the equipment rack. The handles are not designed to support the weight of the server.

3.3 Connecting Cables

This section explains how to connect power cords and the administration console.

3.3.1 Connecting Power Cords

This server is shipped with a grounded type (three-wire type) of power cord. Always connect the power cords into grounded power outlets.



Caution – The server is designed to work with power systems having a grounded neutral conductor. Do not connect the equipment into any other type of power system. Contact the facilities manager or a qualified electrician to determine what type of power is supplied to your building.

1. **An electrician on site must confirm that the input power source satisfies the electrical power requirements.**

For the power requirements, refer to the *SPARC Enterprise M3000 Server Site Planning Guide*.

2. Make sure that each power cord is connected to the power supply unit and secured with a cord clamp.

Do not connect the power source yet.

3. Arrange the layout of all cables outside the server, and secure them at the specified locations to prevent them from being damaged.
4. Make sure that the AC power source circuit breaker is in the OFF position, and then connect the power cords to the AC power source.

For redundancy in case of a power source failure, PSU#0 and PSU#1 must be powered from separate sources. For the form of connection of the power cords, refer to [Section 2.2.1.3, “Facility Power Requirements”](#) on page 2-4.

3.3.2 Connecting a UPS

An uninterruptible power supply (UPS) is used to provide a stable supply of power to the system in the event of a power failure or an extensive power interruption. A UPC port on the rear panel of the server can be connected to the UPC interface on the UPS so that emergency shutdown processing can be executed safely.

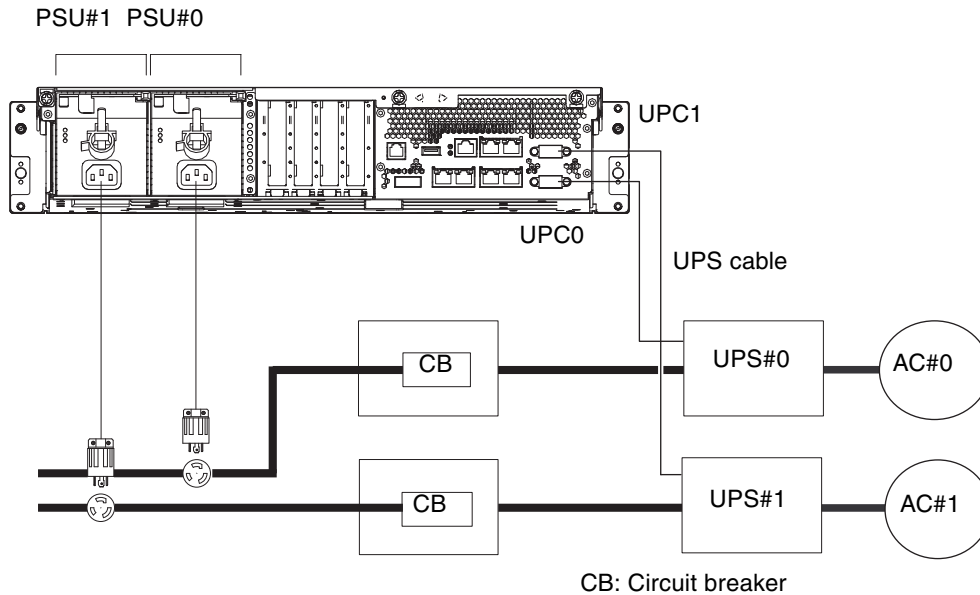
If a UPS is procured, the UPS must have a separate power supply system. Connect PSU#0 and PSU#1 independently to the systems for AC power supply. (See [FIGURE 3-1](#).)

In a connection with 1+1 redundancy, a UPS cable is connected to the UPC 0 port on the server.

In a dual power feed connection, UPS cables are connected to the UPC0 port and UPC1 port.

Note – The UPC1 port cannot be used for a connection with 1+1 redundancy. For the UPC port interface specifications, refer to the *SPARC Enterprise M3000 Server Service Manual*.

FIGURE 3-1 UPS Connections With a Dual-Power Feed Connection



3.3.3 Connecting the Administration Console

The server is set up and statuses are displayed from the XSCF Shell through the serial port on the XSCF unit. To connect the administration console with the serial port, use the RS-232C cable (serial cable) supplied with the server. Also, the XSCF Shell and the domain console (OS console) can be used with a terminal connected to the serial port.

Note – The XSCF board is secured on the motherboard unit (MBU) in the M3000 server. In this document, the XSCF board in the M3000 server is called the XSCF unit.

You can use any of the following devices with a DB-9 serial port as the administration console:

- ASCII terminal
- Workstation
- Terminal server (or a patch panel connected to a terminal server)
- Personal computer

Note – It is possible to connect it to a LAN port via telnet or SSH access. The LAN port has a Class B private address value, but it will not send out a packet by itself until configured.

Note – The modular connector (RCI connector) is not for use with a TNV circuit connection. See Item 1 in [FIGURE 3-2](#).

1. **Confirm that the following settings have been made for software on the administration console.**

TABLE 3-1 Terminal Software Setting Values

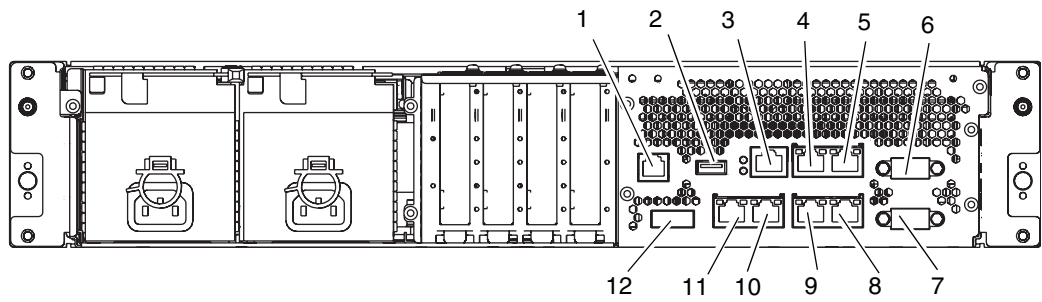
Setting Item	Value
Baud rate	9600
Data length	8 bits
Parity	None
STOP bit	1 bit
Flow control	None
Delay	Other than 0

2. **Prepare the serial cable.**
The serial cable is supplied with the server.
3. **Connect the management console to the serial port on the rear panel (Item 3 in [FIGURE 3-2](#)).**

Note – Be careful not to connect a LAN cable to the serial port.

[FIGURE 3-2](#) shows the locations of the external interface port such as serial port and LAN ports on the rear panel.

FIGURE 3-2 Ports on the Rear Panel



Location Number	Port
1	RCI port*
2	USB port (for XSCF)
3	Serial port
4	LAN1 port (for XSCF)
5	LAN0 port (for XSCF)
6	UPC1 port
7	UPC0 port
8	Gigabit Ethernet (GbE) port 0 (for OS)
9	Gigabit Ethernet (GbE) port 1 (for OS)
10	Gigabit Ethernet (GbE) port 2 (for OS)
11	Gigabit Ethernet (GbE) port 3 (for OS)
12	Serial Attached SCSI (SAS) port

* : For information on whether the RCI function is supported for your server, see the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers Product Notes*.

3.4 Setting and Checking the Required Information for the Server

Before you turn on the power to the server, the XSCF must be in its initial configuration.

Set and check the information required for the server, as described in this section.

Note – Use the administration console that has been connected as described in [Section 3.3.3, “Connecting the Administration Console” on page 3-4](#) for XSCF Shell operations.

- [Section 3.4.1, “Logging in to the XSCF Shell” on page 3-7](#)
- [Section 3.4.2, “Initializing the XSCF Unit” on page 3-9](#)

3.4.1 Logging in to the XSCF Shell

To initialize the XSCF settings, use the XSCF default user account. Until the user's accounts for the user environment are registered, log in with the default user account according to the authentication method. The privileges of the default user are `useradm` and `platadm`.

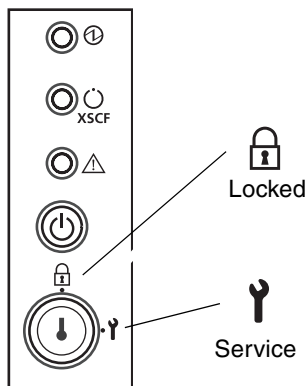
Log in to the XSCF Shell with this procedure:

1. Set the key in the operator panel to the Service position.

The key for the operator panel is supplied with the server.

The Service position is indicated by the wrench symbol. The Locked position is indicated by the lock symbol.

FIGURE 3-3 Mode Switch on the Operator Panel



For details on the operator panel, refer to [Section A.2, “Operator Panel Overview” on page A-5](#).

2. Turn the AC power source circuit breaker to ON.

The server starts the XSCF initialization. That can take 5 minutes.

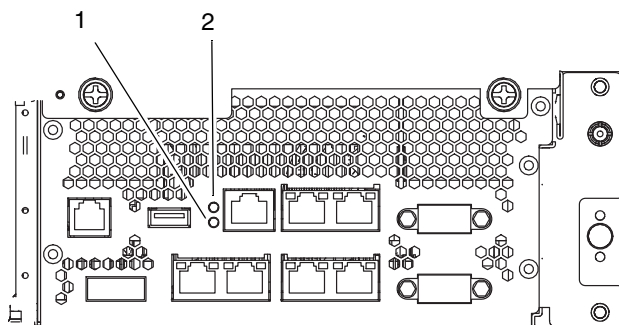
Note – If the power supply is interrupted as a result of disconnecting the power cord or using the circuit breaker on the power distribution panel, wait at least 30 seconds before turning on the server again.

3. Check the LEDs of the XSCF unit.

[FIGURE 3-4](#) shows the locations of the LEDs on the rear panel of the XSCF unit.

The CHECK LED (1) of the XSCF unit is turned on almost immediately after the AC power supply system is turned on. The READY LED (2) of the XSCF unit flashes during XSCF initialization and stays on when the initialization has been completed.

FIGURE 3-4 LEDs on the XSCF Unit



Location Number	LED Name
1	CHECK LED
2	READY LED

4. Watch the administration console for error messages as the XSCF Unit powers on.

For details on troubleshooting during installation work, refer to [Appendix B](#).

5. Confirm that the XSCF STANDBY LED (green) on the operator panel is lit.

6. When the login prompt appears, type `default` as the login name.

```
login: default
```

7. When a message prompting a mode switch operation appears, set the mode switch on the operator panel as described below.

- a. Set the mode switch on the operator panel to Locked, and press the Enter key.

Change the panel mode switch to Locked and press return...

- b. Keep it in that state for at least 5 seconds.

Leave it in that position for at least 5 seconds.

- c. Return the mode switch to Service, and press the Enter key.

Change the panel mode switch to Service, and press return...

Note – If the mode switch operation is not performed within one minute, the login certification will expire.

8. Confirm that the XSCF Shell prompt is displayed on the administration console.

XSCF>

3.4.2 Initializing the XSCF Unit

You must make various settings to use the full XSCF functionality. This section explains how to make the required settings for installation only.

1. **Make only the required settings.**

For details on the setting procedure, refer to the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide*.

The following settings are required:

- Registration of an XSCF user account and password and user privileges (adduser, password, setprivileges)
- User account of a field engineer (FE) (for maintenance)
- Date and time settings (setdate, settimezone)
- Confirmation of the XSCF host public key (showssh)
- SSH/telnet settings (setssh, settelnet)
- Network interface, routing, and DNS-related settings (setnetwork, setroute, setnameserver, etc.) (Note 1)

- Domain to Service Processor Communications Protocol (DSCP) configuration (setdscp) (Note 2)
- Altitude setting (setaltitude) (Note 2)
- Dual power feed option setting (setdualpowerfeed) (Note 3)

Note – (1) To apply the settings, the XSCF unit must be reset with the `applynetwork` and `rebootxscf` commands.

Note – (2) To apply the settings, the XSCF unit must be reset with the `rebootxscf` command.

Note – (3) To apply changes made with the `setdualpowerfeed` command, power to the server must be completely disconnected and then reconnected (all power cords must be disconnected and then reconnected). Wait at least 30 seconds before reconnecting the power cords to the server.

2. **Log in to the XSCF Shell with the user account and password that were set in Step 1.**

For details on how to log in to a user account, refer to the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide*.

3.5 Powering On the Server

This section explains how to power on the server for the first time.

1. **Set the key on the operator panel to the Service position.**
2. **From the XSCF Shell, type:**

```
XSCF> console -d 0
Connect to DomainID 0? [y|n] :y
```

3. **Confirm that the XSCF STANDBY LED (green) on the operator panel is lit.**
4. **Press the Power button on the operator panel to power on the server.**

The server starts and begins a self-diagnosis.

Watch the administration console for error messages during this boot process. For details on troubleshooting during installation, refer to [Appendix B](#).

5. Confirm that the POWER LED (green) on the operator panel is lit.
6. Confirm that “ok” is displayed on the domain console.
7. Check the LED for each component.

For the description of LEDs for each component and its function, refer to the *SPARC Enterprise M3000 Server Service Manual*.

8. Press the Enter, "#" (default escape character), and "." (period) keys.

This key combination switches you from the domain console to the XSCF console.

9. From the XSCF Shell, execute the `fmdump` command or `showlogs` command, and confirm that no errors are found.

For details, refer to [Section B.3.4, “Using the fmdump Command” on page B-8](#) and [Section B.3.2, “Using the showlogs Command” on page B-7](#).

10. Connect the system control network to a LAN port on the XSCF unit with an Ethernet cable.

The system control network has one or more administrative consoles used to monitor the network. This connection will replace the temporary connection made between the administration console and the serial port on the XSCF unit. For an outline of the network connection, refer to [FIGURE 4-1](#).

Note – The LAN ports on the XSCF unit conform to IEEE 802.3i and IEEE 802.3u. However, only the auto negotiation mode can be used for negotiation. The fixed mode cannot be used.

3.5.1 Verifying the Configuration

Verify the hardware configuration by following this procedure on the administration console connected to the system control network.

1. Log in to the server, and access the XSCF Shell.

For details, refer to the *SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User's Guide*.

2. From the XSCF Shell, type the `showhardconf` command.

All the components installed in the server and their statuses are displayed. For details on how to use the `showhardconf` command and an output example, refer to [Section B.3.1, “Using the showhardconf Command” on page B-4](#).

3. Confirm that no asterisk (*) is displayed in front of any FRUs.

4. From the XSCF Shell, type the `showhardconf` command with the `-u` option.
5. Check the number of FRUs mounted on the server against the product test record.

For an output example of `showhardconf -u`, refer to [Section B.3.1.1, “showhardconf -u Command”](#) on page B-6.

6. From the XSCF Shell, type the `console` command with the `-d 0` option.

This switches you from the XSCF console back to the domain console (OS console) and displays the `ok` prompt.

```
XSCF> console -d 0
Connect to DomainID 0?[y|n] :y
ok
```

7. At the `ok` prompt, type the `probe-scsi-all` command.
8. Confirm that the CD-RW/DVD-RW drive unit and hard disk drive installed in the server are recognized.
9. At the `ok` prompt, type the `show-devs` command.
10. Confirm that each installed PCIe card is recognized.
11. Compare the configuration shown by `showhardconf -u`, `probe-scsi-all`, and `show-devs` with the product test record.
12. Press the Enter, "#" (default escape character), and "." (period) keys.

This key combination switches you from the domain console (OS console) back to the XSCF console.

3.5.2 Checking the Dual-Power Feed

For a system using the dual-power feed option, follow the procedure below to confirm that the system can operate even if one power feed is stopped.

1. Confirm that the system is powered on by checking the output of the `showdomainstatus -a` command from the XSCF Shell.
2. Switch off the AC power supply system on the PSU#0 side.
3. Confirm that the POWER LED on the operator panel is lit.
4. From the XSCF Shell, confirm a power failure by executing the `showlogs event` command.

5. Switch on the AC power supply system on the PSU#0 side (which was switched off in Step 2).
6. From the XSCF Shell, confirm a power recovery by executing the `showlogs event` command.
7. Confirm that the AC LED and DC LED on PSU#0 are lit.
8. From the XSCF Shell, confirm a Power Status is On by executing the `showhardconf` command.
9. Switch off the AC power supply system on the PSU#1 side.
10. Confirm that the POWER LED on the operator panel is lit.
11. From the XSCF Shell, confirm a power failure by executing the `showlogs event` command.
12. Switch on the AC power supply system on the PSU#1 side (which was switched off in Step 9).
13. From the XSCF Shell, confirm a power recovery by executing the `showlogs event` command.

3.6 Connecting Additional Peripheral Devices

For details on how to add optional devices, such as additional memory or an additional PCIe card, refer to the *SPARC Enterprise M3000 Server Service Manual*.

To add an additional storage device or other peripheral device, refer to the manual supplied with the device.

Connecting the Domain to the Network

This chapter explains how to establish a network for the M3000 server. It contains the following sections:

- [Section 4.1, “Network Configuration Overview” on page 4-1](#)
- [Section 4.2, “Connecting to the Network” on page 4-2](#)
- [Section 4.3, “Verifying the Network Connection” on page 4-3](#)
- [Section 4.4, “Starting the Oracle Solaris Operating System” on page 4-3](#)
- [Section 4.5, “Verifying Operation by Running Oracle VTS” on page 4-4](#)

4.1 Network Configuration Overview

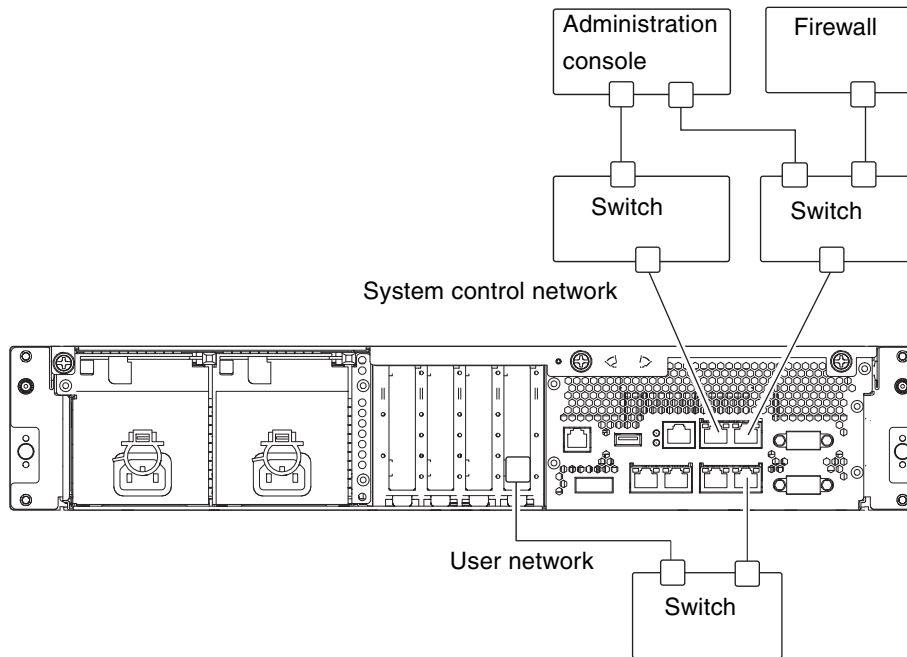
This section provides an overview of the network connections of the M3000 server.

You can connect the M3000 server to the network through one of the four onboard Gigabit Ethernet (GbE) ports.

Alternatively, you can mount a LAN card prepared by the customer in a PCIe slot to connect the server to the network. [FIGURE 4-1](#) shows a user network, which is for user access to the domain.

Note – To isolate the domain from the network, skip the steps in [Section 4.2, “Connecting to the Network” on page 4-2](#) and [Section 4.3, “Verifying the Network Connection” on page 4-3](#).

FIGURE 4-1 Outline of Network Connections



4.2 Connecting to the Network

This section explains how to connect the M3000 server to the network.

The customer must supply the hubs, switches, and cables used for network connections.

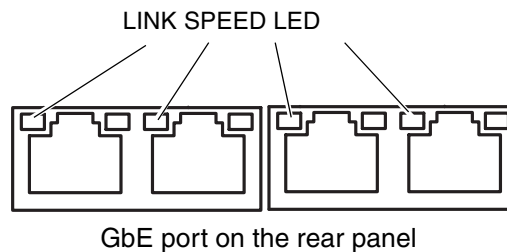
- 1. Connect one end of an Ethernet cable to a GbE port (for the OS) on the rear panel.**
You can connect the Ethernet cable to a GbE port (for the OS) on the rear panel or to the LAN port on a LAN card mounted in a PCIe slot.
- 2. Connect the other end of the Ethernet cable to the customer's network environment.**

4.3 Verifying the Network Connection

This section explains how to verify the user network connection made as described in [Section 4.2, “Connecting to the Network”](#) on page 4-2.

1. Set the mode switch on the operator panel to the Service position.
2. Press the Power button on the operator panel to power on the server.
3. Confirm the status of the LINK SPEED LED (see [FIGURE 4-2](#)) of the connected port as described in [Section 4.2, “Connecting to the Network”](#) on page 4-2.
 - When amber is lit, the communication speed of LAN port is 1G bps.
 - When green is lit, the communication speed of LAN port is 100M bps.
 - When it is off, the communication speed of LAN port is 10M bps.

FIGURE 4-2 Location of LINK SPEED LED



4.4 Starting the Oracle Solaris Operating System

Start the Oracle Solaris Operating System, as described in this section.

When performing this operation after the operations in [Section 4.3, “Verifying the Network Connection”](#) on page 4-3, start from Step 5.

Note – Oracle Solaris OS is pre-installed in the hard disk drive (HDD) of slot#0. When you start Oracle Solaris OS from this HDD, a message appears to configure the Oracle Solaris OS in line with the environment in use.

1. Set the mode switch on the operator panel to the Service position.

2. Press the Power button on the operator panel to power on the server.
3. From the administration console, log in to the XSCF Shell.
4. From the XSCF Shell, type the `console` command.

This switches you from the XSCF console to the domain console (OS console)

```
XSCF> console -d 0
Connect to DomainID 0? [y|n] :y
ok
```

5. At the `ok` prompt of the domain console (OS console), type the `boot` command.

```
ok boot
```

6. Watch the domain console (OS console) for error messages during this boot process.

If an error message is displayed, refer to [Appendix B](#).

7. At the login prompt, log in by using the root privilege.

4.5 Verifying Operation by Running Oracle VTS

Oracle VTS is a diagnosis tool for verifying hardware operations and device connection statuses.

This section explains how to verify operation by using Oracle VTS.

Note – Oracle VTS is installed in the Oracle Solaris OS pre-installed version. For details, see the *Oracle VTS User's Guide*.

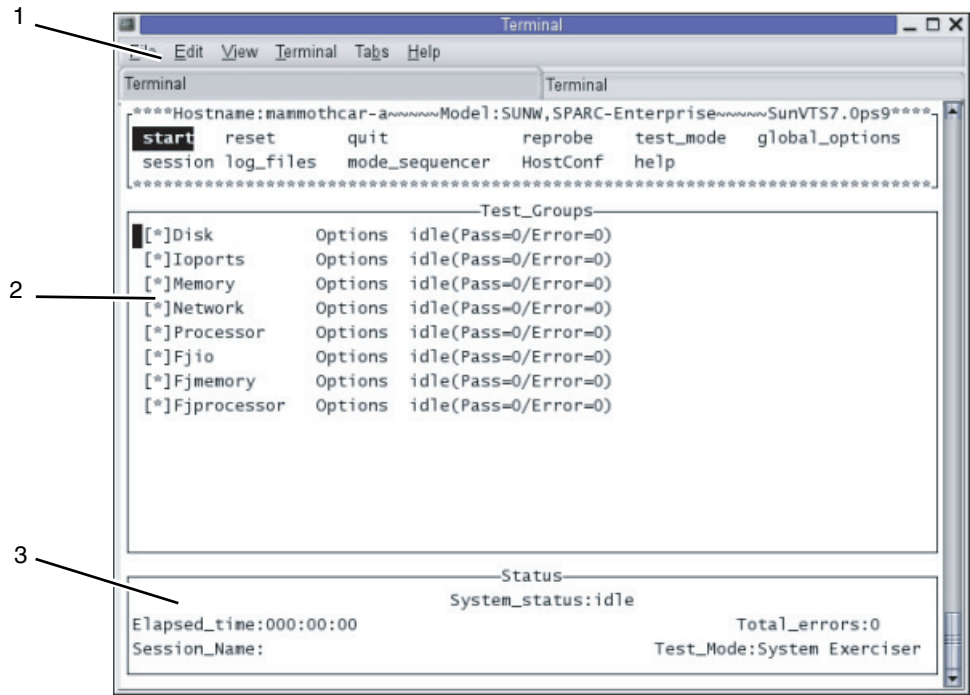
This section explains how to run the Oracle VTS 7.0ps9 software from the TTY user interface.

1. Type the `startsunvts` command to start the Oracle VTS software.

```
# cd /usr/sunvts/bin
# ./startsunvts -t
```

The Oracle VTS TTY main window appears.

FIGURE 4-3 Oracle VTS TTY Main Window



Number	Window Item
1	Control panel
2	Test_Groups panel
3	Status panel

TABLE 4-1 Description of the TTY Keyboard

Key	Description of Operation
Tab key	Shifts the focus to another window. For example, when you press the tab key on the Control panel, the focus (highlighted part) is shifted to the Status panel, which is then framed by asterisks (*).
Arrow keys	Moves between options in the panel.
Return	Displays the menu. This selects and applies an option or command on the menu.

TABLE 4-1 Description of the TTY Keyboard (*Continued*)

Key	Description of Operation
Spacebar	Checks or unchecks the check box of an option in the test panel. [*]: Selected []: Not selected
Backspace key	Deletes text in a text field.
Escape	Discards a pop-up menu or window.
Control-F	Scrolls forward in a scrollable window.
Control-B	Scrolls backward in a scrollable window.
Control-X	Quits the TTY user interface but leaves the Oracle VTS kernel running.
Control-L	Refreshes the TTY window.

2. Select an item to be tested.

- a. Use the tab key to move to the Test_Groups panel.
- b. Use the arrow keys to select the item.

3. Run the test program.

- a. Use the tab key to move to the Control panel.
- b. Use the arrow keys to highlight `start`, and press the Enter key.
- c. In the small window displayed, highlight `start` and press the Enter key again, to start diagnosis.
- d. Confirm that no Error is displayed in the Status panel or Message panel.

4. Stop the test program.

- a. Use the tab key to move to the Control panel.
- b. Use the arrow keys to highlight `stop`, and press the Enter key.

5. Check the test results.

When the test program is stopped, the number of test loops executed and the number of errors are displayed.

Confirm that there is no error.

6. Press the Enter, "#" (default escape character), and "." (period) keys.

This key combination switches you from the domain console to the XSCF console.

7. Type the `fmdump` command or the `showlogs error` command at the XSCF Shell.

8. Confirm that no errors are displayed in the XSCF console after using the `fmddump` or the `showlogs error` commands.

If an error is displayed, see [Section B.3, “Using Status Commands”](#) on page B-3.

9. Type the `poweroff -d 0` command at the XSCF Shell to power off the system.

```
XSCF> poweroff -d 0
```

10. Set the mode switch on the operator panel back to Locked, and hand the key to the system administrator.

Server Views

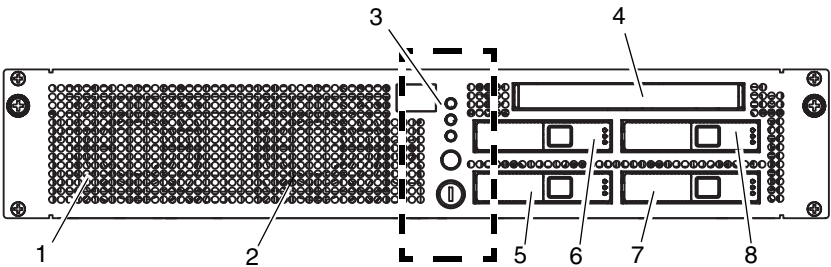
Appendix A provides views of the server. It contains the following sections:

- [Section A.1, “The Server Views” on page A-1](#)
- [Section A.2, “Operator Panel Overview” on page A-5](#)

A.1 The Server Views

[FIGURE A-1](#) shows a front view of the server.

FIGURE A-1 Server (Front View)

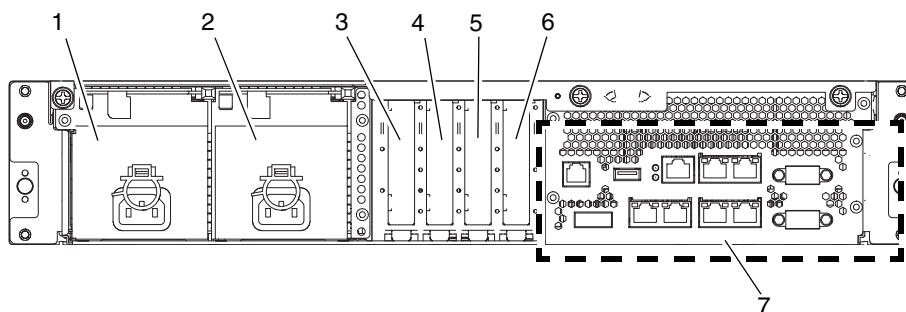


Location Number	Name	Abbreviation
1	Fan unit	FAN_A#0
2	Fan unit	FAN_A#1
3	Operator panel	OPNL

Location Number	Name	Abbreviation
4	CD-RW/DVD-RW drive unit	DVDU
5	Hard disk drive	HDD#0
6	Hard disk drive	HDD#1
7	Hard disk drive	HDD#2
8	Hard disk drive	HDD#3

FIGURE A-2 shows a rear view of the server.

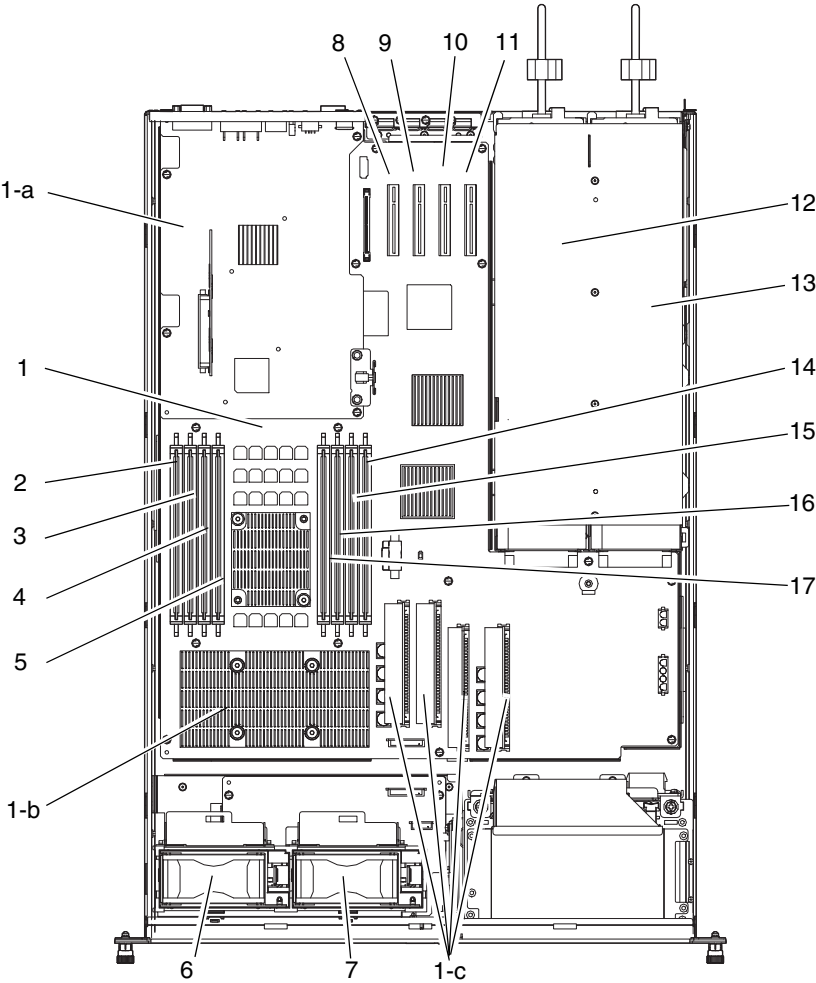
FIGURE A-2 Server (Rear View)



Location Number	Name	Abbreviation
1	Power supply unit	PSU#1
2	Power supply unit	PSU#0
3	PCIe slot	PCI#3
4	PCIe slot	PCI#2
5	PCIe slot	PCI#1
6	PCIe slot	PCI#0
7	Rear panel	

FIGURE A-3 shows a top view of component mounting locations in the server.

FIGURE A-3 Server (Top View)



Location Number	Name	Abbreviation
1	Motherboard unit	**
1-a	XSCF unit *	
1-b	CPU * †	
1-c	DC-DC converter * ‡	

Location Number	Name	Abbreviation
2	Memory slot	DIMM (MEM#00A)
3	Memory slot	DIMM (MEM#00B)
4	Memory slot	DIMM (MEM#01A)
5	Memory slot	DIMM (MEM#01B)
6	Fan unit	FAN_A#0
7	Fan unit	FAN_A#1
8	PCIe slot	PCI#0
9	PCIe slot	PCI#1
10	PCIe slot	PCI#2
11	PCIe slot	PCI#3
12	Power supply unit	PSU#0
13	Power supply unit	PSU#1
14	Memory slot	DIMM (MEM#02A)
15	Memory slot	DIMM (MEM#02B)
16	Memory slot	DIMM (MEM#03A)
17	Memory slot	DIMM (MEM#03B)

* These components are fixed to the motherboard unit.

† There are four types of CPU.

‡ DC-DC converters on MBU_A_5 and MBU_A_6 have different shapes.

** The abbreviation of the motherboard unit varies according to the type of CPU mounted.

[TABLE A-1](#) lists the types of motherboard unit, with corresponding CPU.

TABLE A-1 Motherboard Unit and Corresponding CPU

Motherboard Unit	CPU (Frequency/Cores)
MBU_A	SPARC64 VII (2.52 GHz / 4core)
MBU_A_2	SPARC64 VII (2.52 GHz / 2core)
MBU_A_3	SPARC64 VII (2.75 GHz / 4core)
MBU_A_4	SPARC64 VII (2.75 GHz / 2core)
MBU_A_5	SPARC64 VII+ (2.86 GHz / 4core)
MBU_A_6	SPARC64 VII+ (2.86 GHz / 2core)

A.2 Operator Panel Overview

If no network connection is available, the operator panel is used to start or stop the system. The operator panel has three LED status indicators, a power button, and a mode switch (key switch). The panel is located at the center on the front of the server.

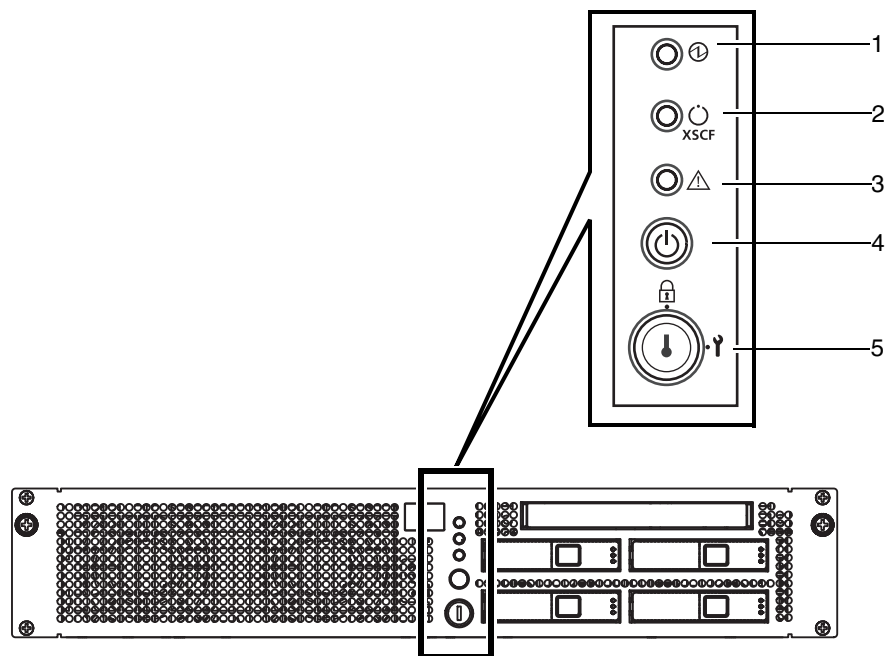
While the system is running, the Power LED and the XSCF STANDBY LED (green) should be on, and the CHECK LED (orange) should not be on. If the CHECK LED is on, search the system logs to determine what is wrong.

The three LED status indicators on the operator panel show the following:

- General system status
- System problem warning
- System fault location

[FIGURE A-4](#) shows the operator panel of the server.




FIGURE A-4 Operator Panel Location



Location Number	Component
1	POWER LED
2	XSCF STANDBY LED
3	CHECK LED
4	Power button
5	Mode switch (key switch)

During startup, the firmware toggles the front panel LEDs on and off to confirm that each one is working correctly. After that, the front panel LEDs operate as described in [TABLE A-2](#).

TABLE A-2 LEDs on the Operator Panel

Icon	Name	Color	Description
	POWER LED	Green	Indicates the server power status. <ul style="list-style-type: none">• On: The power to the server (a domain) is on.• Off: The power to the server is off.• Blinking: The server is powered off.
	XSCF STANDBY LED	Green	Indicates the XSCF unit status. <ul style="list-style-type: none">• On: XSCF unit is functioning normally.• Off: Input power source is off or is just after turned on, and XSCF unit is stopped.• Blinking: System initialization is in progress after power was turned on.
	CHECK LED	Amber	Indicates that the server has detected an error. This is sometimes called a locator. <ul style="list-style-type: none">• On: An error that hinders startup was detected.• Off: Normal, or power is not being supplied.• Blinking: Indicates that the unit is a maintenance target.

The switches on the operator panel include the mode switch for setting the operation mode and the power button for turning on and off the server.

The information about operator panel switches is described in [TABLE A-3](#).

TABLE A-3 Switches on the Operator Panel





Switch	Name	Description of Function
	Mode Switch (key switch)	This switch is used to set the operation mode for the server. Insert the special key that is under the customer's control, to switch between modes.
	 Locked	Normal operation mode <ul style="list-style-type: none">• The system can be powered on with the power button, but it cannot be powered off with the power button.• The key can be pulled out at this key position.
	 Service	Mode for maintenance <ul style="list-style-type: none">• The system can be powered on and off with the power button.• The key cannot be pulled out at this key position.• To stop and maintain the server, set the mode to Service.

TABLE A-3 Switches on the Operator Panel (Continued)

Switch	Name	Description of Function
	Power button	This button is used to turn on or turn off the power to the server (a domain). Power on and power off are controlled by pressing this button in different patterns, as described below.
	Holding down the button for a short time (less than 4 seconds)	Regardless of the mode switch setting, the server is powered on. If set in the XSCF, facility (air conditioners) power-on and warm-up processing is skipped. *
	Holding down the button for a long time in Service mode (4 seconds or longer)	<ul style="list-style-type: none">• If power to the server is on, OS shutdown processing is executed for a domain before the system is powered off.• If the server is being powered on, the power-on processing is cancelled, and the server is powered off.• If the server is being powered off, the operation of the power button is ignored, and the power-off processing is continued.

* In normal operation, the server is powered on only when the computer room environmental conditions satisfy the specified values. Then, the server remains in the reset state until the operating system is booted.

TABLE A-4 Function of the Mode Switch

Function	Mode Switch Locked	Service
Inhibition of Break Signal Reception	Enabled. Reception of the Break signal can be enabled or disabled for each domain using <code>setdomainmode</code> .	Disabled
Power On/Off by power switch	Only Power On is enabled.	Enabled

Troubleshooting

This appendix describes the actions to take for problems that occur during installation of the SPARC Enterprise M3000 server from Oracle and Fujitsu.

- [Section B.1, “Corrective Actions to Common Problems” on page B-1](#)
- [Section B.2, “Emergency Power Off” on page B-2](#)
- [Section B.3, “Using Status Commands” on page B-3](#)

B.1 Corrective Actions to Common Problems

This section describes problems related to installation and their solutions.

TABLE B-1 Common Installation Problems

Problem	Solution
No power to the server	<ul style="list-style-type: none">• Make sure that the power cords are firmly connected to both the power supply units of the server and the input power source.• Make sure that the power supply units of the server are firmly mounted.• If a UPS is connected, make sure that the server and the UPS are properly connected, the UPS is powered on, and the UPS LEDs indicate the normal state.• Make sure that the distribution panel of the equipment rack is powered on.



Caution – Do not make any repairs to the system by yourself. Contact us (Oracle and Fujitsu) and ensure that repair of the system will be performed by a certified service engineer. When the authorized service personnel performs their work on your system, they might need to log into the system with the domainadm privilege for the administration of a specific domain, the platadm privilege for management of the entire system, or the fieldeng privilege for the maintenance work. If our engineer asks you to supply this permission, please take appropriate action to ensure that the engineer can perform the required work.

The method of troubleshooting a problem that occurs on the system varies depending on the problem and the system operating status. The following sections explain troubleshooting by type of method.

TABLE B-2 Types of Troubleshooting Methods

Troubleshooting Method	Description
Check LEDs	The LEDs on the operator panel indicate any system or hardware error detected during initial diagnosis or system operation. Additional LEDs are provided on FRUs, such as a motherboard unit, PSU, and fan unit, so that you can locate faulty components and identify error states. For details on LED types and their error indications, refer to the <i>SPARC Enterprise M3000 Server Service Manual</i> .
Check log files	You can check the system log file (/var/adm/messages) for messages on errors detected by the OS and on any panic that occurred. For details, refer to the <i>SPARC Enterprise M3000 Server Service Manual</i> .
Check using the XSCF Shell	You can use the XSCF Shell to find details of an error state, the device status history, and other status information. For details, refer to Section B.3, “Using Status Commands” on page B-3 , or the <i>SPARC Enterprise M3000/M4000/M5000/M8000/M9000 Servers XSCF User’s Guide</i> .

B.2 Emergency Power Off

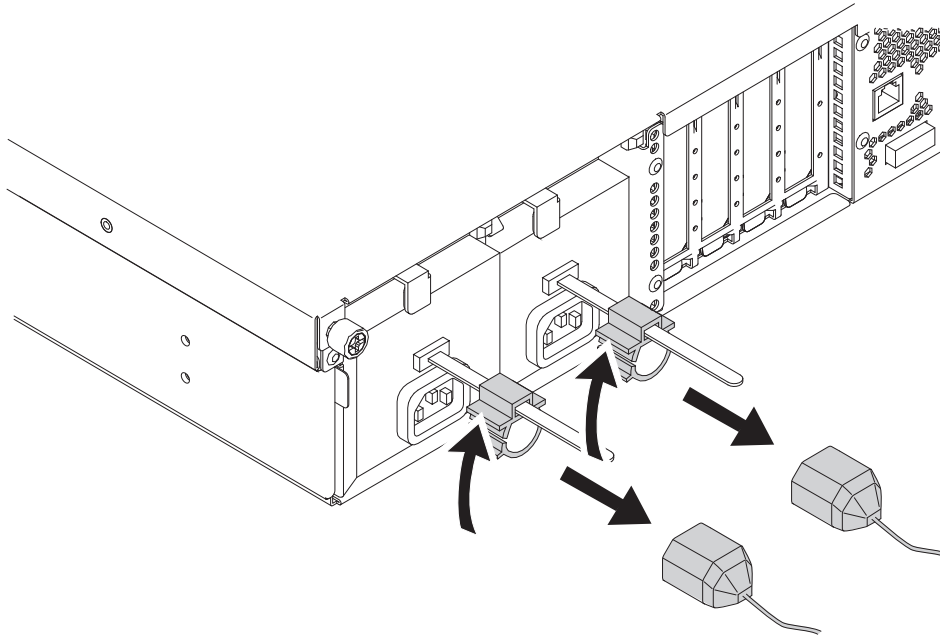
This section explains how to power off in an emergency.



Caution – In an emergency (such as smoke or flames coming from the server), immediately stop using the server and turn off the power supply. Regardless of the type of business, give top priority to fire prevention measures.

1. Press the power switch for more than 4 seconds to turn off the power to the server.
2. Remove the power cord clamp and disconnect the cable (see [FIGURE B-1](#)).

FIGURE B-1 Power-off Method



B.3 Using Status Commands

The following commands are described in detail in this section:

- [“Using the showhardconf Command” on page 4](#)
- [“Using the showlogs Command” on page 7](#)
- [“Using the showstatus Command” on page 7](#)
- [“Using the fmdump Command” on page 8](#)

B.3.1 Using the showhardconf Command

The `showhardconf` command displays the following information about each FRU:

- Current configuration and status
- Number of installed FRUs
- Domain information
- Name properties of PCIe cards

When you use the `showhardconf` command to show the FRU configuration and status information and the domain information, it displays any of the status described below. Beside a unit failed or degraded, placed an asterisk (*) indicating the locating fault.

- Faulted: The component is faulty and is not operating.
- Degraded: The component is operating. However, either an error has been detected or the component is faulty. As a result, the component might be operating with reduced functionality or performance.
- Deconfigured: As a result of another component's faulted or degraded status, the component is not operating. (The component itself is not faulted or degraded.).
- Maintenance: The component is under maintenance. A `deletefru (8)`, `replacefru (8)`, or `addfru (8)` operation is currently underway.
- Normal: Operating normally.

Example of showhardconf command execution

```
XSCF> showhardconf
SPARC Enterprise M3000;
+ Serial:IKK0813023; Operator_Panel_Switch:Locked;
+ Power_Supply_System:Single; SCF-ID:XSCF#0;
+ System_Power:On; System_Phase:Cabinet Power On;
Domain#0 Domain_Status:OpenBoot Execution Completed;

MBU_A Status:Normal; Ver:0501h; Serial:PP104905FD ;
+ FRU-Part-Number:CA07082-D071 A3 /542-0420-01 ;
+ CPU Status:Normal;
+ Freq:2.860 GHz; Type:48;
+ Core:4; Strand:2;
+ Memory_Size:8 GB;
MEM#0A Status:Normal;
+ Code:ce00000000000001M3 93T2950EZA-CE6 4145-473b3c23;
+ Type:1A; Size:1 GB;
MEM#0B Status:Normal;
+ Code:7f7ffe00000000004aEBE10RD4AJFA-5C-E 3020-223b2918;
+ Type:1A; Size:1 GB;
MEM#1A Status:Normal;
+ Code:7f7ffe00000000004aEBE10RD4AJFA-5C-E 3020-223b28af;
+ Type:1A; Size:1 GB;
MEM#1B Status:Normal;
+ Code:7f7ffe00000000004aEBE10RD4AJFA-5C-E 3020-223b28af;
+ Type:1A; Size:1 GB;
MEM#2A Status:Normal;
+ Code:7f7ffe00000000004aEBE10RD4AJFA-5C-E 3020-223b283e;
+ Type:1A; Size:1 GB;
MEM#2B Status:Normal;
+ Code:7f7ffe00000000004aEBE10RD4AJFA-5C-E 3020-223b28ab;
+ Type:1A; Size:1 GB;
MEM#3A Status:Normal;
+ Code:7f7ffe00000000004aEBE10RD4AJFA-5C-E 3020-223b2840;
+ Type:1A; Size:1 GB;
MEM#3B Status:Normal;
+ Code:7f7ffe00000000004aEBE10RD4AJFA-5C-E 3020-223b2830;
+ Type:1A; Size:1 GB;
```

Example of showhardconf output (continued)

```

PCI#0 Name_Property:fibre-channel; Card_Type:Other;
PCI#1 Name_Property:fibre-channel; Card_Type:Other;
PCI#2 Name_Property:pci; Card_Type:Other;
PCI#3 Name_Property:pci; Card_Type:Other;
OPNL Status:Normal; Ver:0101h; Serial:PP082202R8 ;
+ FRU-Part-Number:CA07082-D911 A1 /541-3306-01 ;
PSU#0 Status:Normal; Serial:EA08260208;
+ FRU-Part-Number:CA01022-0720 03C /300-2193-03 ;
+ Power_Status:On;
PSU#1 Status:Normal; Serial:EA08260210;
+ FRU-Part-Number:CA01022-0720 03C /300-2193-03 ;
+ Power_Status:On;
FANBP_B Status:Normal; Ver:0101h; Serial:PP082704TD ;
+ FRU-Part-Number:CA20399-B12X 006AB/541-3304-02 ;
FAN_A#0 Status:Normal;
FAN_A#1 Status:Normal;

```

XSCF>

B.3.1.1 showhardconf -u Command

The showhardconf command with the -u option displays the number of FRUs installed in each unit. You can check the operating frequency of CPU module and the capacity of memory.

Example of showhardconf -u command execution

```

XSCF> showhardconf -u
SPARC Enterprise M3000; Memory_Size:8 GB;
+-----+-----+
|          FRU          | Quantity |
+-----+-----+
| MBU_A                 |         1 |
|      CPU              | ( 1)    |
|      Freq:2.860 GHz;  | ( 1)    |
|      MEM              |         4 |
|      Type:8B; Size:8 GB; | ( 4)    |
| OPNL                  |         1 |
| PSU                   |         2 |
| FANBP_B               |         1 |
|      FAN_A            |         2 |
+-----+-----+
XSCF>

```


B.3.2 Using the showlogs Command

The showlogs command displays the contents of the specified log in order of timestamp. The displayed contents begin from the oldest date. The showlogs command displays the following logs:

- Error log
- Power log
- Event log
- Temperature and humidity record
- Monitoring message log
- Console message log
- Panic message log
- IPL message log

Example of showlogs output

```
XSCF> showlogs error
Date: Jun 17 13:46:31 JST 2008 Code: 60000000-cd01c701-0164010100000000
  Status: Warning                               Occurred: Jun 17 13:46:31.158 JST 2008
  FRU: /OPNL,/FANBP_B
  Msg: TWI access error
Date: Jun 17 13:41:46 JST 2008 Code: 80002080-7801c201-0130000000000000
  Status: Alarm                               Occurred: Jun 17 13:41:44.861 JST 2008
  FRU: /MBU_A,*
  Msg: Board control error (MBC link error)
Date: Jun 17 11:05:32 JST 2008 Code: 80000000-c3ff0000-0173000600000000
  Status: Alarm                               Occurred: Jun 17 11:05:32.522 JST 2008
  FRU: /PSU#1
  Msg: PSU shortage
XSCF>
```

B.3.3 Using the showstatus Command

The showstatus command displays information concerning a faulty or degraded FRU and the FRU that is one layer above the faulty or degraded FRU in the server. The displayed FRU information includes an asterisk (*), which indicates the location of the problem, and any of the following states after "Status:":

- Normal: The component is operating normally.
- Faulted: The component is faulty and is not operating.

- Degraded: The component is operating. However, either an error has been detected or the component is faulty. As a result, the component might be operating with reduced functionality or performance.
- Deconfigured: As a result of another component's faulted or degraded status, the component is not operating. (The component itself is not faulted or degraded.)
- Maintenance: The component is under maintenance. A `deletefru (8)`, `replacefru (8)`, or `addfru (8)` operation is currently underway.

Example of `showstatus` output

```
XSCF> showstatus
      FANBP_B Status:Normal;
*      FAN_A#0 Status:Faulted;
XSCF>
```

B.3.4 Using the `fmdump` Command

The `fmdump` command displays the contents of any log files managed by the module called Fault Manager.

This example assumes there is only one fault.

```
# fmdump
TIME UUID SUNW-MSG-ID
Nov 02 10:04:15.4911 0ee65618-2218-4997-c0dc-b5c410ed8ec2 SUN4-8000-0Y
```

B.3.4.1 `fmdump -V` Command

You can obtain information in more detail with the `-V` option, as shown in the following example.

```
# fmdump -V -u 0ee65618-2218-4997-c0dc-b5c410ed8ec2
TIME                UUID                SUNW-MSG-ID
Nov 02 10:04:15.4911 0ee65618-2218-4997-c0dc-b5c410ed8ec2 SUN4-8000-0Y
100% fault.io.fire.asic
FRU: hc://product-id=SUNW,A70/motherboard=0
rsrc: hc:///motherboard=0/hostbridge=0/pciexrc=0
```

At least three lines of new output are delivered by the `-V` option:

- The first line is a summary of the information that you have seen before in the console message, including the timestamp, UUID, and message ID.

- The second line is a declaration of the certainty of the diagnosis. In this example, there is a 100 percent probability that the failure is in the indicated ASIC. As another example, if the diagnosis were to involve two components, you would see two lines here with 50% on each line.
- The "FRU" line declares the part that must be replaced to return the server to a fully operational state.
- The "rsrc" line identifies the component taken out of service as a result of this fault.

B.3.4.2 fmdump -e Command

To obtain information on the error that caused a failure, use the `-e` option as shown in the following example.

```
# fmdump -e
TIME                CLASS
Nov 02 10:04:14.3008 ereport.io.fire.jbc.mb_per
```


DC Power Supply Model

This appendix describes the requirements specific to the DC power supply model.

Contact your sales representative for the DC power supply model.

To use the DC power supply model, please make sure to read this information.

- [Section C.1, “Preparing Power Supply Equipment” on page C-1](#)

This is equivalent to [Section 2.2.1, “Preparing Power Supply Equipment” on page 2-2](#). When using the DC power supply model, refer to the content described in this appendix.

- [Section C.2, “The Server Views” on page C-6](#)

This is equivalent to [Section A.1, “The Server Views” on page A-1](#). When using the DC power supply model, refer to the content described in this appendix.

- [Section C.3, “Showhardconf Command” on page C-7](#)

This is equivalent to [Section B.3.1, “Using the showhardconf Command” on page B-4](#). When using the DC power supply model, refer to the content described in this appendix.

Note – The content not mentioned in this appendix is common to the AC power supply model and the DC power supply model. Refer to the description in each chapter.

C.1 Preparing Power Supply Equipment

This section describes the electrical specifications, power cord specifications, facility power requirements, and grounding of the DC power supply model.

Note – This is equivalent to [Section 2.2.1, “Preparing Power Supply Equipment” on page 2-2](#). When using the DC power supply model, refer to the content described in this appendix.

Note – The DC power supply model must be installed in a restricted access location. The restricted access location is an area intended for qualified or trained personnel only, access to which is controlled by a locking mechanism. For example, a key or an access card system.

C.1.1 Electrical Specifications

The values in the following table are the maximum power values for the server in its maximum configuration. The actual values vary depending on the system configuration.

TABLE C-1 Electrical Specifications

Item	Specifications	
	CPU: 2.75 GHz / CPU: 2.86 GHz	
Input voltage	-48 Vdc	-60Vdc
Number of power cords	2 (1 cord for each power supply unit)	
Power cord length	5 m/16.4 ft	
Redundancy	1 + 1 redundant configuration	
Rated current*	10.52 A	8.50 A
Maximum power consumption	505W	510 W
Heat dissipation	1,723.1 BTU/hr (1,818 KJ/hr)	1,740.2 BTU/hr (1,836 KJ/hr)

* In a redundant configuration, the rated current per cable is half the value shown in [TABLE C-1](#).

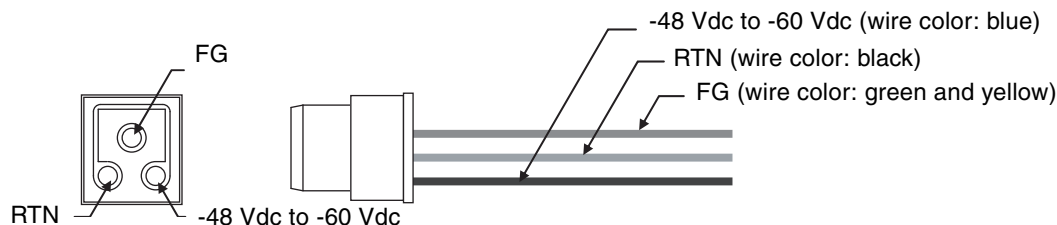
C.1.2 Power Cord Specifications

[TABLE C-2](#) lists the power cord specifications of the DC power supply model.

TABLE C-2 DC Power Cord Specifications

Item	Specification
Connector	294-0085-00100A of ELCON
Cable structure	Three AWG 14 wires
Cable length	5 m

FIGURE C-1 View of DC Power Cords



The DC power cord has a connector only for the server end. Therefore, a terminal matching the DC power supply equipment will need to be attached to the DC power supply end of the cord.

C.1.3 Facility Power Requirements

The power supply that can be used with the M3000 server is restricted to DC power supply equipment that is separate from the AC power, or DC power supply equipment that has double or reinforced insulation for high, dangerous voltages. Always mount overcurrent protective devices between the DC power supply equipment and the M3000 server. One overcurrent protective device is required for each power supply line. The overcurrent protective devices must comply with the following specifications:

- Current rating: 30 A
- Voltage rating: at least 65 Vdc
- Operation type: Immediate shutdown type (however, overcurrent protective devices should not operate against 1 ms rush currents with a peak current of 100 A)
- Number of poles: 2 (-48 Vdc to -60 Vdc line and RTN line)

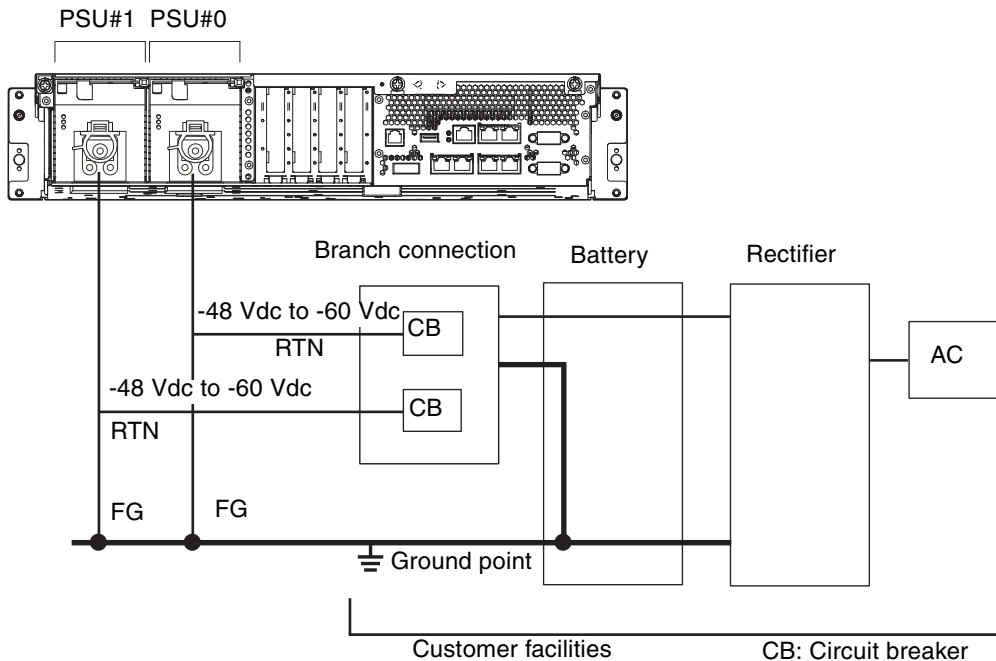
Note – Overcurrent protection devices must meet applicable national and local electrical safety codes and be approved for the intended application.

The DC power supply model of the M3000 server has the following basic connection configurations:

- Power cords with a redundant PSU connection ([FIGURE C-2](#))
- Power cords with a dual-power feed connection ([FIGURE C-3](#))

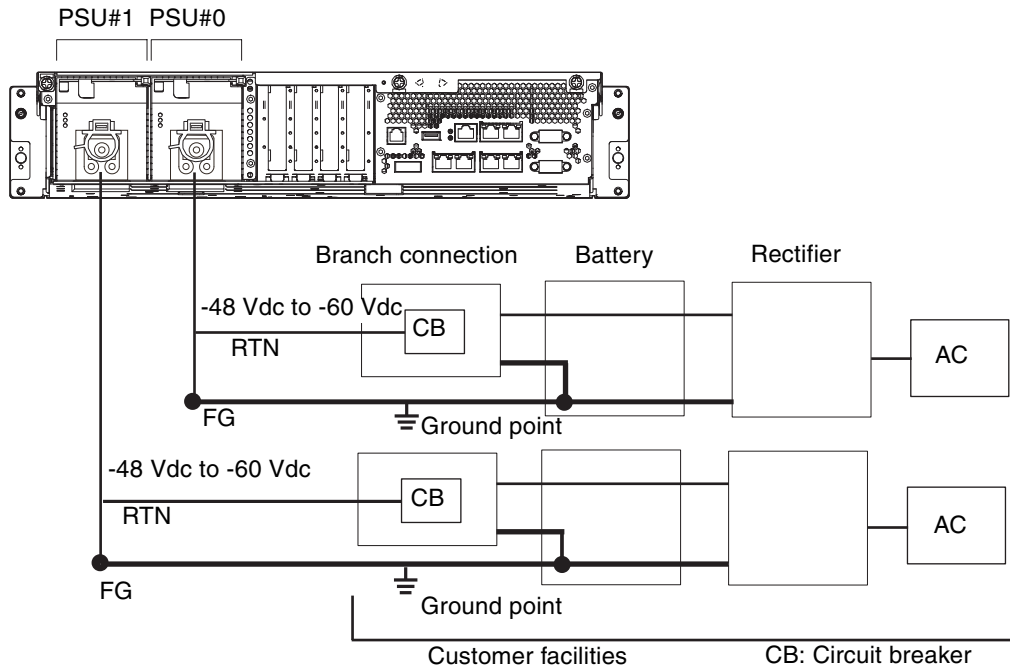
To connect the power cords in a redundant PSU configuration to the same DC power supply, connect each power cord independently to its own outlet.

FIGURE C-2 Power Cords With a Redundant PSU Connection



To connect the power cords in a dual power feed configuration, connect each power cord separately to each DC power supply equipment.

FIGURE C-3 Power Cords With a Dual-Power Feed Connection



C.1.4 Grounding

The DC power supply model of the M3000 server is shipped with two DC power cords. Since these DC power cords have a connector only for the server end, a terminal matching the DC power supply equipment will need to be attached to the DC power supply end of the cord. Moreover, the power supply equipment must be correctly grounded. Confirm that the grounding prong is connected to the positive bus on the battery box.

The grounding resistance must not be greater than 10Ω . The grounding method varies by the building where you install the server. Make sure that the facility administrator or a qualified electrician verifies the grounding method for the building and performs the grounding work.

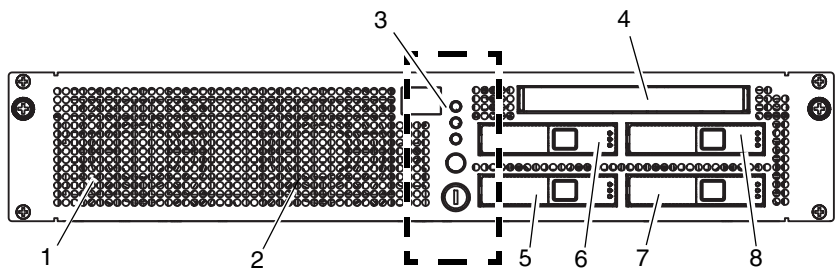
C.2 The Server Views

This section describes the names of parts mounted on the DC power supply model.

Note – This is equivalent to [Section A.1, “The Server Views”](#) on page A-1. When using the DC power supply model, refer to the content described in this appendix.

[FIGURE C-4](#) shows a front view of the DC power supply model.

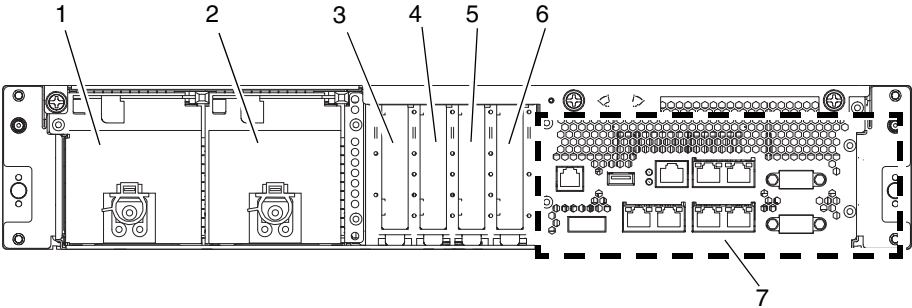
FIGURE C-4 Server (Front View) : DC Power Supply Model



Location Number	Name	Abbreviation
1	Fan unit	FAN_A#0
2	Fan unit	FAN_A#1
3	Operator panel	OPNL
4	CD-RW /DVD-RW drive unit	DVDU
5	Hard disk drive	HDD#0
6	Hard disk drive	HDD#1
7	Hard disk drive	HDD#2
8	Hard disk drive	HDD#3

[FIGURE C-5](#) shows a rear view of the DC power supply model.

FIGURE C-5 Server (Rear View) : DC Power Supply Model



Location Number	Name	Abbreviation
1	Power supply unit	PSU#1
2	Power supply unit	PSU#0
3	PCIe slot	PCI#3
4	PCIe slot	PCI#2
5	PCIe slot	PCI#1
6	PCIe slot	PCI#0
7	Rear panel	

C.3 showhardconf Command

This section describes the `showhardconf` command on the DC power supply model.

Note – This is equivalent to [Section B.3.1, “Using the showhardconf Command” on page B-4](#). When using the DC power supply model, refer to the content described in this appendix.

The `showhardconf` command displays the following information about each FRU:

- Current configuration and status
- Number of installed FRUs
- Domain information

- Name properties of PCIe cards

When you use the `showhardconf` command to show the FRU configuration and status information and the domain information, it displays any of the status described below. Beside a unit failed or degraded, placed an asterisk (*) indicating the locating fault.

- Faulted: The component is faulty and is not operating.
- Degraded: The component is operating. However, either an error has been detected or the component is faulty. As a result, the component might be operating with reduced functionality or performance.
- Deconfigured: As a result of another component's faulted or degraded status, the component is not operating. (The component itself is not faulted or degraded.).
- Maintenance: The component is under maintenance. A `deletefru (8)`, `replacefru (8)`, or `addfru (8)` operation is currently underway.
- Normal: Operating normally.

On the DC power supply model, the `showhardconf` command output for the CPU and the power supply unit section is as shown in the example below.

```
XSCF> showhardconf

MBU_A Status:Normal; Ver:0301h; Serial:PP0932047A ;
+ FRU-Part-Number:CA07082-D051 A1 /541-4281-01 ;
+ CPU Status:Normal;
+ Freq:2.750 GHz; Type:32;
+ Core:4; Strand:2;
+ Memory_Size:32 GB;

PSU#0 Status:Normal; Serial:EA09320015;
+ FRU-Part-Number:CA01022-0730 01A /300-2278-01 ;
+ Power_Status:On;
+ Type:DC;
PSU#1 Status:Normal; Serial:EA09320016;
+ FRU-Part-Number:CA01022-0730 01A /300-2278-01 ;
+ Power_Status:On;
+ Type:DC;
```