Fujitsu SPARC M12 Quick Guide



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FUJITSU
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Preface

This document describes the basic specifications and system configurations that users need to be familiar with when using the Fujitsu SPARC M12 (hereinafter, referred to as "SPARC M12").The document also provides an overview of the SPARC M12 and indicates the reference manuals for different work phases or purposes.

Document configuration

1. Understanding an Overview of the System

   This chapter describes the SPARC M12 lineup and features.

2. External Views of the Chassis

   This chapter shows external views of the chassis for each model.

3. System Specifications

   This chapter describes the server and processor hardware specifications.
   For details on firmware and software, see "Chapter 1 Understanding an Overview of the SPARC M12/M10" in the *Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 System Operation and Administration Guide*.

4. Document Map Reference Guide (by Phase/Purpose)

   This chapter shows the reference manuals for each work item from SPARC M12 installation to operation/administration and system expansion.

5. Document List

   This chapter shows a list of documents related to the SPARC M12.

Text conventions

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

Font/Symbol	Meaning	Example
Italic	Indicates the name of a reference manual.	See the *Fujitsu SPARC M12-2S Installation Guide*.
" "	Indicates the name of a chapter, section, item, button, or menu.	See "Chapter 2 Network Connection."

Related documentation

- Sun Oracle software-related documents (Oracle Solaris, etc.)
  https://docs.oracle.com/en/
- For a list of documents related to the SPARC M12, see "5. Document List."

Document feedback

- If you have any comments or requests regarding this document, please take a moment to share them with us by indicating the manual code, manual title, and page, and stating your points specifically through the following sites:
  - Global site
    https://global.fujitsu/en-global/contact
  - Japanese site
    https://contactline.jp.fujitsu.com/contactform/csque06703/029675/

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1. Understanding an Overview of the System

The SPARC M12 is a UNIX server system that is designed with the high-performance, high-reliability SPARC64 XII processor and runs the Oracle Solaris operating system.

The system can support system configurations that meet the purpose and scale of business, by using CPU Activations and server connections through the building block (BB) method.

The database server processing of the core system has been accelerated, with the aim of streamlining tasks and suppressing investment costs, revolutionizing the businesses of customers.



1.1 Lineup

Server

SPARC M12-1

- This entry-level server packs high performance and high reliability in a small 1 RU form factor, and is ideal for any purpose.



SPARC M12-1

SPARC M12-2

- The compact chassis of this mid-range server, optimal for data center system integration, provides high performance and high reliability along with flexible scalability.



SPARC M12-2

SPARC M12-2S

- Providing excellent performance and high scalability, this flagship server achieves high performance, high reliability, and world-class scalability through building block connections.



SPARC M12-2S

Expansion Options

PCI expansion unit

- The SPARC M12 offers a PCI expansion unit for I/O slot expansion. All the available server models support the PCI expansion unit, which supports PCI Express (PCIe).



PCI expansion unit

1.2 SPARC M12 Features

High Performance

- The SPARC M12 is equipped with a new processor, the SPARC64 XII with improved CPU core performance. In addition to the adopted high-speed DDR4 memory improving memory access performance, the SPARC M12 has the Software On Chip function that incorporates part of software processing into the processor to accelerate database processing.

Scalability

- CPU Activations and the building block method enable step-by-step expansion in units of one CPU core to up to the maximum configuration of 384 CPU cores (16BB).

Flexibility

- You can flexibly configure a system, such as one emphasizing isolation or resource availability, by using various virtualization functions.

Reliability

- Starting with a new processor, the SPARC64 XII with mainframe-class reliability, and through high-reliability technologies such as data protection, redundancy, and dynamic degradation, the SPARC M12 thoroughly pursues reliability.
  Performance guarantee and continuous operation through alternative CPU cores are functions unique to the SPARC M12.

Safety

- The adopted OS is Oracle Solaris, a UNIX OS compliant with international standards.
  You can configure a highly reliable and secure system environment.

Ecology

- The SPARC M12 supports low power consumption to save energy through power-saving design and energy-saving management.

1.2.1 High Performance

The new processor, the SPARC64 XII, has substantially improved CPU core performance. Business performance increases, which streamlines tasks, optimizing investment costs.

Acceleration of database server processing

- The improved CPU core performance can increase business performance and suppress investment costs in the entire system.
- The SPARC M12 provides Software On Chip (SWoC) for accelerating the processing of databases, such as Oracle Database.
- The SPARC M12 adopts high-speed DDR4 memory for accelerating in-memory processing, and expands the memory bandwidth.

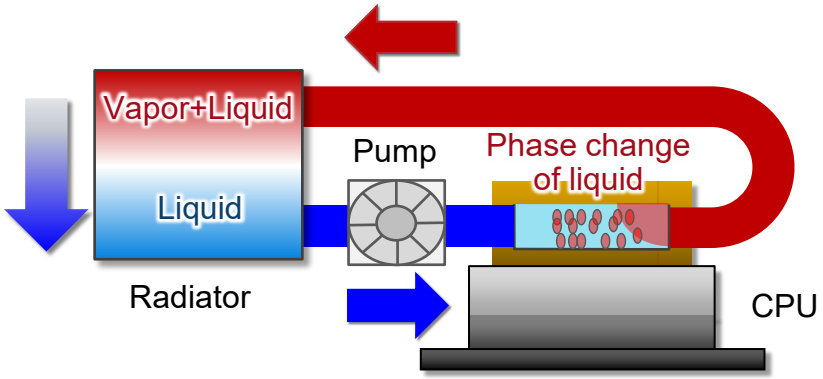
SPARC64 XII

- Designed with state-of-the-art 20 nm technology, the processor is capable of highly parallel processing of 8 threads per CPU core and up to 12 CPU cores/96 threads per CPU chip.
- Secondary cache memory is divided in units of CPU cores and high-capacity tertiary cache memory is added, resulting in accelerated data processing and an optimized balance between the speed and capacity of all cache memory.
- The maximum frequency is 4.25 GHz.

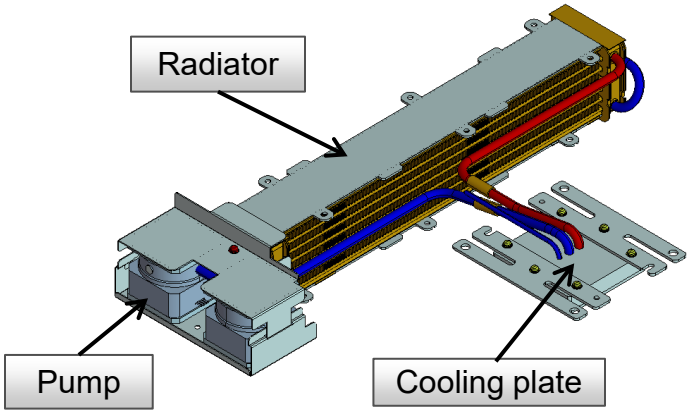


VLLC (Vapor and Liquid Loop Cooling)

- Technology mounted in the SPARC M12-2/M12-2S to strongly cool the CPU in order to achieve high CPU core performance
  - Used in addition to hybrid cooling with LLC, evaporative cooling takes heat away when liquid changes into vapor.
  - VLLC can exhibit the maximum cooling capacity as a liquid-cooled module that forcibly circulates refrigerant with a driving force, rather than using surface tension, natural convection, or gravity to circulate refrigerant.



In principle

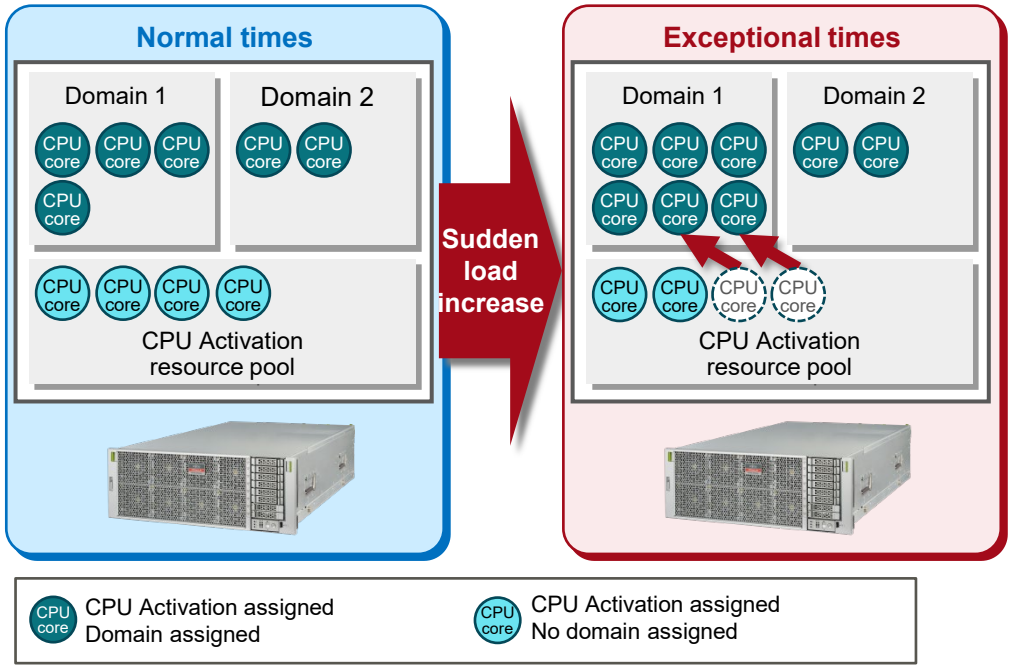


Implementation

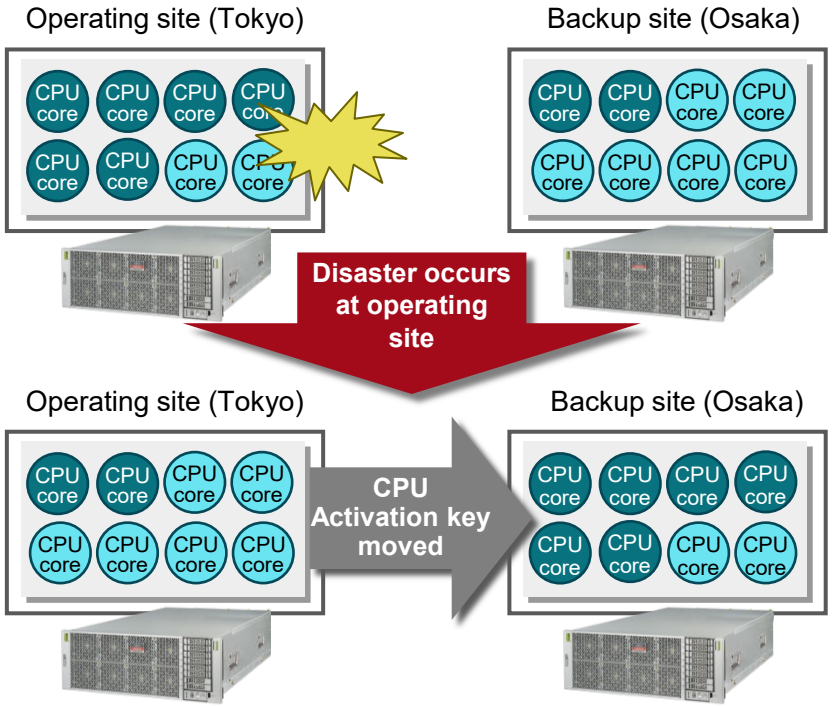
1.2.2 Scalability

CPU Activation

- By using the CPU Activation function, you can add CPU resources in the unit of CPU cores, which has finer granularity than the unit of CPU chips.
- You can add and register CPU core resources at any time.
- You can move resources by moving a CPU Activation key between SPARC M12 servers of the same model type.



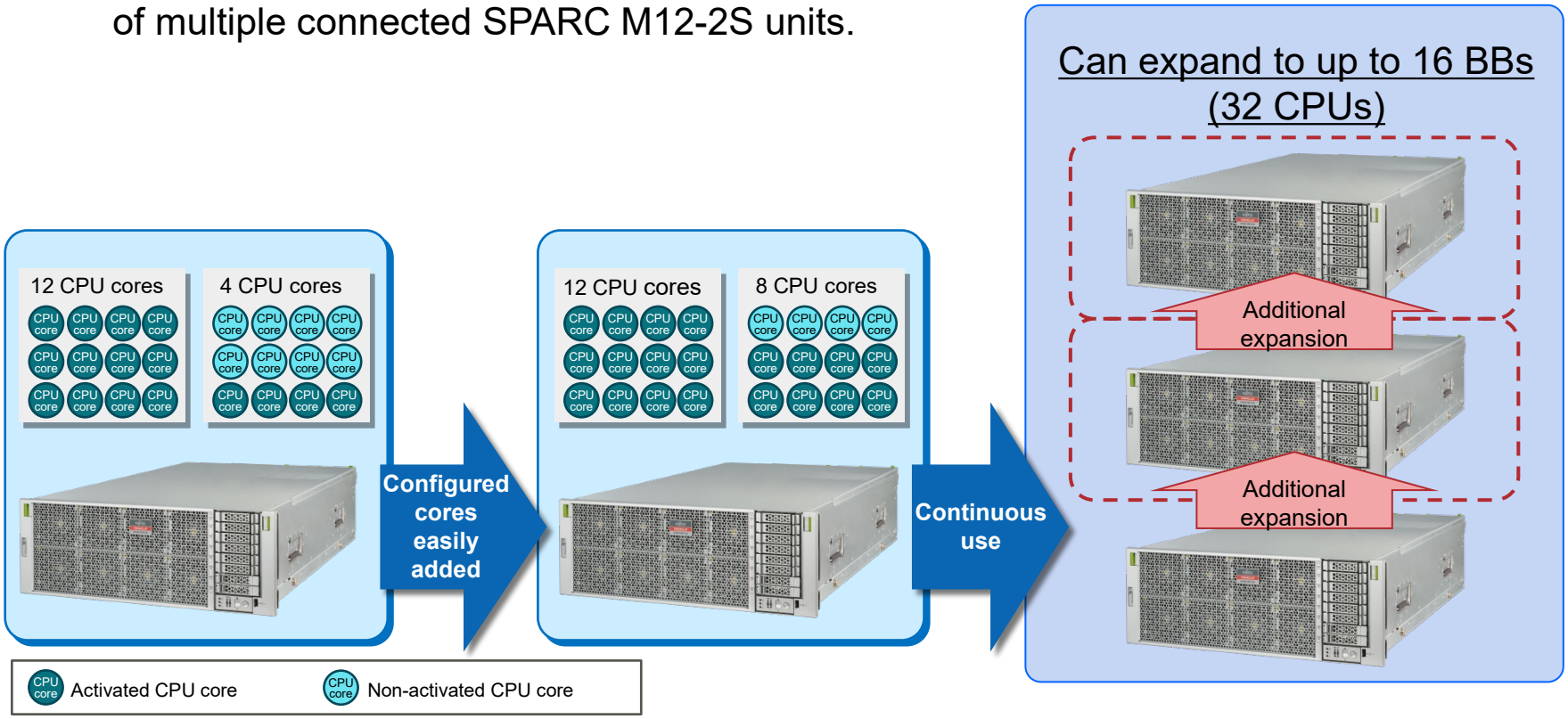
Resource shortage solved



Resources moved between systems

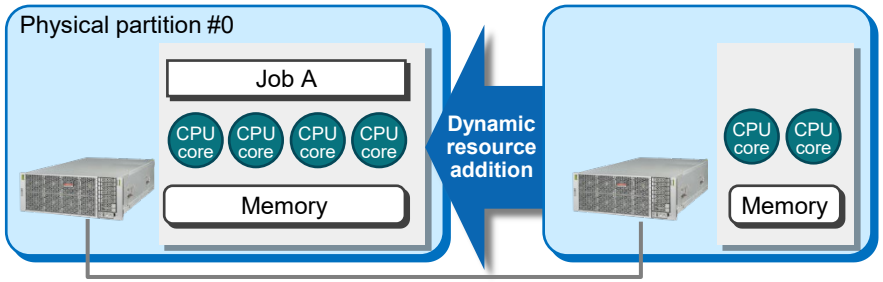
Building Block Configuration

- You can adjust the number of SPARC M12-2S connections according to the performance required. The building block method enables expansion to up to the 16BB configuration/32 CPUs/384 cores.
- A physical partition (hardware partition) can consist of multiple connected SPARC M12-2S units.

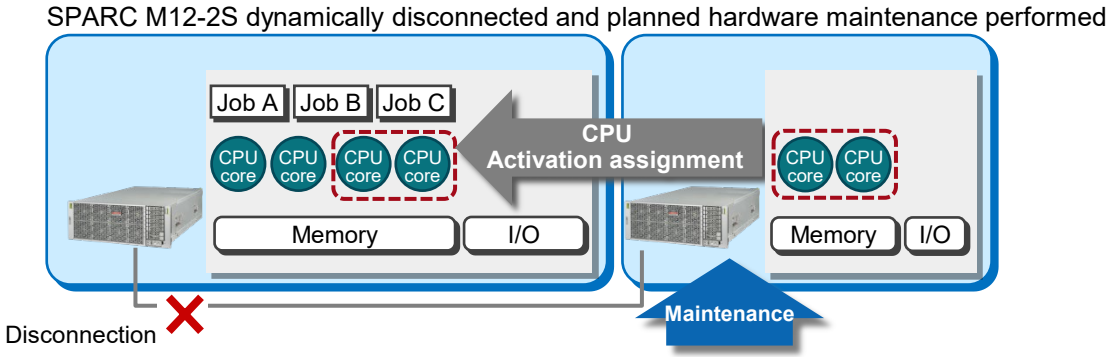


Dynamic Reconfiguration of Physical Partitions (PPAR DR)

- In the SPARC M12-2S, PPAR DR is a function that can add or remove hardware resources including CPUs, memory, and I/O devices in a physical partition without stopping a job.
- With this function, you can add resources (active addition) in a timely manner as required to add a new job, expand a job, etc. You can also perform active maintenance on hardware.



Addition of resources (active addition)



Active maintenance of hardware

1.2.3 Flexibility

You can flexibly configure a system by selecting from the following three choices for a virtual environment, according to your business: physical partition, Oracle VM Server for SPARC, and Oracle Solaris Zone.

Physical partition (PPAR)

- A physical partition can be configured with the SPARC M12-2S connected using the building block method.
  So you can create a physically independent and highly reliable system environment according to the scale of business.

Oracle VM Server for SPARC

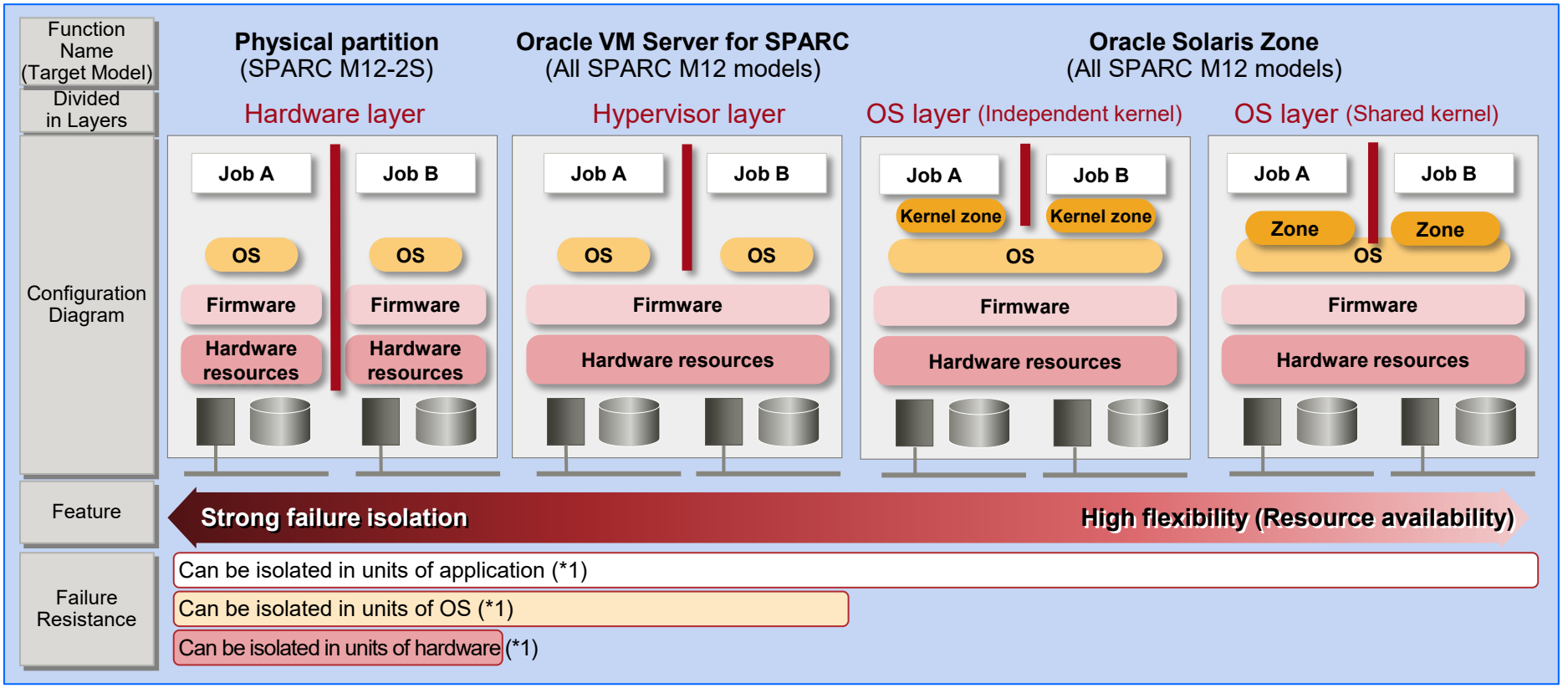
- You can have an independent OS run on domains by configuring virtual hardware environments (domains) in the firmware layer of a server.

Oracle Solaris Zone

- You can virtually divide the OS into zones and flexibly use the zones according to your business.

Types of Virtualization Functions

- A wide variety of virtualization functions can achieve high reliability and flexibility in an optimal balance.
- You can flexibly configure a system, such as one emphasizing isolation or resource availability.



*1 This can limit the scope of a failure by stopping or isolating the respective unit where the failure occurred.

1.2.4 Reliability

The SPARC M12 is equipped with data protection, redundancy, dynamic degradation, and other such high-reliability technologies.

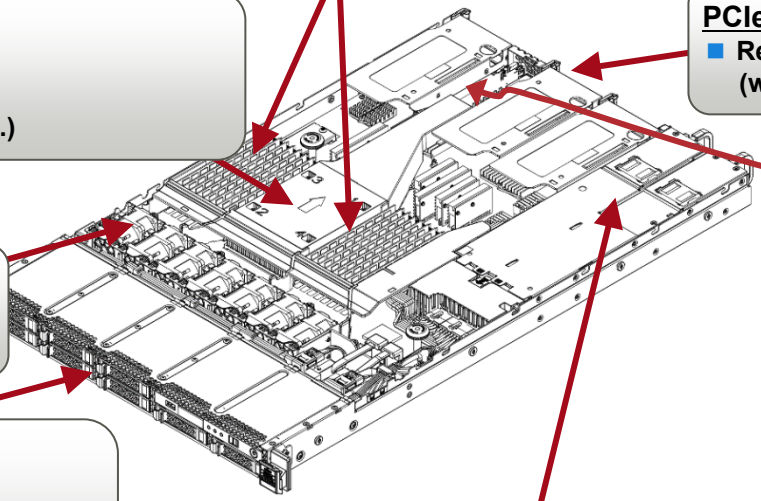
SPARC M12-1

Memory
- Memory mirror
- Memory patrol
- Dynamic degradation of memory (in units of pages)
- Extended ECC

Hardware as whole
- Dual power feed
- Redundant configuration of LAN (by Oracle Solaris functions)

CPU
- Dynamic degradation of CPU (in units of cache ways or CPU cores)
- ■ ● RAS functions (ECC, parity, retry, etc.)

PCIe card
- Redundant configuration (when in multipath configuration)



XSCF
- ■ ● Log collection
- ■ ● Monitoring function

Fan unit
- Redundant configuration
- ● Active replacement

Built-in storage
- Redundant configuration (when RAID (*1) is configured)
- ● Active replacement (when RAID (*1) is configured)

Power supply unit
- Redundant configuration
- ● Active replacement

Legend:
- ■ Technology minimizing shutdowns due to failure
- ● Technology minimizing maintenance shutdowns

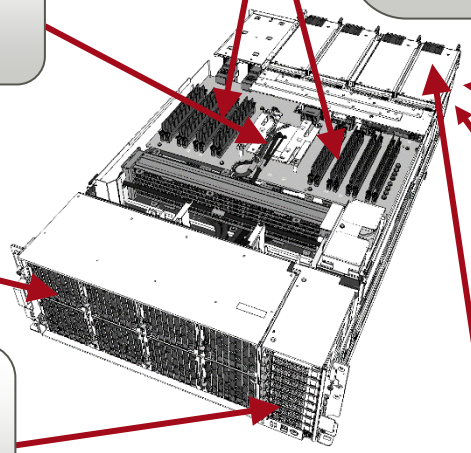
*1 For an HDD, it is when a software RAID/hardware RAID is configured. For an SSD, it is when a software RAID is configured.

SPARC M12-2/M12-2S

Memory
- Memory mirror
- Memory patrol
- Dynamic degradation of memory (in units of pages)
- Extended ECC

Hardware as whole
- Protection between CPUs by CRC (*1)
- Dual power feed
- Redundant configuration of pump
- XSCF unit, console path, and path between domain and XSCF: Redundant configuration (in SPARC M12-2S 2BB configuration or larger)
- Redundant configuration of LAN (by Oracle Solaris functions)
- Redundant configuration of SAS controller NEW
- ● Active addition and removal of SPARC M12-2S

CPU
- Dynamic degradation of CPU (in units of cache ways or CPU cores)
- ● RAS functions (ECC, parity, retry, etc.)



PCIe card
- Redundant configuration (when in multipath configuration)
- ● Active replacement

Fan unit
- Redundant configuration
- ● Active replacement

XSCF
- ● Log collection
- ● Monitoring function
- ● Active replacement NEW (XSCF unit in SPARC M12-2S 2BB configuration or larger)

Built-in storage
- Redundant configuration (when RAID (*2) is configured)
- ● Active replacement (when RAID (*2) is configured)

Power supply unit
- Redundant configuration
- ● Active replacement

*1 Stands for Cyclic Redundancy Check.
The function mainly checks for errors in serial interface access such as reading or writing.
*2 For an HDD, it is when a software RAID/hardware RAID is configured. For an SSD, it is when a software RAID is configured.

Legend:
- Technology minimizing shutdowns due to failure
- ● Technology minimizing maintenance shutdowns

The SPARC M12 supports active addition and removal of hardware and newly supports other methods, such as active replacement of the XSCF unit.

Active addition and removal of the SPARC M12-2S

- In a building block configuration connecting multiple SPARC M12-2S units, you can expand and reduce hardware without stopping the system.

Active replacement of the XSCF unit (in the SPARC M12-2S 2BB configuration or larger)

- In a building block configuration, you can replace the XSCF unit without stopping the system.

Redundant configuration of the SAS controller

- The SPARC M12-2/M12-2S further improves reliability by the duplication of disks via different SAS controllers with a software RAID.

1.2.5 Safety

You can configure a highly reliable and secure system environment
by using Oracle Solaris.
The SPARC64 XII processor is equipped with an encryption function.

Integrated security facility for system protection

- The SPARC M12 supports the security functions provided by Oracle Solaris, such as ZFS and verified boot.

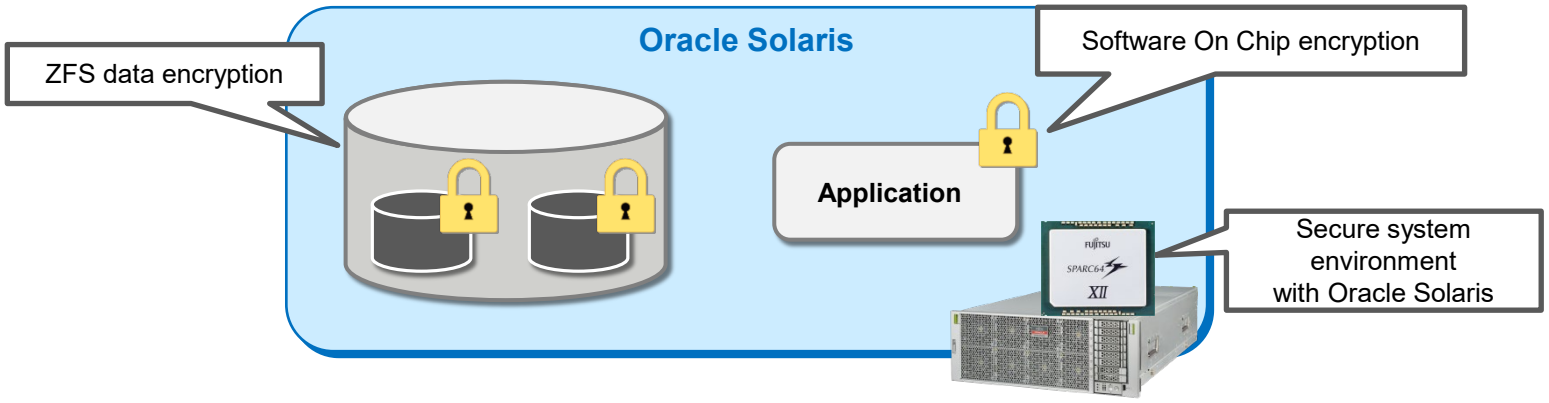
Data encryption function of the Oracle Solaris ZFS file system

- You can encrypt (encode) business data and file system metadata by using the encryption framework of Oracle Solaris.

Encryption function of Software On Chip (SWoC) (*1)

- The function is capable of high-speed encryption without using a dedicated adapter for encryption processing, so there is neither an additional cost nor performance degradation.

*1 The SPARC64 XII processor is equipped with SWoC.

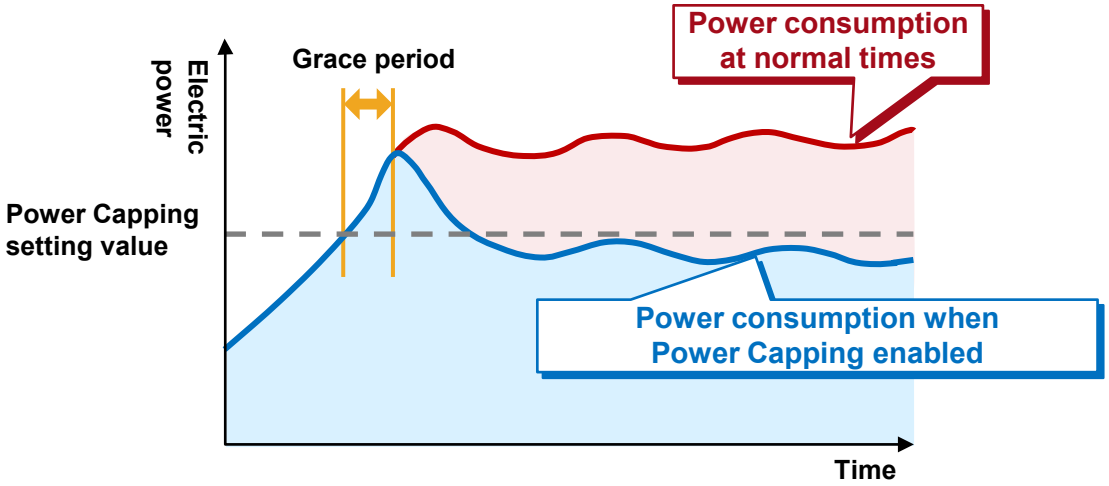


1.2.6 Ecology

The power savings of the device have been achieved with a new implementation technology. The SPARC M12 supports low power consumption to save energy through power-saving design and energy-saving management.

Power Capping function that sets an upper limit on power consumption

- The function can set an upper limit on system power consumption according to the customer's electric power conditions.
- After exceeding the set value and a certain period of time (grace period) has elapsed, the system is suppressed to the maximum power consumption, with the frequency automatically controlled.



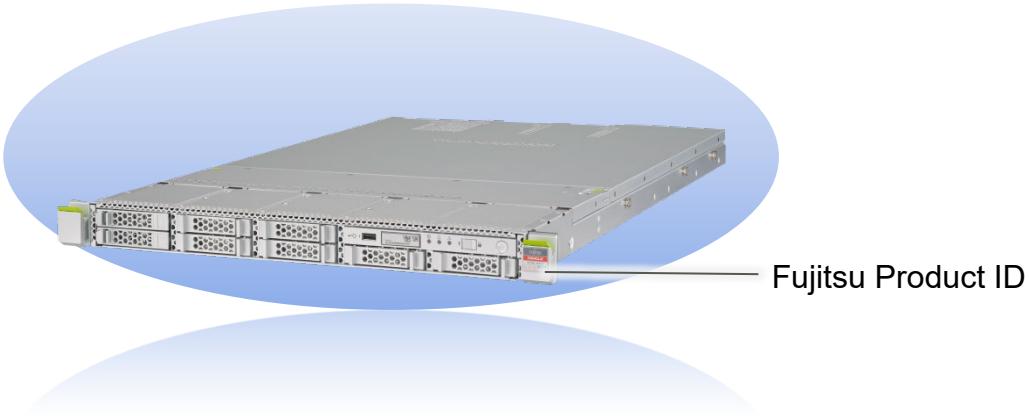
Power Saving function that suppresses the power consumption of hardware that has a low usage rate

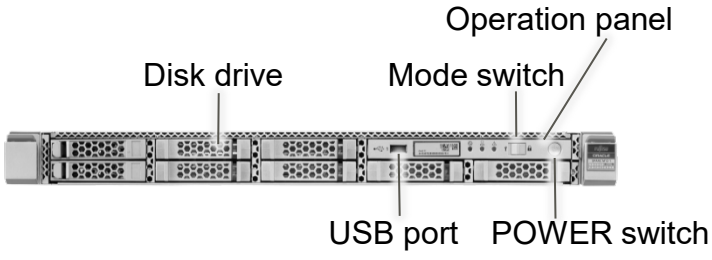
- The function suppresses operation of hardware that has a low usage rate and reduces power consumption by switching to power saving mode.

2. External Views of the Chassis

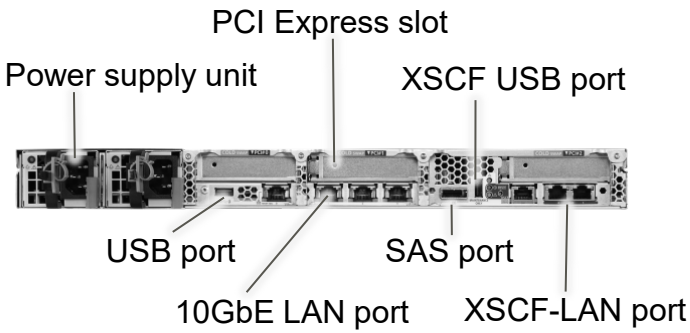
This chapter shows external views of the chassis for each model.

2.1 SPARC M12-1





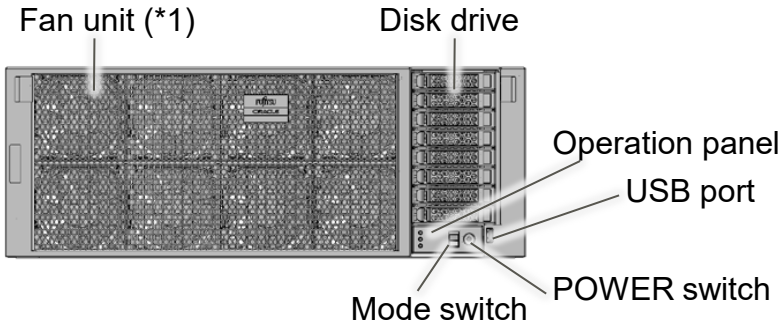
Front view



Rear view

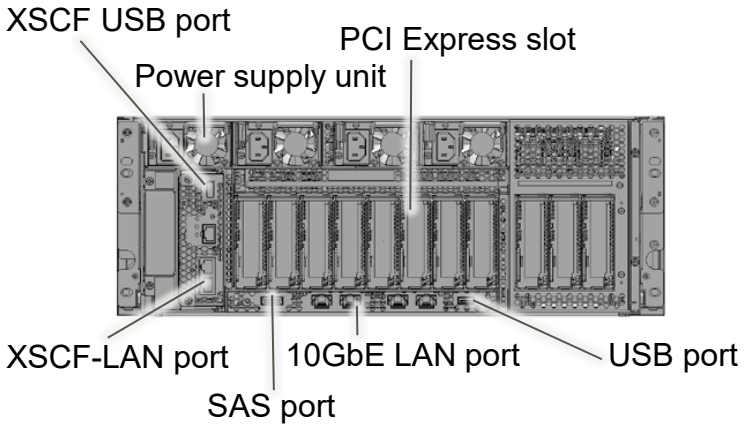
2.2 SPARC M12-2





*1 You can check the fan unit by removing the front cover.

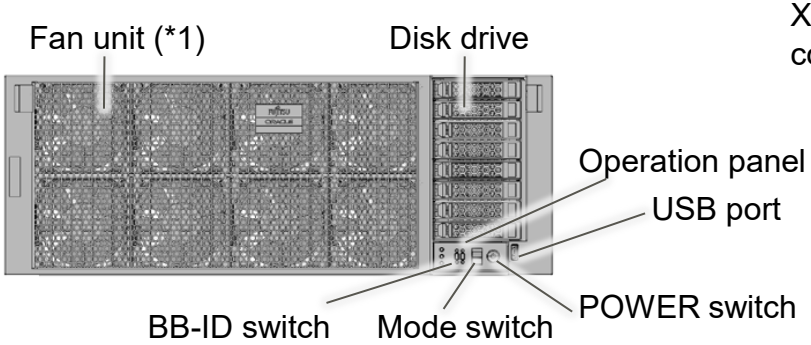
Front view

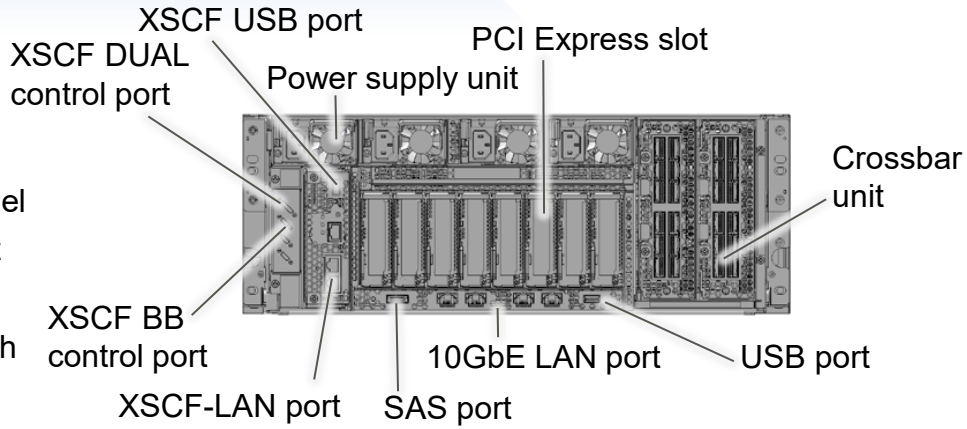


Rear view

2.3 SPARC M12-2S





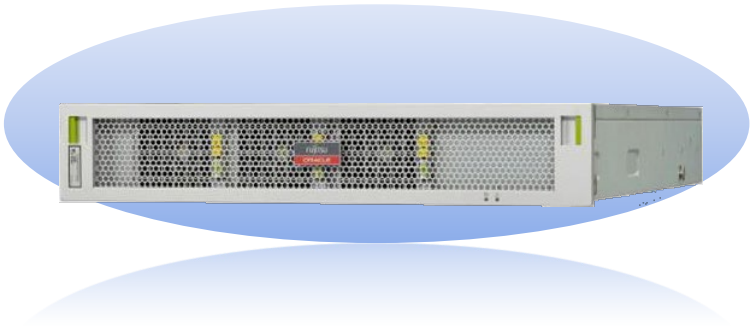


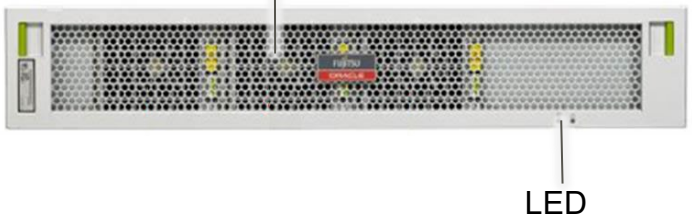
*1 You can check the fan unit by removing the front cover.

Front view

Rear view

2.4 PCI Expansion Unit (Expansion Option)





*1 You can check the fan unit by removing the front cover.

Front view



Rear view

3. System Specifications

This chapter describes the server and processor hardware specifications.
For details on firmware and software, see "Chapter 1 Understanding an Overview of the SPARC M12/M10" in the *Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 System Operation and Administration Guide*.

3.1 Server Specifications

Item			Fujitsu Product ID (Oracle Product ID)	SPARC M12-1				SPARC M12-2				SPARC M12-2S			
				SPNAAAA1xx (7118228)	SPNAAAA2xx (7602945)	SPNAAAA3xx (7605161)	SPNAAAA4xx (7605940)	SPNBBAA1xx (7117204)	SPNBBAA2xx (7602604)	SPNBBAA3xx (7605162)	SPNBBAA4xx (7605941)	SPNCCAA1xx (7117206)	SPNCCAA2xx (7602605)	SPNCCAA3xx (7605163)	SPNCCAA4xx (7605942)
XCP firmware version				3030 or later	3090 or later	4010 or later	4020 or later	3021 or later	3090 or later	4010 or later	4020 or later	3021 or later	3090 or later	4010 or later	4020 or later
Type				Rack mount (1U)				Rack mount (4U)							
Number of connected BBs				–				–				16 BBs, max.		4 BBs, max. (*1)	
Processor	Processor name			SPARC64 XII											
	Frequency			3.2 GHz				3.9 GHz				4.25 GHz			
	Number of CPUs			1				2, max.							
	Number of CPU cores			6				12 (per processor)							
	Number of threads			8, max. (per core)											
	Memory	Primary cache		128 KB (instruction 64 KB + data 64 KB) (per core)											
		Secondary cache		512 KB (per core)											
		Tertiary cache		16 MB				32 MB (per processor)							
Memory (*2)	Type			DDR4-DIMM											
	DIMM capacity/single unit			8/16/32/64 GB (*3)											
	Max. capacity			1 TB				2 TB	3 TB			2 TB	3 TB		
Built-in storage	Max. mounted quantity			8 units (SAS-HDD or SAS-SSD)											
	Max. capacity			9.6 TB											

*1 Units with the Fujitsu Product ID (Oracle Product ID) SPNCCAA3xx (7605163) or SPNCCAA4xx (7605942) can have BB connections only to SPARC M12-2S units with the same Product ID.
*2 The memory that can be mounted varies depending on the server product ID. See "■ Combinations of server product IDs and product IDs of memory that can be mounted" on the next page.
*3 To mount a 64 GB DIMM, see "Notes on Memory" in the *Fujitsu SPARC M12 Product Notes*.

3.1 Server Specifications (Continued)

■ Combinations of server product IDs and product IDs of memory that can be mounted

Fujitsu product ID (Oracle product ID)

Model	Server Product ID	Memory Product ID / DIMM Capacity
SPARC M12-1	SPNAAAA1xx (7118228)	SPNA2AA1x (7117217, 7117239) / 8 GB DIMM SPNA2BA1x (7117218, 7117241) / 16 GB DIMM SPNA2CA1x (7117220, 7117243) / 32 GB DIMM SPNA2DA1x (7117222, 7117245) / 64 GB DIMM (*1)
	SPNAAAA2xx (7602945) SPNAAAA3xx (7605161) SPNAAAA4xx (7605940)	SPNA2BA2x (7602608, 7602613) / 16 GB DIMM SPNA2CA2x (7602609, 7602614) / 32 GB DIMM SPNA2DA2x (7602610, 7602615) / 64 GB DIMM (*2)
	SPNAAAA4xx (7605940)	SPNE2BA3x(7634042, 7634043) / 16GB DIMM SPNE2CA3x(7634044, 7634045) / 32GB DIMM SPNA2DA2x (7602610, 7602615) / 64 GB DIMM (*2)
SPARC M12-2 SPARC M12-2S	SPNBBAA1xx (7117204) SPNCCAA1xx (7117206)	SPND2AB1x (7117217, 7117239) / 8 GB DIMM SPND2BB1x (7117218, 7117241) / 16 GB DIMM SPND2CB1x (7117220, 7117243) / 32 GB DIMM SPND2DB1x (7117222, 7117245) / 64 GB DIMM (*1)
	SPNBBAA2xx (7602604) SPNBBAA3xx (7605162) SPNBBAA4xx (7605941) SPNCCAA2xx (7602605) SPNCCAA3xx (7605163) SPNCCAA4xx (7605942)	SPND2BB2x (7602608, 7602613) / 16 GB DIMM SPND2CB2x (7602609, 7602614) / 32 GB DIMM SPND2DB2x (7602610, 7602615) / 64 GB DIMM (*2)
	SPNBBAA4xx (7605941) SPNCCAA4xx (7605942)	SPNE2BA3x(7634042, 7634043) / 16GB DIMM SPNE2CA3x(7634044, 7634045) / 32GB DIMM SPND2DB2x (7602610, 7602615) / 64 GB DIMM (*3)

*1 Within the range of memory product IDs listed in the table, you can mix DIMMs of different capacities, that is, a mixture of 8 GB/16 GB/32 GB DIMMs or 32 GB/64 GB DIMMs.

*2 Within the range of memory product IDs listed in the table, you can mix DIMMs of different capacities, that is, a mixture of 16 GB/32 GB DIMMs or 32 GB/64 GB DIMMs.

*3 If the mounted DIMMs fill all 24 memory slots per CPU, the DIMMs must have the same capacity. A mixture of DIMMs of different capacities is not allowed. If the mounted DIMMs do not fill all 24 memory slots per CPU, you can mix DIMMs of different capacities, that is, a mixture of 16 GB/32 GB DIMMs or 32 GB/64 GB DIMMs.

3.1 Server Specifications (Continued)

Item			SPARC M12-1	SPARC M12-2	SPARC M12-2S
I/O interface		LAN	4 ports (10GBASE-T) (*1)		
		SAS	1 port (6 Gb)		
		USB	2 ports (USB 3.0: Rear, USB 2.0: Front)		
PCIe slot	Built-in		PCI Express 3.0 (8 lanes): 3 slots	PCI Express 3.0 (8 lanes): 11 slots	PCI Express 3.0 (8 lanes): 8 slots
	Max. number of slots (number of connected PCI expansion units)	1 CPU mounted	33 slots (3 units) (*2)	51 slots (4 units) (*2)	48 slots (4 units) (*2)
		2 CPUs mounted	–	91 slots (8 units) (*2)	88 slots (8 units) (*2)
Redundant facility			Memory (*3), built-in disk drive (*4), SSD (*5), power supply unit, fan unit, PCIe card (*6)	Memory (*3), built-in disk drive (*4), SSD (*5), power supply unit, fan unit, PCIe card (*6), VLLC pump	Memory (*3), built-in disk drive (*4), SSD (*5), power supply unit, fan unit, PCIe card (*6), VLLC pump, XSCF unit (*7)
Active replacement facility			Built-in disk drive (*4), SSD (*5), power supply unit, fan unit	Built-in disk drive (*4), SSD (*5), power supply unit, fan unit, PCIe card (*6)	Built-in disk drive (*4), SSD (*5), power supply unit, fan unit, PCIe card (*6), XSCF unit (*7)
Supported OS			Oracle Solaris 10/11 or later (*8)		

*1 LAN ports are not available on the SPARC M12 with the Fujitsu Product ID (Oracle Product ID) SPNAAAA3xx (7605161), SPNBBAA3xx (7605162), or SPNCCAA3xx (7105163).
*2 If the OS versions on the control domain, root domains, and I/O domains are all Oracle Solaris 11 and the SPARC M12-2/M12-2S firmware version is XCP 3040 or later. For other combinations, see the following table.

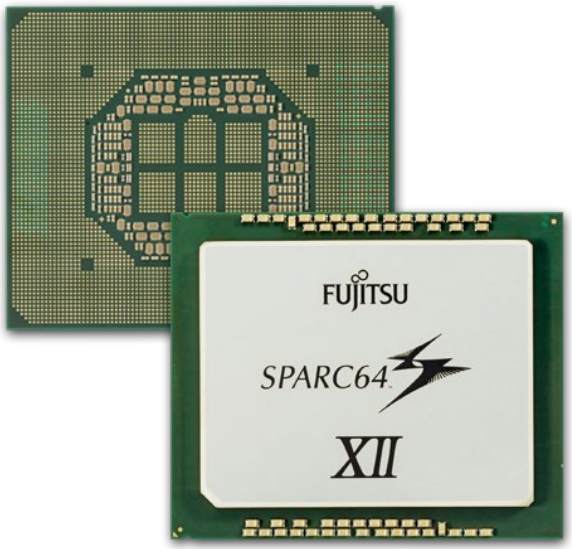
OS Versions on Control, Root, and I/O Domains	CPU(s) Mounted	SPARC M12-1	SPARC M12-2	SPARC M12-2S
If they are all Oracle Solaris 11 and the SPARC M12-2/M12-2S firmware version is XCP 3030 or earlier	1 CPU	33 slots (3 units)	41 slots (3 units)	38 slots (3 units)
	2 CPUs	–	71 slots (6 units)	58 slots (5 units)
If any of them is Oracle Solaris 10	1 CPU	23 slots (2 units)	31 slots (2 units)	28 slots (2 units)
	2 CPUs	–	71 slots (6 units)	58 slots (5 units)

*3 When memory is mirrored
*4 When the disk is mirrored by software or the built-in hardware RAID
*5 When the disk is mirrored by software
*6 In a multipath configuration (Replacement may not be possible depending on the card type.)
*7 In a configuration of two or more building blocks
*8 For details on the supported OS, see the *Fujitsu SPARC M12 Product Notes*.

3.2 Processor Specifications

Item		SPARC64 XII
Operating frequency		4.25 GHz, maximum
Technology		20 nm
Number of CPU cores		12, maximum
Number of threads		8
SIMD		2
Primary cache memory		64 KB x 2
Secondary cache memory		512 KB
Tertiary cache memory		32 MB, maximum
Memory connection mode		Directly connected to DIMM
DIMM type		DDR4
DIMM speed		2,400 MHz / 1,866 MHz (*1)
I/O bandwidth		64 GB/s (bidirectional)
PCIe		PCI Express 3.0
Number of PCIe ports		4
DVFS		Supported
CPU core degradation		Supported
DIMM degradation		Supported
FTL lane degradation		Supported
Power supply noise measure		Operation-rate modulation, frequency modulation
SWoC	SIMD (Single Instruction Multiple Data)	Can process up to 64 values of 4-bit data simultaneously per core
	Decimal floating-point arithmetic unit mounted	Conforms to IEEE 754-2008, standard for decimal floating-point arithmetic operations
	Encryption computation unit mounted	Supports AES, DES, 3DES, DH, DSA, ECC, RSA, and SHA

*1 24 memory slots per processor, 24 DIMMs mounted



3.3 PCI Expansion Unit Specifications

Item	PCI Expansion Unit
Height	2U
Number of PCIe slots	11
Redundant facility	Power supply unit, fan unit
Active replacement facility	Power supply unit, fan unit, PCIe card (*1), link board (*2)

*1 Active replacement may not be possible depending on the PCIe card type.
*2 You can replace the board after disconnecting the link card connected to the PCI expansion unit or the physical partition containing this link card. Use PCI Hot Plug to disconnect the card, or dynamic reconfiguration (DR) to disconnect the physical partition.

4. Document Map Reference Guide (by Phase/Purpose)

This chapter shows the reference manuals for each work item from SPARC M12 installation to operation/administration and system expansion.

For a list of the manuals and their formal names, see "5. Document List."

Document Map

Planning	Installation	Operation	Expansion
Quick Guide (this document)			
Getting Started Guide			
Important Legal and Safety Information			
Safety and Compliance Guide			
Software License Conditions			
Security Guide			
Common Installation Planning Manual			
Product Notes			
Installation Guide			Installation Guide
PCI Card Installation Guide			PCI Card Installation Guide
System Operation and Administration Guide			
Domain Configuration Guide			
RCIL User Guide			
XSCF Reference Manual			
XSCF MIB and Trap Lists			
External USB-DVD Drive User Guide			
Service Manual			

4.1 Planning

a. Understanding an overview

- Check the SPARC M12 overview.
  - ▶ Quick Guide (this document)

b. Installation planning

- Check the specifications and software license conditions.
  - ▶ Getting Started Guide
  - ▶ Important Legal and Safety Information
  - ▶ Safety and Compliance Guide
  - ▶ Security Guide
  - ▶ Software License Conditions
- Before installing the system, confirm that the installation location meets the requirements.
  - ▶ Common Installation Planning Manual
  - ▶ Installation Guide

c. System design

- During system design, confirm the flow for system settings and system configuration.
  - ▶ Installation Guide
  - ▶ PCI Card Installation Guide
  - ▶ System Operation and Administration Guide
  - ▶ Domain Configuration Guide
  - ▶ Product Notes

4.2 Installation

a. Installation and connection

- Install and connect servers and peripheral devices according to the system configuration.

▶ Installation Guide ▶ PCI Card Installation Guide

b. Initial settings

- Before starting the system, perform the initial setup of the eXtended System Control Facility (XSCF).
- Configure the power control and other settings affecting the entire system.
- Make settings to improve reliability by using memory mirroring and the hardware RAID function.

▶ System Operation and Administration Guide ▶ Product Notes

c. System configuration

- If you are not going to use the preinstalled Oracle Solaris as is, install Oracle Solaris.
- You can configure a virtual environment by dividing the system into physical partitions and logical domains.

▶ Domain Configuration Guide

4.3 Operation

a. Daily management

- You need to understand the basic operation/administration operations for daily management work such as backup.
  The basic operations include logging in/out from the management console and starting/stopping the system.

  ▶ System Operation and Administration Guide

b. Updating firmware/software

- Update firmware, Oracle VM Server for SPARC, and Oracle Solaris to the latest versions.
  The updates require a service contract with Fujitsu's Support Desk.

  ▶ System Operation and Administration Guide

c. Failure diagnosis/unit replacement

- If an error message appears on the console or the CHECK LED on the server or a peripheral device goes on, diagnose whether a failure has occurred.
- After a failure occurs, replace the faulty unit. The maintenance method varies with the unit. A service engineer performs the maintenance work.

  ▶ Service Manual

4.4 Expansion

a. Expanding with a PCI expansion unit/optional unit

- You can expand the number of PCIe slots by using the PCI expansion unit.
- You can expand the system by adding an optional unit, such as a memory module or PCIe card.

▶ Installation Guide

▶ PCI Card Installation Guide

▶ Service Manual

b. Expanding resources

- You can add CPUs in units of one CPU core according to load increases by using the CPU Activation function.

▶ System Operation and Administration Guide

c. Expanding/Reducing the system with a building block configuration

- In the building block method, you can flexibly expand/downscale the system by expanding/reducing the SPARC M12-2S.

▶ Installation Guide

▶ System Operation and Administration Guide

▶ Domain Configuration Guide

▶ Service Manual

d. Changing the resource configuration

- You can change the virtual CPU, virtual memory, and virtual I/O configuration by using the dynamic reconfiguration function of Oracle VM Server for SPARC.

▶ Domain Configuration Guide

5. Document List

This chapter shows a list of documents related to the SPARC M12.

- Global site
  https://global.fujitsu/en-global/documents?tags=manual&q=M12&pid=002161
- Japanese site
  https://global.fujitsu/ja-jp/documents?q=M12&pid=002161

SPARC M12 Document List 1/3

- *Fujitsu SPARC M12 Product Notes*

  Describes the important and latest information regarding hardware, software, and documents. Be sure to read this document before installation.

- *Fujitsu SPARC M12 Quick Guide* (this document)

  Provides an overview, including the system specifications and system configuration, and describes the manuals used with each work item. The manuals cover the work from SPARC M12 installation to operation/administration and system expansion. Check this document before reading the other documents.

- *Fujitsu SPARC M12 Getting Started Guide*

  Describes notes regarding export control regulations and how to reference other documents.

- *Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Important Legal and Safety Information*

  Describes software license agreements, user license agreements, and safety precautions.
  Check this document before opening a software product package or installing the server.

- *Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Safety and Compliance Guide*

  Describes notes on server installation. Check this document before installing the server.

- *Software License Conditions for Fujitsu SPARC M12 and Fujitsu M10/SPARC M10*

  Describes the software license conditions used.

- *Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Security Guide*

  Describes security guidelines for using the server.

- *Fujitsu SPARC Servers/SPARC Enterprise/PRIMEQUEST Common Installation Planning Manual*

  Describes the requirements and concepts pertaining to installation planning and facility planning for the server.

SPARC M12 Document List 2/3

Fujitsu SPARC M12-1 Installation Guide

Describes the prerequisite environmental conditions for SPARC M12-1 installation, the installation and initial setting procedures used during installation, and the procedures for expansion/reduction after operation has begun.

Fujitsu SPARC M12-2 Installation Guide

Describes the prerequisite environmental conditions for SPARC M12-2 installation, the installation and initial setting procedures used during installation, and the procedures for expansion/reduction after operation has begun.

Fujitsu SPARC M12-2S Installation Guide

Describes the prerequisite environmental conditions for SPARC M12-2S installation, the installation and initial setting procedures used during installation, and the procedures for expansion/reduction after operation has begun.

Fujitsu SPARC M12 PCI Card Installation Guide

Describes the mounting rules for PCI cards mounted in the system.

Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 System Operation and Administration Guide

Describes items related to the management and maintenance work after operation has begun.
For domain settings, see the *Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Domain Configuration Guide*. For the maintenance procedures for each field replaceable unit (FRU), see the *Fujitsu SPARC M12-2/M12-2S Service Manual* or the *PCI Expansion Unit for Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Service Manual*.

Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Domain Configuration Guide

Describes the knowledge and procedures required for configuring and managing physical partitions and logical domains, among system operation and maintenance work.

Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 RCIL User Guide

Describes the Remote Cabinet Interface over LAN (RCIL) function, used to manage the power of I/O devices such as the Fujitsu storage system ETERNUS from the SPARC M12/M10.

Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 XSCF Reference Manual

Describes how to use the commands provided with the mounted XSCF firmware.

SPARC M12 Document List 3/3

Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 XSCF MIB and Trap Lists

Describes, in lists, the Management Information Base (MIB) values and MIB Trap values used with the system.

Fujitsu SPARC M12-1 Service Manual

Describes the information to be checked in system maintenance of the SPARC M12-1 and the maintenance procedures for each field replaceable unit (FRU).

Fujitsu SPARC M12-2/M12-2S Service Manual

Describes the information to be checked in system maintenance of the SPARC M12-2/M12-2S and the maintenance procedures for each field replaceable unit (FRU).

Crossbar Box for Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Service Manual

Describes the information to be checked in system maintenance of the crossbar box and the maintenance procedures for each field replaceable unit (FRU).

PCI Expansion Unit for Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Service Manual

Describes the information to be checked in system maintenance of the PCI expansion unit and the maintenance procedures for each field replaceable unit (FRU).

Fujitsu SPARC M12 and Fujitsu M10/SPARC M10 Glossary

Lists and explains the terms used in these documents.

Safe Backup by Regularly Cleaning and Replacing Tape Units and Media!

Describes tape media management, the installation environment, and cleaning operations, all of which tend to be overlooked after a backup environment is configured.

External USB-DVD Drive User Guide

Describes how to use a USB-DVD drive connected to the SPARC M12/M10.