Fujitsu M10/
SPARC M10 Systems
Quick Guide

FUJITSU

ORACLE

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Preface

This document describes the basic specifications and system configurations that users need to be familiar with when using Oracle or Fujitsu SPARC M10 Systems.
The document also provides an overview of the SPARC M10 Systems and indicates the reference manuals for different work phases or purposes.

The SPARC M10 Systems are equipped with the high-performance, high-reliability SPARC64 X processor.

The preface includes the following sections:

■ Text Conventions
■ Document Feedback

Text Conventions

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

Font/Symbol	Meaning	Example
Italic	Indicates the name of a reference manual, a variable, or user-replaceable text.	See the *Fujitsu M10/SPARC M10 Systems Installation Guide*.
" "	Indicates the name of a chapter, section, item, button, or menu.	See "Chapter 2 Network Connection."

Document Feedback

If you have any comments or requests regarding this document, please go to one of the following URLs.

Japanese site
http://jp.fujitsu.com/platform/server/sparc/manual/

Global site
http://www.fujitsu.com/global/services/computing/server/sparc/downloads/manual/

Understanding an Overview of the System

This section describes the lineup, firmware and software, external view, system configuration, and system specifications of SPARC M10 Systems.

Lineup

Server main unit

The SPARC M10 Systems lineup consists of the following models that meet various requirements.

SPARC M10-1

This compact model combines both the space-saving and high performance of a single rack unit.

Reference **External Views of the Chassis and System Configuration Examples - SPARC M10-1**

SPARC M10-4

Using a single chassis, this model is a mid-range server with high performance and high reliability that is optimal for data center integration and virtualization.

Reference **External Views of the Chassis and System Configuration Examples - SPARC M10-4**

SPARC M10-4S

This model employs a building block (BB) system of interconnected chassis. You can increase or decrease the number of connected chassis according to your processing capacity requirements.
The model has the scalability/flexibility for a wide range of servers, from mid-range to high-end servers.
A system of the connected chassis is called a building block configuration.

Reference **External Views of the Chassis and System Configuration Examples - SPARC M10-4S**

Options

PCI expansion unit

The SPARC M10 Systems offer a PCI expansion unit for I/O slot expansion. The above three models support the PCI expansion unit, which supports PCI Express (PCIe).

Reference **External Views of the Chassis and System Configuration Examples - PCI expansion unit**

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Firmware and Software Required for SPARC M10 Systems

In SPARC M10 Systems, different firmware and software, such as XSCF firmware and Oracle VM Server for SPARC, are used to configure physical partitions and logical domains.
For details on firmware and software, see "Chapter 1 Understanding an Overview of the SPARC M10 Systems" in the *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*.
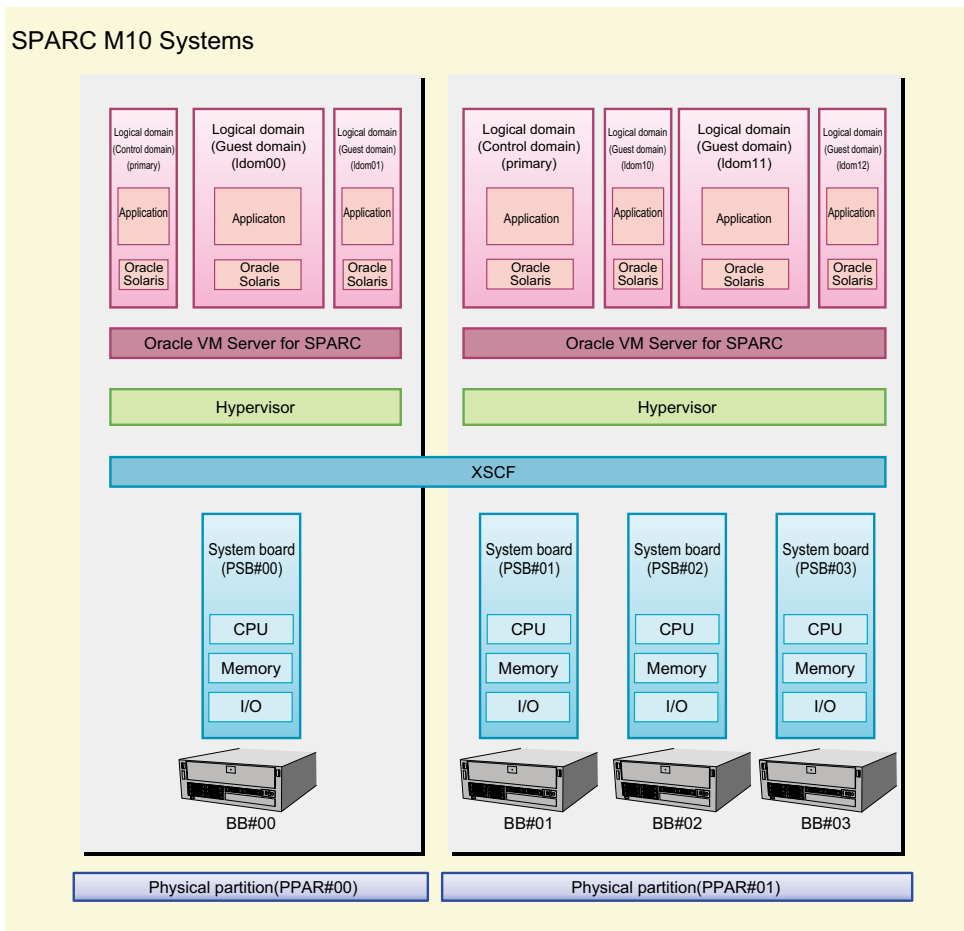
The main firmware and software used in SPARC M10 Systems are as follows.

XSCF Firmware

The XSCF firmware is a system control facility mounted on SPARC M10 Systems as standard. The XSCF firmware runs on a dedicated processor (service processor) that is independent of the processors in the server.
The XSCF firmware is placed in each chassis of SPARC M10-1, SPARC M10-4, and SPARC M10-4S. The XSCF firmware interacts with a logical domain and controls the entire system. If the system is comprised of multiple SPARC M10-4S chassis connected using the building block (BB) configuration, a service processor is placed in each SPARC M10-4S chassis and each crossbar box (XBBOX) that connects these chassis. The XSCF firmware runs on the service processor.

Hypervisor

Different firmware and software run in SPARC M10 Systems. They include the XSCF firmware that monitors and controls the entire system and Oracle Solaris that is installed in logical domains. The Hypervisor firmware, which is placed between the XSCF firmware and Oracle Solaris, provides an interface that transfers the setting information from the XSCF to the logical domains and reports the status of the logical domains to the XSCF.

Oracle VM Server for SPARC

Oracle VM Server for SPARC is software for configuring a logical domain environment. It is used by installing it in the Oracle Solaris environment.

External Views of the Chassis and System Configuration Examples

The following pages show external views of the chassis and system configuration examples for different models.

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SPARC M10-1

A single SPARC M10-1 is used in this configuration.
Up to three PCI expansion units can be connected to it.

External views of the SPARC M10-1 chassis

Front view

Panel LEDs   Operation panel

Lever

USB port   Power switch

Lever   Disk drive   Mode switch

Rear view

PCI Express slots

Power supply units   XSCF-LAN port

USB port   GbE LAN ports   SAS port   Serial port   Locator LED   XSCF LED   XSCF USB port
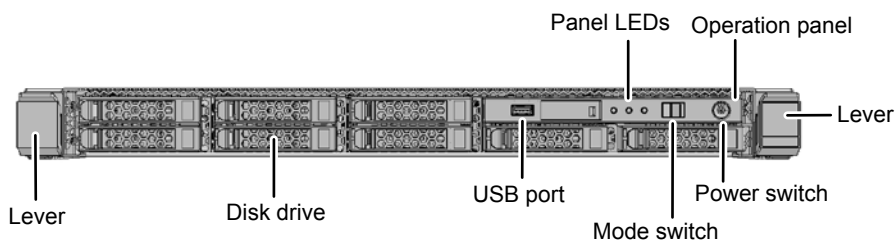
SPARC M10-4

A single SPARC M10-4 unit is used, not as a building block, in this configuration.
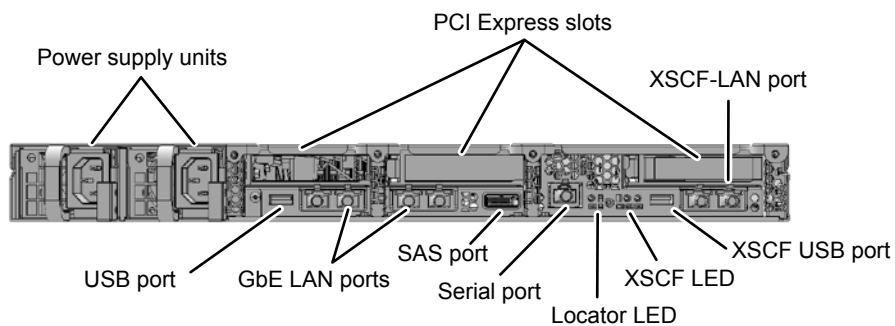Up to eleven PCI expansion units can be connected to it.

External views of the SPARC M10-4 chassis

Front view

Front cover

Fan unit (*)

Operation panel

Power switch

USB port

Disk drive

Power supply unit (*)

Panel LEDs

Mode switch
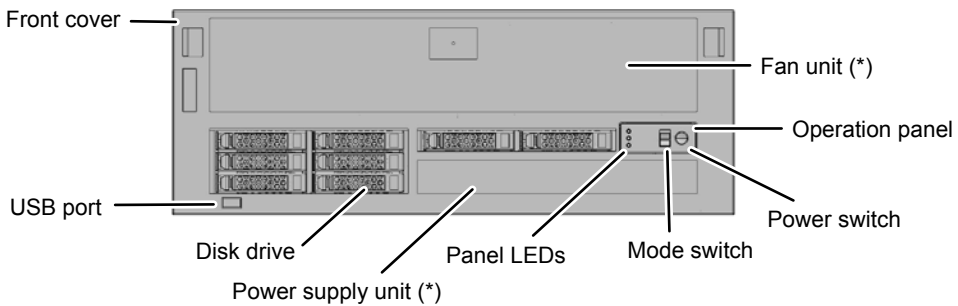
*: You can see the fan unit and the power supply unit by removing the front cover.

Rear view

XSCF USB port

XSCF-LAN port

Serial port

XSCF LED

Power supply units

USB port

SAS port

PCI Express slot

GbE LAN ports
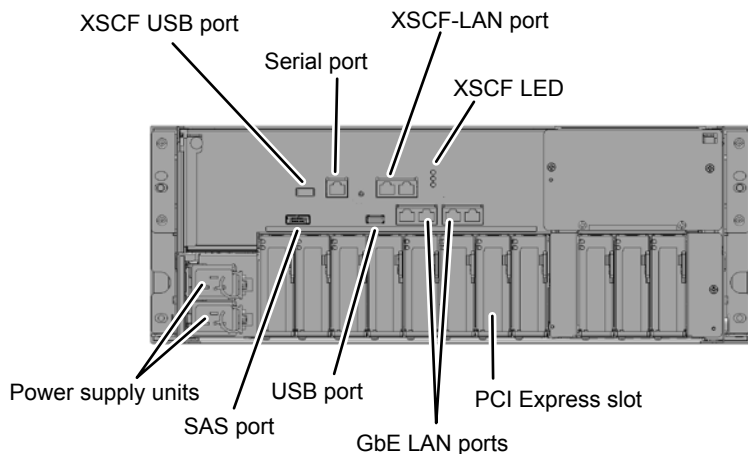
SPARC M10-4S (1)

Multiple SPARC M10-4S units are connected in a building block configuration.
This model can start with a single-BB configuration and then be expanded to a multi-BB configuration with the addition of individual chassis.
The model contains a crossbar unit for logically switching the connections of CPU/memory board units and I/O units.

> **Reference** **System configuration example - building block configuration (connected through crossbar boxes)**

Up to eight PCI expansion units can be connected to one SPARC M10-4S unit.

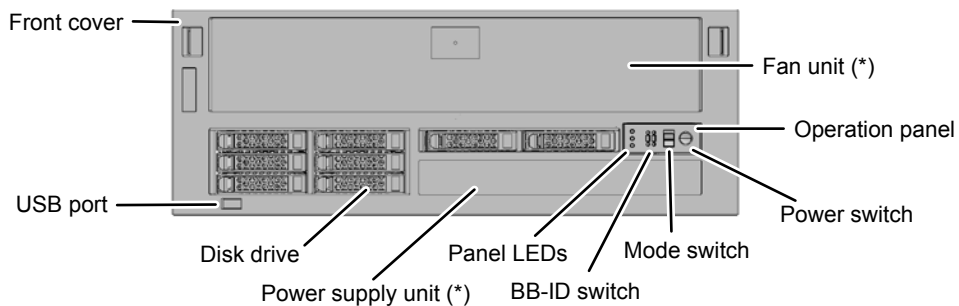## External views of the SPARC M10-4S chassis

Front view

Front cover
Fan unit (*)
Operation panel
USB port
Power switch
Disk drive
Panel LEDs
Mode switch
Power supply unit (*)
BB-ID switch

*: You can see the fan unit and the power unit by removing the front cover.

Rear view

XSCF-LAN port
XSCF BB control port
Serial port
XSCF DUAL control port
XSCF LEDs
XSCF USB port
Power supply units
Crossbar unit
SAS port
USB port
PCI Express slot
Crossbar cable ports
GbE LAN ports
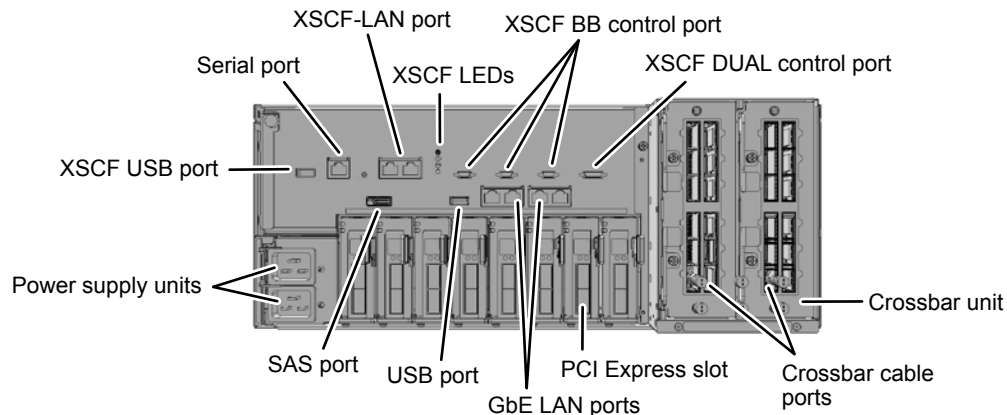
SPARC M10-4S (2)

External views of the crossbar box

The crossbar box is a switch used to logically connect the CPU and SPARC M10-4S.

There are two types of crossbar boxes: one has two mounted crossbar units, and the other has three mounted crossbar units.

Front view
(common to both types, which have two/three mounted crossbar units)

Front cover

Fan unit (*)

Operation panel

Power switch

Panel LEDs

BB-ID switch

Mode switch
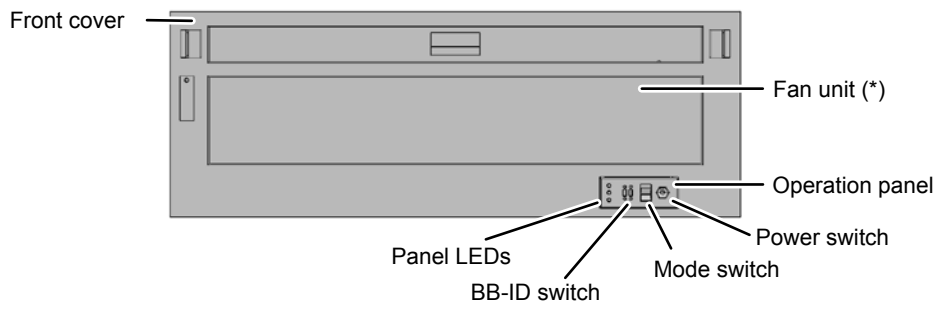
*: You can see the fan unit by removing the front cover.

Rear view
(type containing two crossbar units)

This type is used in 2-BB to 8-BB configurations (the building blocks are connected through crossbar boxes).

XSCF unit   XSCF-LAN port

XSCF USB port

Serial port

XSCF LEDs

XSCF DUAL control port

XSCF BB control port

Crossbar units

Power supply units

Crossbar cable ports
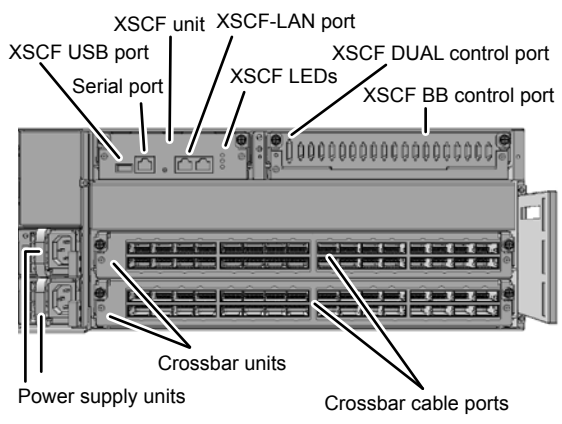
Rear view
(type containing three crossbar units)

This type is used in 9-BB to 16-BB configurations (the building blocks are connected through crossbar boxes).

XSCF unit   XSCF-LAN port

XSCF USB port

Serial port

XSCF LEDs

XSCF DUAL control port

XSCF BB control port

Crossbar units

Power supply units

Crossbar cable ports

SPARC M10-4S (3)

System configuration example
– building block configuration (directly connected chassis)

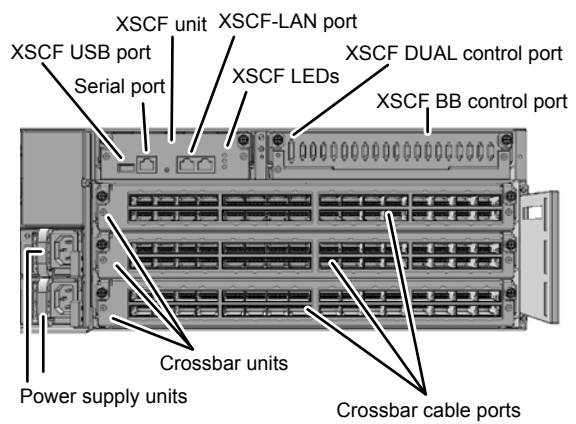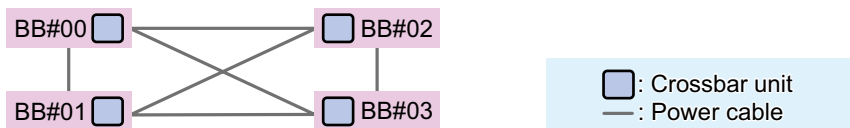In this configuration, the SPARC M10-4S units are directly connected with electric cables without using crossbar boxes.

Four-BB configuration (1 BB to 4 BBs)

Up to four SPARC M10-4S units can be connected.

BB#00 — BB#02
BB#01 — BB#03

☐ : Crossbar unit
— : Power cable

Building block numbers are identifiers (BB-IDs) that are numbered sequentially starting with 00.
For the connection procedure, see the *Fujitsu M10/SPARC M10 Systems Installation Guide*.

System configuration example
– building block configuration (connected through crossbar boxes)

In this configuration, building blocks are connected with optical cables through crossbar boxes (XBBOXs).
Up to 16 SPARC M10-4S units can be connected. The number of SPARC M10-4S units that can be connected depends on the number of crossbar boxes and the number of crossbar units mounted in the crossbar boxes.

Eight-BB configuration (2 BBs to 8 BBs)

Up to eight SPARC M10-4S units can be connected through two crossbar boxes containing crossbar units (two units per box).

BB#00   XBBOX#80   BB#04
BB#01   BB#05
BB#02   XBBOX#81   BB#06
BB#03   BB#07

XBBOX: Crossbar box
☐ : Crossbar unit
--- : Optical cable
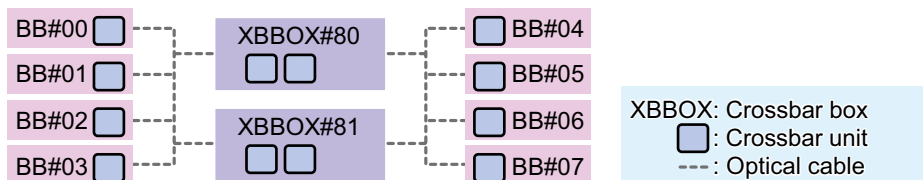
SPARC M10-4S (4)

Sixteen-BB configuration (9 BBs to 16 BBs)

Up to sixteen SPARC M10-4S units can be connected through four crossbar boxes containing crossbar units (three units per box).
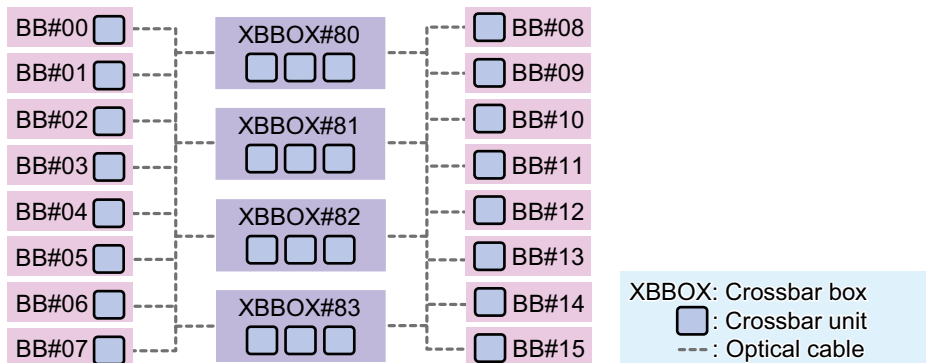
Each number shown after BB# or XBBOX# is an ID (BB-ID) used for identification. Building block numbering begins with 00, and crossbar box numbering begins with 80. For the connection procedure, see the *Fujitsu M10/SPARC M10 Systems Installation Guide*.

Crossbar boxes are shipped mounted in a dedicated rack (expansion rack) together with a dedicated power distribution unit (PDU) and crossbar cables.
An 8-BB configuration (2 BBs to 8 BBs) uses expansion rack 1, and a 16-BB configuration (9 BBs to 16 BBs) uses expansion racks 1 and 2.

PCI expansion unit (Option)

The optional PCI expansion unit can be connected to either the SPARC M10-1 chassis or the SPARC M10-4/M10-4S chassis.

External views of the PCI expansion unit

Front view

Front cover

Fan unit (*)

LED

*: You can see the fan unit by removing the front cover.

Rear view

Link board

Power supply units

PCI Express slot
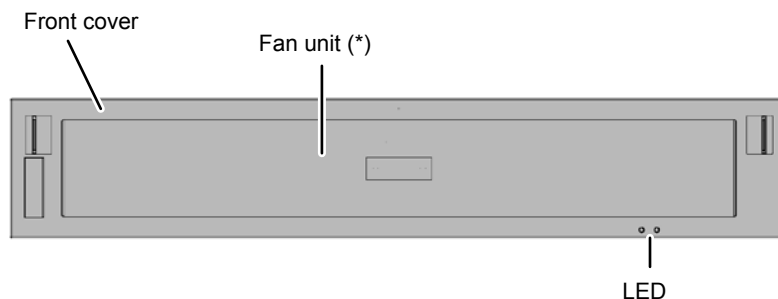
System Specifications

This section mainly describes the hardware specifications of Athena servers. For details on firmware and software, see "Chapter 1 Understanding an Overview of the SPARC M10 Systems" in the *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*.

Model specifications (1/3)

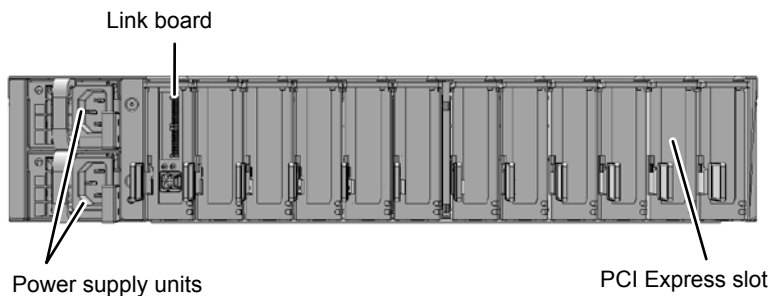| Item		SPARC M10-1	SPARC M10-4	SPARC M10-4S
External dimensions (*1)	Height	1U	4U	4U
	Height x width x depth	42.5 mm x 431 mm x 721 mm (1.7 in. x 17.0 in. x 28.4 in.)	175 mm x 440 mm x 746 mm (6.9 in. x 17.3 in. x 29.4 in.)	175 mm x 440 mm x 810 mm (6.9 in. x 17.3 in. x 31.9 in.)
Weight		18 kg	58 kg	60 kg
Maximum number of connected units (Number of chassis)		-	-	4
CPU	Processor	SPARC64 X	SPARC64 X	SPARC64 X
	Clock count	2.8 GHz	2.8 GHz	3.0 GHz
	Maximum number of CPUs	1	4	4
	Number of cores (per CPU)	16	16	16
	Number of threads (per core)	2	2	2
	Primary cache (per core)	64 KB	64 KB	64 KB
	Secondary cache (per chip)	22 MB	24 MB	24 MB
Memory	Type	DDR3-DIMM	DDR3-DIMM	DDR3-DIMM
	Maximum size	1 TB	4 TB	4 TB
	Maximum number of mounted memory modules	16	64	64
	Unit of expansion	4 (8 when memory mirroring is enabled)	8	8

Model specifications (2/3)

Item		SPARC M10-1	SPARC M10-4	SPARC M10-4S
Built-in I/O	Built-in disk (SAS)	8 (HDD/SSD)	8 (HDD/SSD)	8 (HDD/SSD)
	Built-in disk hardware RAID	Mounted	Mounted	Mounted
	Built-in CD-RW/ DVD-RW drive	Not mounted	Not mounted	Not mounted
	Built-in tape drive	Not mounted	Not mounted	Not mounted
	On-board interface	4 GbE LAN ports 1 SAS port 2 USB ports	4 GbE LAN ports 1 SAS port 2 USB ports	4 GbE LAN ports 1 SAS port 2 USB ports
	PCIe slot	3 slots	11 slots	8 slots
I/O slot (when using PCI expansion unit)	Maximum number of PCIe slots (built-in + PCI expansion unit)	33	121	88
	Maximum number of connected PCI expansion units	2	6 (in 4-CPU configuration)	5 (in 4-CPU configuration)
Redundant configuration		Built-in disk drive/fan unit/power supply unit/ power cord	Built-in disk drive/fan unit/power supply unit (*2)/power cord (*2)/ PCIe card (in multi-path configuration)/ LLC water cooling pump	Built-in disk drive/fan unit/power supply unit (*2)/power cord (*2)/ PCIe card (in multi-path configuration)/ LLC water cooling pump
Active replacement		Built-in disk drive/fan unit/power supply unit/ power cord	Built-in disk drive/fan unit/power supply unit (*2)/power cord (*2)/ PCIe card (*4)	Building block (*3)/ built-in disk drive/fan unit/power supply unit (*2)/power cord (*2)/ PCIe card (*4)
Supported operating systems (*5)		Oracle Solaris 11.1 Oracle Solaris 10 1/13	Oracle Solaris 11.1 Oracle Solaris 10 1/13	Oracle Solaris 11.1 Oracle Solaris 10 1/13
Virtualization	Physical partition	None	None	Supported
	Number of partitions	–	–	1
	Granularity	–	–	In building block (BB) units
	Logical domains	Supported	Supported	Supported
	Number of domains	32	128	256 (in physical partition units)
	Granularity (CPU)	In units of threads	In units of threads	In units of threads
	Granularity (Memory)	In units of 256 MB	In units of 256 MB	In units of 256 MB
	Granularity (I/O)	In virtual I/O units	In virtual I/O units	In virtual I/O units

Model specifications (3/3)

Item		SPARC M10-1	SPARC M10-4	SPARC M10-4S
eXtended System Control Facility (*6)	External interface	2 XSCF-LAN ports 1 serial port 1 USB port	2 XSCF-LAN ports 1 serial port 1 USB port	2 XSCF-LAN ports 1 serial port 1 USB port 3 XSCF BB control ports 1 XSCF DUAL control port
	Redundant configuration	Not available	Not available	Supported (2 or more building blocks (*3))
	Active replacement	Not available	Not available	Supported (only 2-BB configuration or larger)

*1: None of the dimensions includes the sizes of protrusions.

*2: A redundant configuration applies only when 200 VAC is used.

*3: A single SPARC M10-4S in a building block configuration is referred to as a building block.

*4: Some PCIe card types do not support active replacement.

*5: The operating system is installed in the initial system state. For detailed software requirements, see the *Fujitsu M10/SPARC M10 Systems Product Notes*.

*6: Firmware is built into the eXtended System Control Facility. This firmware is installed on the service processor in the XSCF unit in the initial system state. For details, see the *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*.

Crossbar box specifications (1/2)

Item		Crossbar box
External dimensions (*)	Height	4U
	Height x width x depth	174 mm x 440 mm x 740 mm (6.9 in. x 17.3 in. x 29.1 in.)
Weight		40 kg
eXtended System Control Facility	External interface	2 XSCF-LAN ports 1 serial port 1 USB port 19 XSCF BB control ports 1 XSCF DUAL control port
	Redundant configuration	Available (only between SPARC M10-4S units)
	Active replacement	Available

Crossbar connection interface		- 2 crossbar units mounted
		  32 crossbar cable ports
		- 3 crossbar units mounted
		  48 crossbar cable ports

Crossbar box specifications (2/2)

Item	Crossbar box
Redundant configuration	Power supply unit/fan unit
Active replacement	Power supply unit/fan unit/XSCF unit

*: None of the dimensions includes the sizes of protrusions.

PCI expansion unit specifications

Item		PCI expansion unit
External dimensions (*1)	Height	2U
	Height x width x depth	86 mm x 440 mm x 740 mm (3.4 in. × 17.3 in. × 29.1 in.)
Weight		22 kg
Number of PCIe slots		11
Redundant configuration		Power supply unit/fan unit
Active replacement		Power supply unit/fan unit/PCIe card (*2)/link board (*3)

*1: None of the dimensions includes the sizes of protrusions.
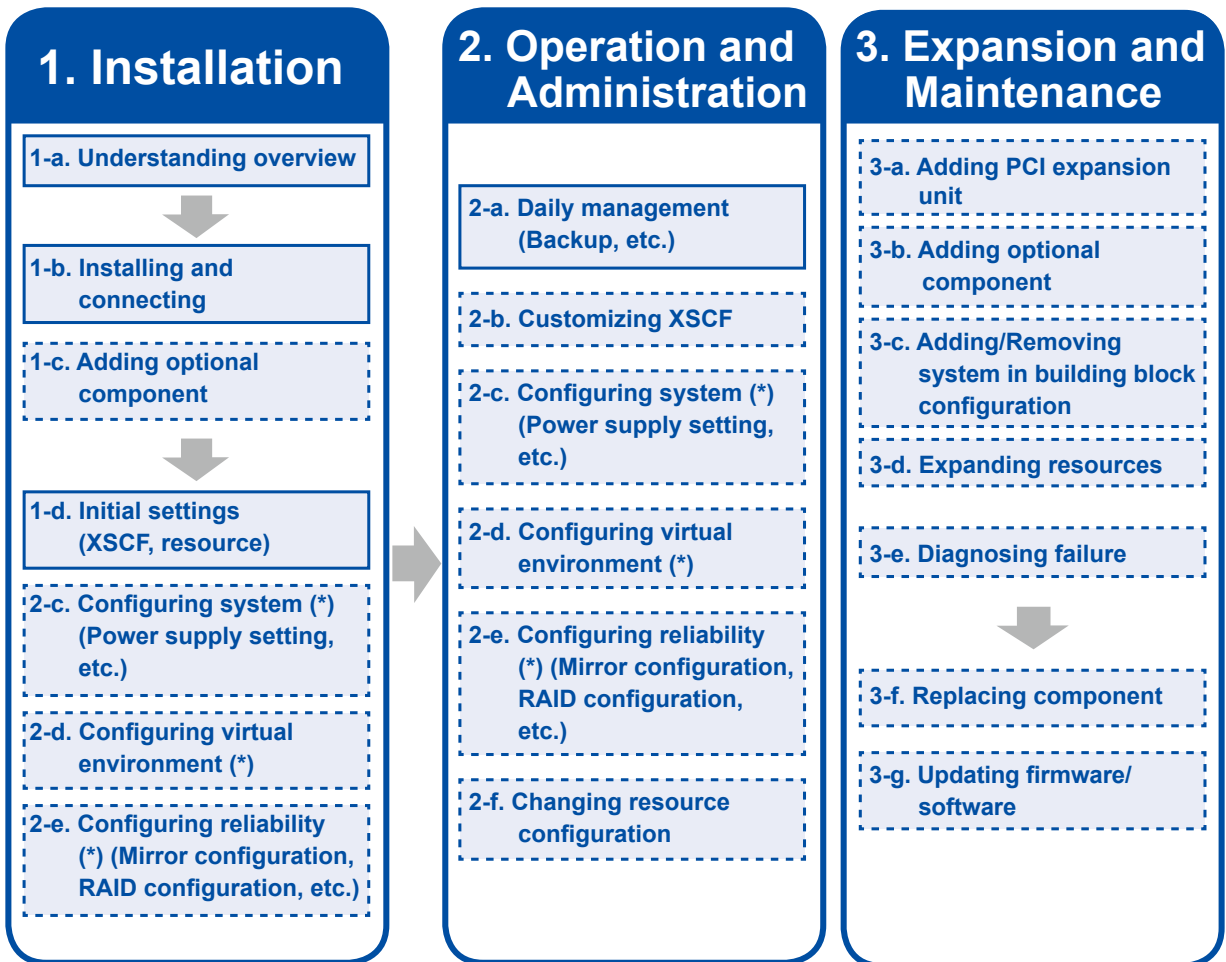*2: Some PCIe card types do not support active replacement.
*3: You can replace these units after disconnecting the PCI expansion unit from the logical domain by using the PCI Hot Plug (PHP) function.

What Do I Do Now?
Reference Guide (by Phase/Purpose)

This section describes the work for each phase, from system installation to expansion and maintenance, and the reference manuals for each work item.

⬜ indicates a required work item, and ⬜ indicates a work item to be performed as required.

1. Installation

1-a. Understanding overview

⬇

1-b. Installing and connecting

1-c. Adding optional component

⬇

1-d. Initial settings (XSCF, resource)

2-c. Configuring system (*) (Power supply setting, etc.)

2-d. Configuring virtual environment (*)

2-e. Configuring reliability (*) (Mirror configuration, RAID configuration, etc.)

2. Operation and Administration

2-a. Daily management (Backup, etc.)

2-b. Customizing XSCF

2-c. Configuring system (*) (Power supply setting, etc.)

2-d. Configuring virtual environment (*)

2-e. Configuring reliability (*) (Mirror configuration, RAID configuration, etc.)

2-f. Changing resource configuration

3. Expansion and Maintenance

3-a. Adding PCI expansion unit

3-b. Adding optional component

3-c. Adding/Removing system in building block configuration

3-d. Expanding resources

3-e. Diagnosing failure

⬇

3-f. Replacing component

3-g. Updating firmware/ software

*: You can configure these items as required, when configuring the initial system settings. You can also change the settings and set values after starting operation.

1. Installation

a. Understanding an overview of the system

Check the SPARC M10 Systems overview.

Reference **"Understanding an Overview of the System" (This document)**

b. Installing the system - Connecting a chassis

Before installing the system, confirm that the installation location meets the requirements. After confirmation, install and connect the chassis required for the system configuration.

Reference *Fujitsu M10/SPARC M10 Systems Installation Guide*

"1.1 Workflow for the SPARC M10-1"
"1.2 Workflow for the SPARC M10-4"
"1.3 Workflow for the SPARC M10-4S"
"1.4 Workflow when Connecting the PCI Expansion Unit"

c. Adding an optional component

If you have ordered any option, such as a memory module or PCIe card, mount the additional component during installation.

Reference *Fujitsu M10-1/SPARC M10-1 Service Manual*
Fujitsu M10-4/Fujitsu M10-4S/SPARC M10-4/SPARC M10-4S Service Manual
PCI Expansion Unit for Fujitsu M10/SPARC M10 Systems Service Manual

d. Configuring the initial system settings

Before starting the system, configure the initial settings of the eXtended System Control Facility (XSCF). Use the CPU Activation function to also configure the use of resources according to the number of purchased CPU cores activated.

Reference *Fujitsu M10/SPARC M10 Systems Installation Guide*

"Chapter 6 Performing an Initial System Diagnosis"
"Chapter 7 Making the Initial System Settings"

In addition, configure operation in, for example, a virtual environment configuration, as necessary.

2. Operation and Administration

a. Conducting daily management

You should understand the basic operations, which include logging in/out from the management console and starting/stopping the system. These basic operations are required for system operation and management and for daily management work items, such as backup.

Reference *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*

"Chapter 2 Logging In/Out of the XSCF"
"Chapter 6 Starting/Stopping the System"
"Chapter 9 Managing the SPARC M10 Systems Daily"
"Chapter 13 Switching to Locked/Service Mode"

b. Customizing eXtended System Control Facility (XSCF) settings

From the initial setup of the eXtended System Control Facility, you can customize the configuration according to your use environment.

Reference *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*

"Chapter 3 Configuring the System"

c. Configuring the system

Configure the entire system including power control. The green IT function minimizes the power consumption of the system.

Reference *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*

"Chapter 4 Configuring the System to Suit the Usage Type"

d. Configuring a virtual environment

You can configure a virtual environment by dividing the system into physical partitions or logical domains. You can run a standalone operating system in each logical domain.

Reference *Fujitsu M10/SPARC M10 Systems Domain Configuration Guide*

"Chapter 4 Physical Partition Configuration Example"
"Chapter 5 Logical Domain Configuration Example"

2. Operation and Administration

e. Configuring a highly reliable system

You can use memory mirroring or the hardware RAID function to improve system reliability.

Reference *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*

"Chapter 14 Configuring a Highly Reliable System"

f. Changing the resource configuration

You can use the dynamic reconfiguration function of Oracle VM Server for SPARC to change the CPU or memory configuration.

Reference *Fujitsu M10/SPARC M10 Systems Domain Configuration Guide*

"Chapter 6 Physical Partition Reconfiguration Example"

3. Expansion and Maintenance

a. Adding a PCI expansion unit

You can use a PCI expansion unit to increase the number of PCIe slots.

Reference *Fujitsu M10/SPARC M10 Systems Installation Guide*

> **"1.4 Workflow when Connecting the PCI Expansion Unit"**

b. Adding an optional component

You can expand the system by adding an optional component such as a memory module or PCI card.

Reference *Fujitsu M10-1/SPARC M10-1 Service Manual*

Fujitsu M10-4/Fujitsu M10-4S/SPARC M10-4/SPARC M10-4S Service Manual

PCI Expansion Unit for Fujitsu M10/SPARC M10 Systems Service Manual

c. Adding/Removing a system in a building block configuration

You can flexibly expand or reduce the system by adding or removing a SPARC M10-4S in the building block system.

Reference *Fujitsu M10/SPARC M10 Systems Installation Guide*

> **"Chapter 8 Before Installing/Removing a System with a Building Block Configuration"**
>
> **"Chapter 9 Installing a System with a Building Block Configuration"**
>
> **"Chapter 10 Removing a System with a Building Block Configuration"**

Fujitsu M10/SPARC M10 Systems Domain Configuration Guide

> **"Chapter 6 Physical Partition Reconfiguration Example"**

d. Expanding resources according to the load

You can use the CPU Activation function for CPU expansion in units of two cores when the load increases.

Reference *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*

> **"Chapter 5 CPU Activation"**

3. Expansion and Maintenance

e. Diagnosing a failure

If an error message appears on the console or the CHECK LED on the chassis goes on, diagnose whether a failure has occurred.

Reference *Fujitsu M10-1/SPARC M10-1 Service Manual*

Fujitsu M10-4/Fujitsu M10-4S/SPARC M10-4/SPARC M10-4S Service Manual

PCI Expansion Unit for Fujitsu M10/SPARC M10 Systems Service Manual

f. Replacing faulty components

Replace faulty components. The maintenance method varies with the component. Our service engineers should perform the maintenance work.

Reference *Fujitsu M10-1/SPARC M10-1 Service Manual*

Fujitsu M10-4/Fujitsu M10-4S/SPARC M10-4/SPARC M10-4S Service Manual

PCI Expansion Unit for Fujitsu M10/SPARC M10 Systems Service Manual

g. Updating firmware/software

Update the firmware for Oracle VM Server for SPARC and Oracle Solaris.

Reference *Fujitsu M10/SPARC M10 Systems System Operation and Administration Guide*

"Chapter 16 Updating Firmware/Software"

PCI Expansion Unit for Fujitsu M10/SPARC M10 Systems Service Manual

"Appendix C Updating the Firmware of the PCI Expansion Unit"

Free Manuals Download Website

http://myh66.com

http://usermanuals.us

http://www.somanuals.com

http://www.4manuals.cc

http://www.manual-lib.com

http://www.404manual.com

http://www.luxmanual.com

http://aubethermostatmanual.com

Golf course search by state

http://golfingnear.com

Email search by domain

http://emailbydomain.com

Auto manuals search

http://auto.somanuals.com

TV manuals search

http://tv.somanuals.com