

SPARC T7-4 Server Installation Guide



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Using This Documentation

- **Overview** – Provides specifications and describes how to install and power on Oracle's SPARC T7-4 server for the first time
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience installing and configuring data center equipment

Product Documentation Library

Documentation and resources for this product and related products are available at <http://www.oracle.com/goto/t7-4/docs>.

Feedback

Provide feedback about this documentation at <http://www.oracle.com/goto/docfeedback>.

Understanding the Server

These topics list the installation tasks, provide an overview of the SPARC T7-4 server, and highlight the key components.

- [“Installation Task Overview” on page 11](#)
- [“Server Overview” on page 12](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)

Related Information

- [“Installing the Server” on page 29](#)
- [“Connecting Cables” on page 51](#)
- [“Powering On the Server for the First Time” on page 65](#)

Installation Task Overview

Perform these tasks to install and configure the server.

Step	Description	Links
1.	Review the product notes for any late-breaking news about the server.	SPARC T7 Series Servers Product Notes
2.	Review the server features, specifications, and site requirements.	“Server Overview” on page 12 “Confirming Specifications” on page 17
3.	Confirm that you received all of the items you ordered.	“Shipping Kit” on page 23
4.	Learn the server features, controls, and LEDs required for installation.	“Front Panel Components” on page 14 “Rear Panel Components” on page 15
5.	Take safety and ESD precautions and assemble the required tools.	“Handling Precautions” on page 25

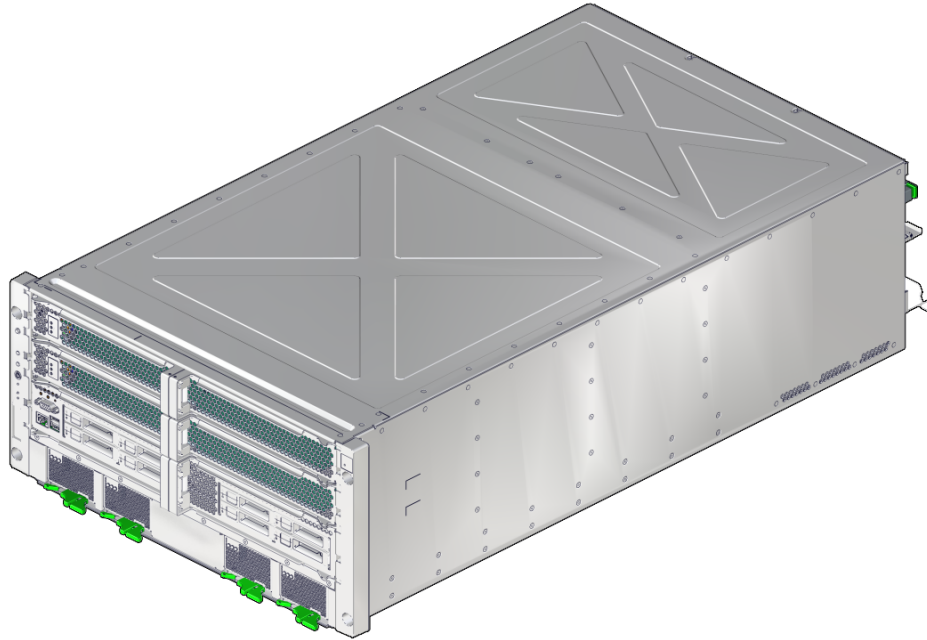
Step	Description	Links
		“ESD Precautions” on page 25
		“Tools Needed for Installation” on page 26
6.	Install the server into a rack.	“Installing the Server” on page 29
7.	Attach data and management cables to the server.	“Connecting Cables” on page 51
8.	Connect the power cords to the server, configure the Oracle ILOM SP, power on the server for the first time, and set up the operating system.	“Powering On the Server for the First Time” on page 65

Related Information

- *SPARC T7 Series Servers Product Notes*
- *SPARC T7-4 Server Safety and Compliance Guide*
- *SPARC T7 Series Servers Administration Guide*
- *SPARC T7-4 Server Service Manual*

Server Overview

This topic provides a high-level introduction to the main components and capabilities of the server.



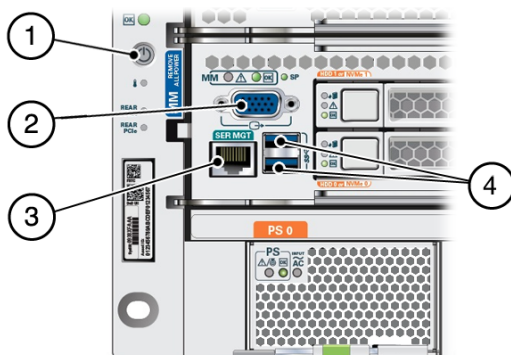
Component	Description
Chassis	Rack-mountable server with a 5RU form-factor.
CPU	4x SPARC M7, 16-core chip multiprocessor (CMP) with 8 threads per core.
Memory	64 DDR4 DIMM slots (capacities: 16 GB or 32 GB)
I/O expansion	Sixteen PCIe Gen3 card slots: <ul style="list-style-type: none"> ■ Eight PCIe Gen3 x8 electrical interface ■ Eight PCIe Gen3 x16 electrical interface
Storage devices	For internal storage, the server provides: <ul style="list-style-type: none"> ■ Eight 2.5-inch hard drives (front panel) ■ An internal eUSB drive on the rear I/O module.
Ports	Four external USB 3.0 ports (2 front, 2 rear)
Video ports	Two high-density HD-15 video ports (1 front, 1 rear)
Management ports	<ul style="list-style-type: none"> ■ Two RJ-45 SER MGT ports (1 front, 1 rear) ■ One 10/100 NET MGT port (rear)
Network ports	Four 10GbE, 100/1000/10000 Mbps (rear)
Power supplies	Four hot-swappable AC 3000W redundant (2 + 2). Accessed on the front panel
Fan modules	Five (N+1) hot-swappable, redundant fan modules at chassis rear

Component	Description
SP	Oracle Integrated Lights Out Manager (Oracle ILOM)

Related Information

- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)
- [SPARC T7-4 Server Service Manual](#)
- [Oracle ILOM documentation](#)

Front Panel Components



No.	Description
1	Power button
2	VGA port
3	SER MGT port
4	USB 3.0 ports

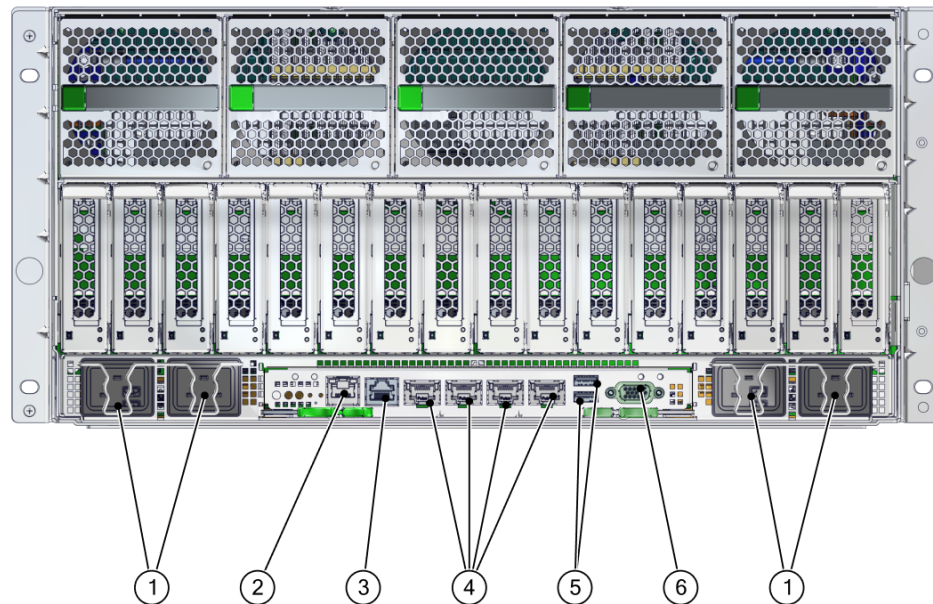
Related Information

- [“Cabling Requirements” on page 51](#)

- [“Server Overview” on page 12](#)
- [“Rear Panel Components” on page 15](#)

Rear Panel Components

Note - You must follow the proper sequence when connecting cables to the server. Do not connect the power cords until all data cables have been connected.



No.	Description	Links
1	Power supply unit AC inputs (4)	
2	NET MGT RJ-45 network port	“NET MGT Port” on page 55
3	SER MGT RJ-45 serial port	“SER MGT Ports” on page 54
4	Network 10GbE ports: NET 0—NET 3 (4)	“Ethernet Ports” on page 56
5	USB 3.0 ports (2)	“USB Ports” on page 53

No.	Description	Links
6	VGA port	“VGA Port” on page 57

Related Information

- [“Front Panel Components” on page 14](#)
- [“Cabling Requirements” on page 51](#)
- [“Installing the CMA \(Optional\)” on page 41](#)
- [“Secure Cables Using the CMA” on page 61](#)

Confirming Specifications

These topics provide the technical information and airflow precautions you need to install the server.

- [“Physical Specifications” on page 17](#)
- [“Electrical Specifications” on page 18](#)
- [“Environmental Requirements” on page 19](#)
- [“Airflow Precautions” on page 21](#)

Related Information

- [“Server Overview” on page 12](#)
- [“Shipping Kit” on page 23](#)
- [“Identifying Ports” on page 53](#)

Physical Specifications

Description	Metric	U.S.
Rack units	5 RU	5 RU
Height	215 mm	8.5 in.
Width	445 mm	17.5 in.
Depth	835 mm	32.9 in.
Weight (approximations)		
Fully populated (Includes two processor modules, 64 DIMMs, 8 disk drives, 16 PCIe cards. Does not include rackmount kit or system packaging.)	89.6 kg	197 lb
Half populated	83.5 kg	184.1 lb

Description	Metric	U.S.
(Includes one processor module, one processor filler module, 32 DIMMs, 8 disk drives, 16 PCIe cards. Does not include rackmount kit or system packaging.)		
Minimum service clearance (front)	914.4 mm	36 in.
Minimum service clearance (rear)	914.4 mm	36 in.
Minimum airflow clearance (front)	50.8 mm	2 in.
Minimum airflow clearance (rear)	76.2 mm	3 in.
Shipping carton height	571.5 mm	22.50 in.
Shipping carton width	600 mm	23.62 in.
Shipping carton length	987.3 mm	38.87 in.

Related Information

- [“Server Overview” on page 12](#)
- [“Handling Precautions” on page 25](#)
- [“Installing the Server” on page 29](#)
- [“Electrical Specifications” on page 18](#)
- [“Environmental Requirements” on page 19](#)
- [“Airflow Precautions” on page 21](#)

Electrical Specifications

Use these specifications only as a general planning guide. To determine power values based on expected workloads, use the SPARC T7-4 power calculator at:

<http://www.oracle.com/goto/powercalculators/>

Description	Value
Operating input range	200 to 240 VAC, 50-60 Hz
Maximum operating input current at 200 VAC (per cord)	16 A [†]
Maximum operating input current at 200 VAC (all inputs)	22.9 A
Maximum operating input power at 200 VAC	4498 W
Maximum heat dissipation	15,348 BTU/hr

Description	Value
	(16,193 KJ/hr)
Maximum standby power	105 W
Maximum server configuration specification under nominal temperature and voltage conditions:	
(Four 3.6 GHz T5 Processors, with sixty-four 32 GB DDR4 DIMMS, 8 HDD and 16 I/O cards)	
Idle input power	2124 W
Peak AC input power (running SpecJBB)	4386 W
Minimum server configuration specification under nominal temperature and voltage conditions	
(Two 3.6 GHz T5 Processors, with 32x 16GB DDR4 DIMMS, no HDD and no I/O cards)	
Idle input power	1023 W
Peak AC input power (running SpecJBB)	1915 W

[†] Actual amperage draw may exceed rating by no more than 10%.

Note - The maximum operating input current values are based on the formula $P / (V * 0.90)$, where P = maximum operating input power and V = input voltage. For example: $620W / (100V * 0.90) = 6.89A$. You can use this formula to calculate the maximum operating current at your input voltage.



Caution - Use only the power cords provided with the server.

Related Information

- [“Powering On the Server for the First Time” on page 65](#)
- [“Physical Specifications” on page 17](#)
- [“Environmental Requirements” on page 19](#)
- [“Airflow Precautions” on page 21](#)

Environmental Requirements

This topic includes these specifications:

- Temperature, humidity, and elevation
- Shock and vibration
- Acoustic

TABLE 1 Temperature, Humidity, and Elevation Specifications

Description	Operating	U.S.	Nonoperating	U.S.	Notes
	Metric		Metric		
Temperature (maximum)	5° to 35° C at 900m	41° to 95° F at 0 to 3000 ft	-40° to 65° C at 900m	-40° to 149° F at 0 to 3000 ft	Decrease in maximum temperature; above 3000 ft. (900m), 1.8°F/1000 ft (1° C/300m)
Relative humidity	10 to 90% at 27° C	10 to 90% at 81° F	Up to 93% at 38° C	Up to 93% at 100° F	Maximum wet bulb, noncondensing
Altitude	0 to 3000 m at 40° C	0 to 9840 ft at 95° F	Up to 12,000 m	Up to 40,000 ft	In China markets, regulations may limit installations to a maximum operating altitude of 2000m.

TABLE 2 Shock and Vibration Specifications

Description	Operating	Notes
Shock	3 G, 11 ms	Half-sine
Vibration (vertical)	0.15 G	5 to 500 HZ swept-sine
Vibration (horizontal)	0.10 G	

TABLE 3 Acoustic Specifications

Description	Operating at Idle	Operating at Peak Power
Sound Power Level - LwAd (1 B = 10 dB)	7.8 B	9.4 B
Sound Pressure Level - LpAm (energy average of 4 bystander positions)	61.8 dBA	79.7 dBA

Related Information

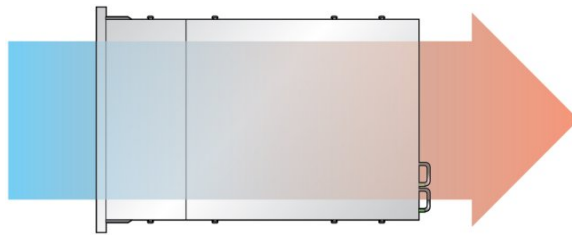
- [SPARC T7-4 Server Safety and Compliance Guide](#)
- “Physical Specifications” on page 17
- “Electrical Specifications” on page 18
- “Airflow Precautions” on page 21

Airflow Precautions



Caution - Proper airflow is essential for keeping the server's internal temperatures within a safe operating range.

Air flows from the front to the rear of the server.



Follow these guidelines to ensure unrestricted airflow in the server:

- Adhere to the minimum airflow clearance specifications. See [“Physical Specifications” on page 17](#).
- Install the server so the front faces the cool aisle and the rear faces the warm aisle.
- Do not direct warm air into the server.
- Prevent recirculation of air within a rack or cabinet.
- When servicing server internal components, ensure that air ducts and baffles are properly installed.
- Route cables so they do not interfere with airflow.

Related Information

- [“Rack Cautions” on page 30](#)
- [“Physical Specifications” on page 17](#)
- [“Electrical Specifications” on page 18](#)
- [“Environmental Requirements” on page 19](#)

Preparing for Installation

These topics detail the precautions to follow, the tools to assemble, and the tasks to perform prior to installing the server.

Step	Description	Links
1.	Confirm that you have received all the items you ordered for the type of rackmount kit you will be using in your installation.	“Shipping Kit” on page 23
2.	Review ESD and safety precautions.	“Handling Precautions” on page 25 “ESD Precautions” on page 25
3.	Verify that you have the correct tools.	“Tools Needed for Installation” on page 26
4.	Prepare the server for installation.	“Prepare the Server” on page 27

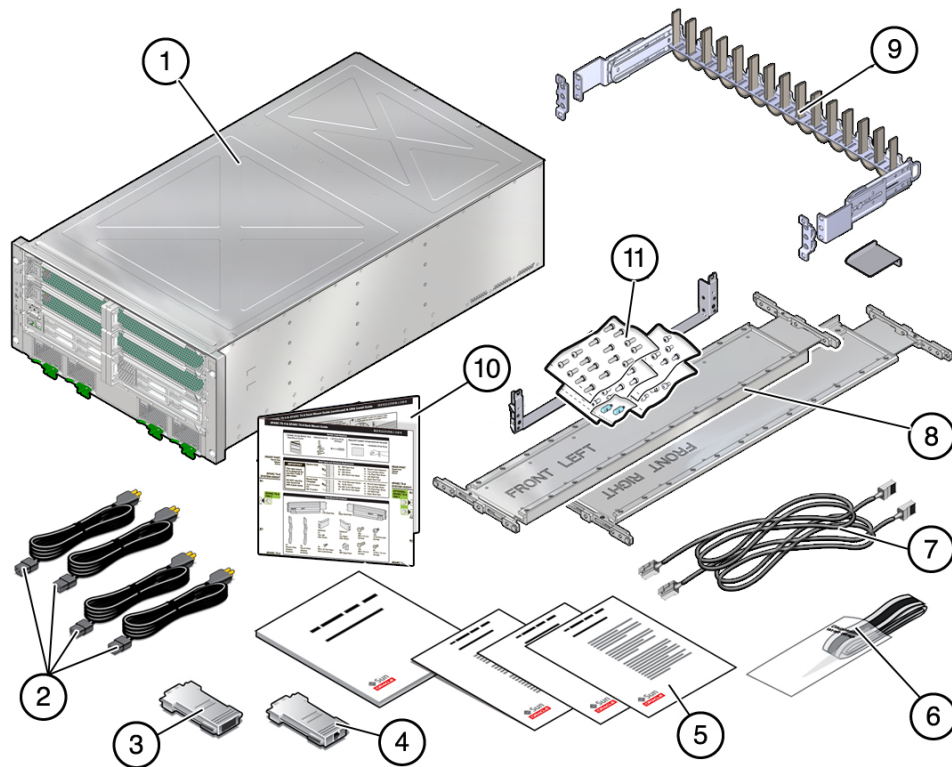
Related Information

- [“Installing the Server” on page 29](#)
- [“Connecting Cables” on page 51](#)
- [“Powering On the Server for the First Time” on page 65](#)

Shipping Kit

Verify that you have received all of the components that ship with your server.

Note - When you receive the server, place it in the environment where you will install it. Leave it in its shipping crate at its final destination for 24 hours. This resting period prevents thermal shock and condensation.



No.	Description
1	Server
2	AC power cords (4)
3	RJ-45 to DB-25 crossover adapter
4	RJ-45 to DB-9 crossover adapter
5	Print document kit
6	Antistatic wrist strap
7	Ethernet cables (2)
8	Rackmounting kit
9	CMA
10	Rack Buddy template
11	Fasteners

Related Information

- [“Server Overview” on page 12](#)
- [“Installing the Rackmount Kit” on page 33](#)
- [“CMA Kit Overview” on page 42](#)

Handling Precautions



Caution - Deploy the antitilt bar on the equipment rack before beginning an installation.



Caution - Always load equipment into a rack from the bottom up so that it will not become top-heavy and tip over.



Caution - Do not attempt to move the server alone without a lift. For a one-person installation, the main components must be removed, and a lift must be used. For a two-person installation, the main components must be removed, and a lift is optional.



Caution - Always communicate your intentions clearly before, during, and after each step of the rackmounting procedure to minimize confusion.

Related Information

- [“Physical Specifications” on page 17](#)
- [“ESD Precautions” on page 25](#)
- [“Installing the Server” on page 29](#)
- *SPARC T7-4 Server Getting Started Guide*

ESD Precautions

Electronic equipment is susceptible to damage by static electricity. Use a grounded antistatic wriststrap, footstrap, or equivalent safety equipment to prevent electrostatic damage when you install or service the server.



Caution - To protect electronic components from electrostatic damage, which can permanently disable the server or require repair by service technicians, place components on an antistatic surface, such as an antistatic discharge mat, an antistatic bag, or a disposable antistatic mat. Wear an antistatic grounding strap connected to a metal surface on the chassis when you work on server components.

Related Information

- [“Handling Precautions” on page 25](#)
- [“Tools Needed for Installation” on page 26](#)
- [“Rack Cautions” on page 30](#)

Tools Needed for Installation

- Torx T30 screwdriver
- Long No. 2 Phillips screwdriver
- Cutters or heavy duty scissors
- Marking pen or tape
- ESD mat and grounding strap
- Hydraulic or mechanical lift (optional for two-person installation)

In addition, you must provide a system console device, such as one of the following:

- ASCII terminal
- Workstation
- Terminal server (optional to capture initial boot output)
- Patch panel connected to a terminal server

Related Information

- [“Handling Precautions” on page 25](#)
- [“ESD Precautions” on page 25](#)
- [SPARC T7-4 Server Service Manual](#)

▼ Prepare the Server



Caution - Do not attempt to move the server alone without a lift. For a one-person installation, the components must be removed and a lift must be used. For a two-person installation, the main components must be removed, and a lift is optional.

1. **Remove the server from the box.**
See [“Shipping Kit” on page 23](#).
2. **Remove all of the processor modules, the main module, the power supplies, and the fan modules from the server.**
Refer to the *SPARC T7-4 Server Service Manual* for detailed instructions.
3. **Determine your next step:**
 - For a one-person installation, place the server on a mechanical lift.
 - For a two-person installation, place the server on a mechanical lift if one is available.
4. **Remove the PCIe card carriers if there are PCIe cards that need to be installed.**
Refer to the service manual for detailed instructions.
5. **Install the server in the rack.**
See [“Installing the Server” on page 29](#).

Related Information

- [“Physical Specifications” on page 17](#)
- [“Handling Precautions” on page 25](#)
- [“ESD Precautions” on page 25](#)
- [“Tools Needed for Installation” on page 26](#)

Installing the Server

These topics describe how to install the server into a rack equipped with square mounting holes. If you are installing the server into a rack equipped with round mounting holes, see [“Determine Correct Rackmount Hardware” on page 35](#).

Note - If the rackmount kit came with its own instructions, use those instructions instead of the instructions in this chapter. After performing the server installation, proceed to [“Powering On the Server for the First Time” on page 65](#) for first-time power on.

Step	Description	Links
1.	Ensure that your rack is compatible with the server requirements.	“Rack Compatibility” on page 30
2.	Determine the correct rackmounting hardware and install the hardware.	“Determine Correct Rackmount Hardware” on page 35 “Mark the Rackmounting Location” on page 36 “Install the Shelf Rails” on page 37
3.	Install the server in the rack.	“Install the Server” on page 39
4.	(Optional) Install the CMA.	“Installing the CMA (Optional)” on page 41
5.	(Optional) If you are installing the server into a rack that will be shipped to another location, install the shipping brace assembly.	“Installing the Shipping Brace Assembly (Optional)” on page 45
6.	Review cabling requirements and port information. Attach data and management cables to the server.	“Connecting Cables” on page 51
7.	Configure the Oracle ILOM SP and power on the server for the first time.	“Powering On the Server for the First Time” on page 65

Related Information

- [“Understanding the Server” on page 11](#)
- [“Tools Needed for Installation” on page 26](#)
- [“Connecting Cables” on page 51](#)

Rack Compatibility

The SPARC T7-4 server, and the associated rackmounting hardware kit, are compatible with Oracle's Sun Rack II 1242 racks only. The server has not been tested in non-Oracle racks.

Note - The server was designed to be installed into racks with a 1200-mm depth. 1000-mm deep racks do not provide enough space to service components, or to route and secure the server power cords and data cables safely with the CMA installed.

If you are installing the server in a non-Oracle rack, ensure that the non-Oracle rack meets the server installation requirements, which include (but are not limited to) the following:

- The server must be placed on a rack shelf in the non-Oracle rack.
- The rack shelf must be capable of supporting a minimum weight of 200 lbs (91 kg).
- The rack shelf must be designed for the rack being used.

Obtain the rack shelf from the rack vendor.

Note - Installing the server in non-Oracle racks using the included rackmounting hardware kit is not supported.

Related Information

- [“Physical Specifications” on page 17](#)
- [“Tools Needed for Installation” on page 26](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)
- [“Installing the Rackmount Kit” on page 33](#)

Rack Cautions



Caution - Equipment Loading: Always load equipment into a rack from the bottom up so that the rack does not become top-heavy and tip over. Deploy the rack's antitilt bar to prevent the rack from tipping during equipment installation.



Caution - Elevated Operating Ambient Temperature: If the server is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment might be greater than room ambient temperature. Therefore, install the equipment only in an environment compatible with the maximum ambient temperature (T_{ma}) specified for the server.



Caution - Reduced Air Flow: Install the equipment in a rack so that the amount of air flow is adequate for the safe operation of the equipment.



Caution - Mechanical Loading: Mount the equipment in the rack so that the weight is distributed evenly. A hazardous condition can exist with uneven mechanical loading.



Caution - Circuit Overloading: Do not overload the power supply circuits. Before connecting the server to the supply circuit, review the equipment nameplate power ratings and consider the effect that circuit overloading might have on overcurrent protection and supply wiring.



Caution - Reliable Grounding: Maintain reliable grounding of rackmounted equipment. Give particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).



Caution - Do not use slide rail mounted equipment as a shelf or a work space.



Caution - Do not attempt to move the server alone without a lift. For a one-person installation, all the components must be removed, and a lift must be used. For a two-person installation, all the components must be removed, and a lift is optional.



Caution - Due to the weight of the server, the server should not be shipped while it is in a rack unless the shipping braces are installed. Install the server into the rack only at its final location.

Related Information

- [“Physical Specifications” on page 17](#)
- [“Handling Precautions” on page 25](#)
- [“Stabilize the Rack” on page 32](#)

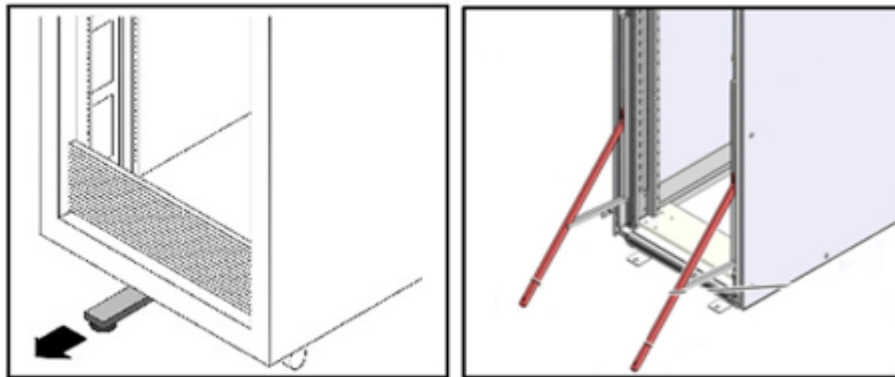
▼ Stabilize the Rack



Caution - To reduce the risk of personal injury, stabilize the rack by extending all antitilt devices before installing the server.

Refer to the rack documentation for detailed instructions for the following steps.

1. **Read the rack cautions and stabilize the rack.**
See [“Rack Cautions” on page 30.](#)
2. **Open and remove the front and rear doors from the rack.**
3. **To prevent the rack from tipping during the installation, stabilize the rack using all antitilt mechanisms provided.**



4. **If there are leveling feet beneath the rack to prevent it from rolling, extend these leveling feet fully downward to the floor.**
5. **Install the rackmount kit.**
See [“Installing the Rackmount Kit” on page 33.](#)

Related Information

- [“Installing the Rackmount Kit” on page 33](#)

- Rack documentation
- *SPARC T7-4 Server Safety and Compliance Guide*
- [“Rack Compatibility” on page 30](#)
- [“Rack Cautions” on page 30](#)

Installing the Rackmount Kit

These topics describe how to install the rackmount hardware.

- [“Rackmount Kit Overview” on page 33](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)
- [“Mark the Rackmounting Location” on page 36](#)
- [“Install the Shelf Rails” on page 37](#)

Related Information

- [“Rack Compatibility” on page 30](#)
- [“Tools Needed for Installation” on page 26](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)
- [“Install the Shelf Rails” on page 37](#)

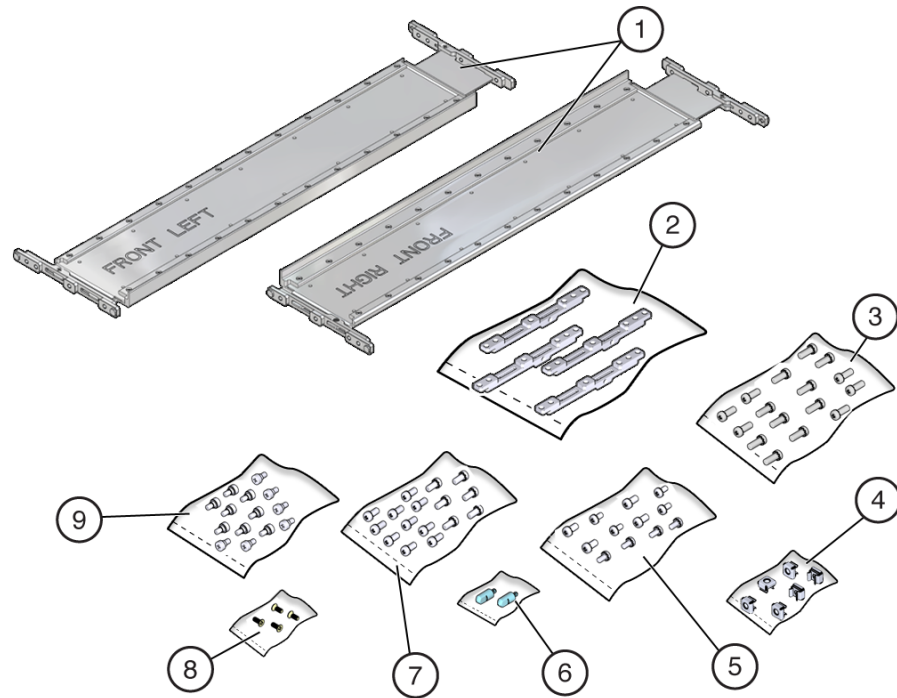
Rackmount Kit Overview

The rackmount kit has two shelf rail assemblies, one for each side of the rack. Each shelf rail is marked *LEFT* or *RIGHT*.

The shelf rails are mounted to the rack with four brackets, two on each side. Brackets for square-hole racks are preattached to the shelf rails. The rackmount kit also includes a set of brackets for use with threaded-hole racks.

The shelf rails adjust to fit rack depths from 25 to 34.25 in. (63.5 to 87 cm).

In addition, the rackmount kit includes the shipping brace components. Installing the shipping brace components is optional.



No.	Description
1	Shelf rails preassembled with adapter brackets (for racks with square mounting holes) (2)
2	Adapter brackets (for racks with round mounting holes) (2)
3	M6 x 16-mm screws (16)
4	Cage nuts (6)
5	10-32 x 10-mm screws (12)
6	Guide pins (2)
7	M6 x 12-mm screws (16)
8	M4 x 10mm flathead screws (4)
9	10-32 shoulder screws (12)

Note - Some of the fastener bags that are included in the kit are not required to install this server.

▼ Determine Correct Rackmount Hardware

1. Ensure that the rack is stabilized.

See [“Stabilize the Rack” on page 32.](#)

2. Determine the hardware needed for your rack installation.

Rack Type	Fastener Bags Required
Square hole	SCREW, SEMS, M6 X 16
	CAGE NUTS, M6
Round hole (10-32) with corner bezel	SCREW, SEMS, 10-32 X 10
	SCREW, FLAT HEAD, M4 X 10
Round hole (M6) with corner bezel	SCREW, SEMS, M6 X 12
	SCREW, FLAT HEAD, M4 X 10
Round hole (10-32) inside installation	SCREW, SHOULDER, 10-32
	SCREW, FLAT HEAD, M4 X 10
Round hole (M6) inside installation	SCREW, SEMS, M6 X 12
	SCREW, FLAT HEAD, M4 X 10

Note - Some of the fastener bags that are included in the kit are not required to install this server.

3. Mark the rackmounting location.

See [“Mark the Rackmounting Location” on page 36.](#)

Related Information

- [“Rack Compatibility” on page 30](#)
- [“Installing the Rackmount Kit” on page 33](#)
- [“Mark the Rackmounting Location” on page 36](#)
- [“Install the Shelf Rails” on page 37](#)

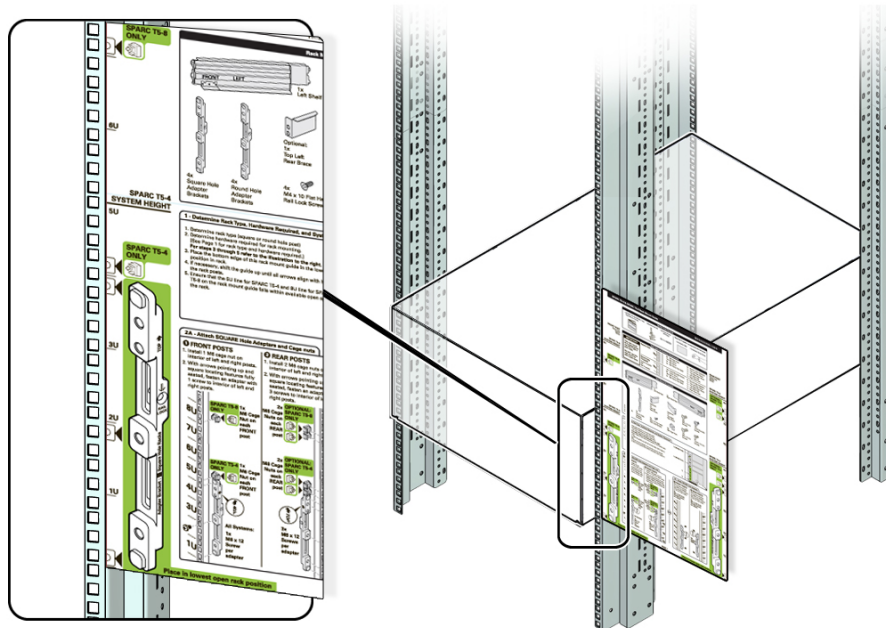
▼ Mark the Rackmounting Location

Use the Rack Buddy template to identify the correct mounting holes for the shelf rails.

Note - Load the rack from bottom to top.

1. **Ensure that there is enough vertical space in the rack to install the server.**
2. **Place the Rack Buddy template against the front rails.**

The bottom edge of the template corresponds to the bottom edge of the server. Measure up from the bottom of the template.



3. **Mark the mounting holes for the front shelf rails.**
4. **Mark the mounting holes for the rear shelf rails.**

Related Information

- [“Rack Compatibility” on page 30](#)

- [“Installing the Rackmount Kit” on page 33](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)
- [“Install the Shelf Rails” on page 37](#)

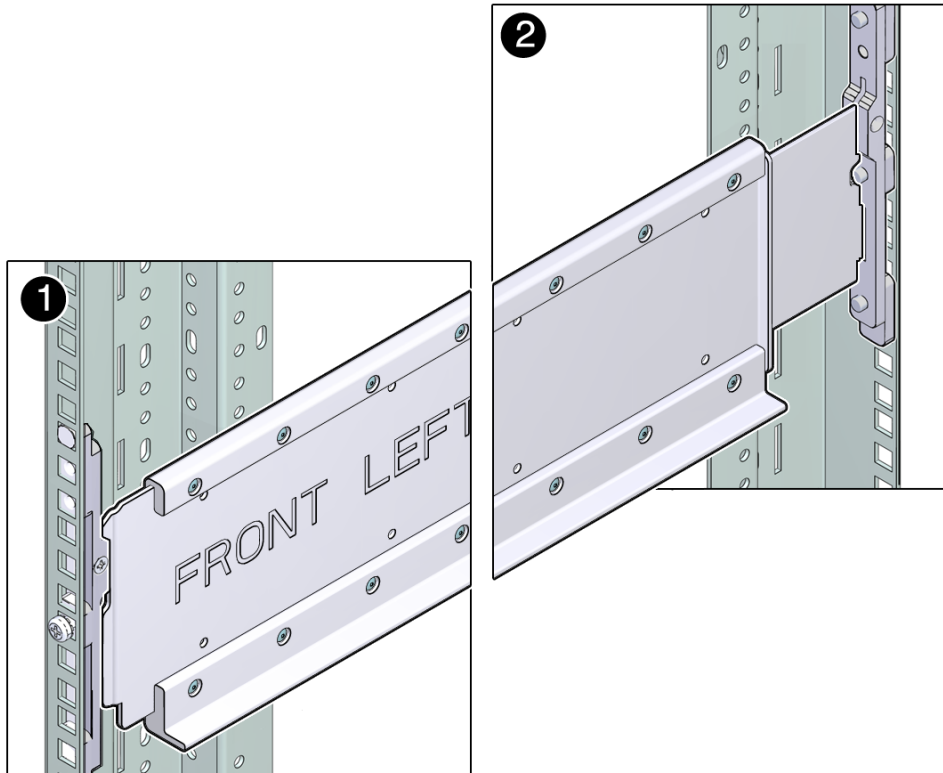
▼ Install the Shelf Rails

1. **Place the left shelf rail in the marked location.**

Note - The shelf rails are marked *FRONT LEFT* and *FRONT RIGHT* (as viewed from the front of the server). An *up* arrow indicates proper orientation.

2. **Secure the rear shelf rail bracket at the top and bottom holes using two Torx T30 screws.**

3. Secure the front of the shelf rail in the center hole using one Torx T30 screw.



4. Insert a cage nut in the hole just above the top of the shelf rail bracket.
5. Repeat [Step 1](#) through [Step 4](#) for the right shelf rail.
6. Consider your next step.
 - If you are installing a CMA, see [“Installing the CMA \(Optional\)” on page 41.](#)
 - If you are installing the server into an equipment rack that will be shipped to another location, see [“Installing the Shipping Brace Assembly \(Optional\)” on page 45.](#)
 - If you are installing the server, see [“Installing the Server” on page 29.](#)

Related Information

- [“Rack Compatibility” on page 30](#)
- [“Rack Cautions” on page 30](#)
- [“Installing the Rackmount Kit” on page 33](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)

▼ Install the Server



Caution - Do not attempt to move the server alone without a lift. For a one-person installation, all the main CRUs must be removed, and a lift must be used. For a two-person installation, all the CRUs must be removed, and a lift is optional.

1. Prior to installing the server, confirm that you have removed the following components.

- Both processor modules
- The main module
- All four power supplies
- All five fan modules

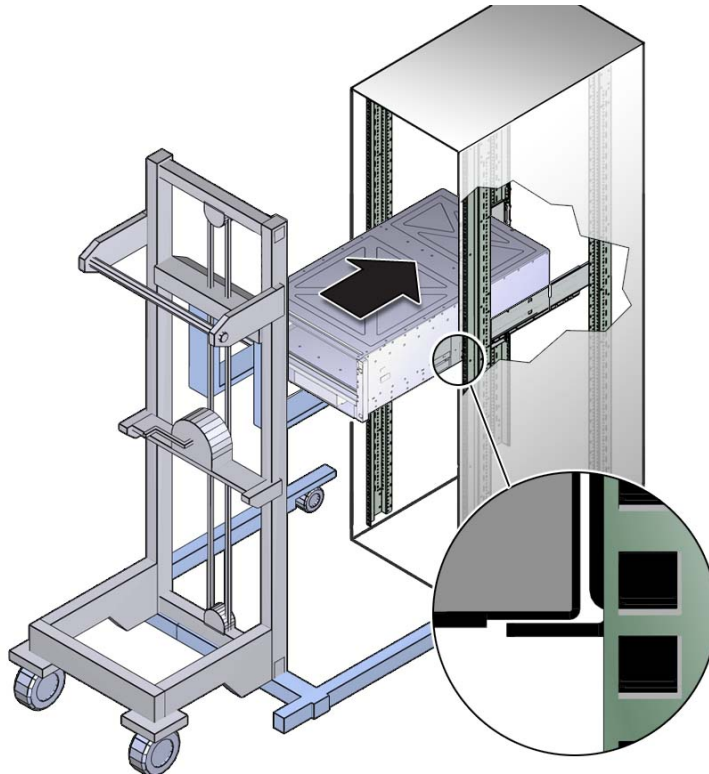
Refer to the *SPARC T7-4 Server Service Manual* for removal instructions.

2. If you are using a mechanical lift, ensure that the lift is level and stable.

3. Lift the server up to the correct height.

Ensure that the bottom edge of the server has cleared the bottom of the shelf rails.

4. **Slide the server into the rack.**



5. **Secure the server to the front panel using four No. 2 Phillips screws.**
6. **Replace all of the components that you removed.**
 - Both processor modules
 - The main module
 - All four power supplies
 - All five fan modules

Refer to the *SPARC T7-4 Server Service Manual* for installation instructions.

Related Information

- [“Rack Compatibility” on page 30](#)

- [“Rack Cautions” on page 30](#)
- [“Stabilize the Rack” on page 32](#)
- [“Installing the Rackmount Kit” on page 33](#)

Installing the CMA (Optional)

The CMA is an optional kit for managing and routing power and data cables attached to the back of the server.

Note - This server with the CMA attached fits only into a 1200-mm rack.

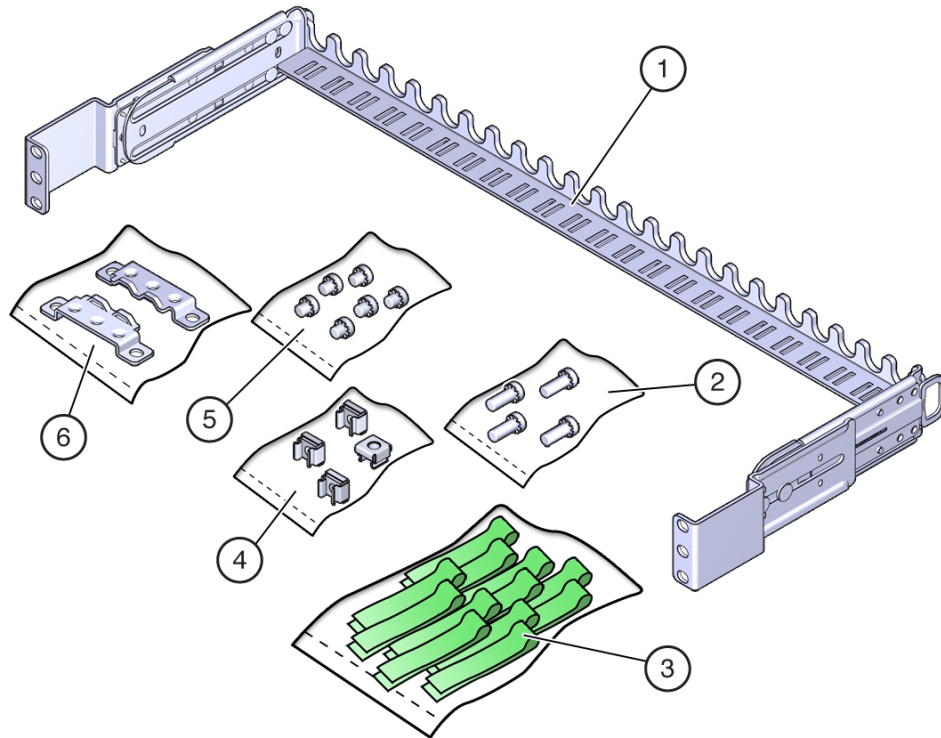
These topics provide the information and tasks needed to install the CMA:

- [“CMA Kit Overview” on page 42](#)
- [“Install the CMA” on page 43](#)
- [“Secure Cables Using the CMA” on page 61](#)

Related Information

- [“Installing the Rackmount Kit” on page 33](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)
- [“CMA Kit Overview” on page 42](#)
- [“Secure Cables Using the CMA” on page 61](#)

CMA Kit Overview



No.	Description
1	CMA comb
2	M6 16-mm screws (4)
3	Hook and loop straps (14)
4	M6 cage nuts (4)
5	M6 6-mm screws (6)
6	Bracket adapters (2)

Related Information

- [“Determine Correct Rackmount Hardware” on page 35](#)

- [“Install the CMA” on page 43](#)
- [“Secure Cables Using the CMA” on page 61](#)

▼ Install the CMA

Attach the CMA to the rear posts of the rack.

Note - The CMA installation might block some of the power outlets in the rack, making them unavailable.

1. Confirm that you have the correct hardware to install the CMA.

See [“Determine Correct Rackmount Hardware” on page 35](#).

2. Attach the bracket adapters to the CMA comb.

Use six M6 x 6mm screws, three on each side.

3. If the server is already installed in the rack, do the following:

- a. Remove the four faceplate screws, two on each side.**

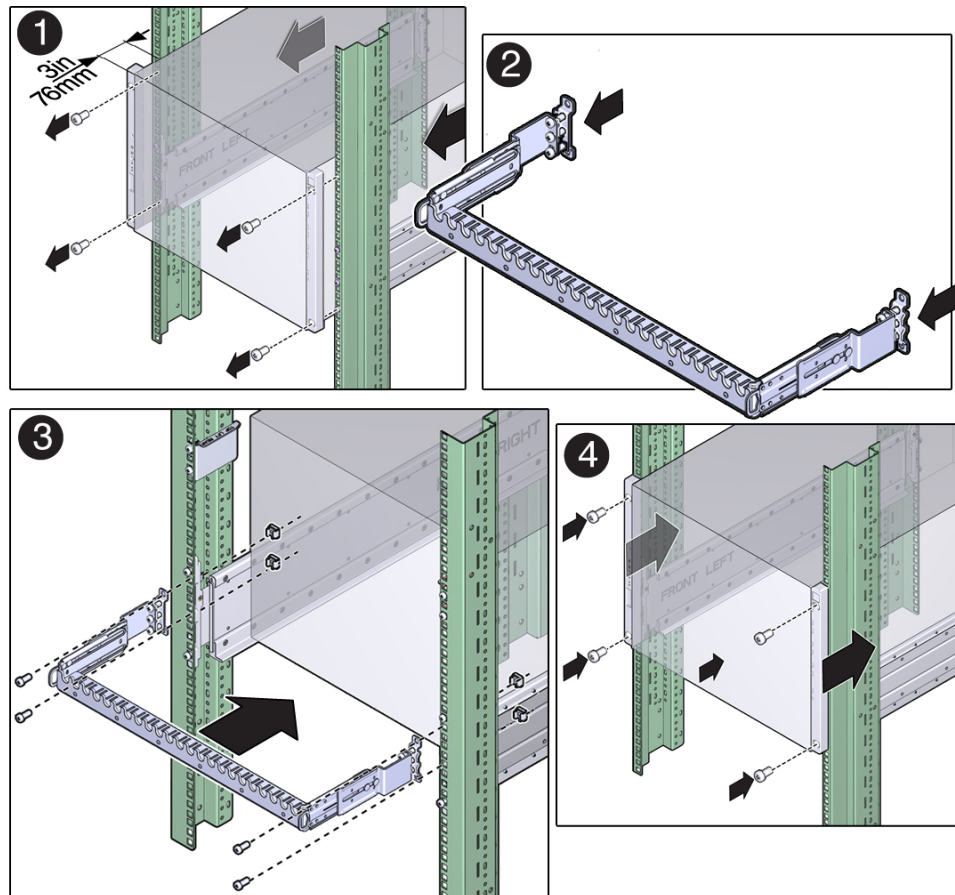


Caution - Do not loosen or remove the screws that secure the shelf rail brackets to the rack.

- b. At the rear of the server, on square hole racks, remove the middle adapter screw on each side.**



Caution - Do not remove the top adapter screw on the square hole racks.



- c. Push the server forward 3 in. (76 mm).
4. Attach the CMA to the rack posts, using two M6 screws for each side.
5. Consider your next steps:
 - If the server is already installed, do the following:

- a. **At the front of the server, push the server back until it touches the rails.**
- b. **Reinstall the four faceplate screws, two for each side.**
- **If the server is not already installed, install the server.**
See [“Install the Server” on page 39](#).

Related Information

- [“CMA Kit Overview” on page 42](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)

Installing the Shipping Brace Assembly (Optional)

This shipping brace assembly is included in the shipping kit. Use the shipping brace assembly if you are installing the server into an equipment rack that will be shipped to another location.

Note - These procedures describe how to install the server into a rack with square mounting holes. If you are installing the server into a rack with round mounting holes, see [“Determine Correct Rackmount Hardware” on page 35](#).

- [“Determine Correct Shipping Brace Fasteners” on page 47](#)
- [“Install the Top Rear Shipping Braces” on page 47](#)
- [“Install the Bottom Rear Shipping Brace” on page 49](#)

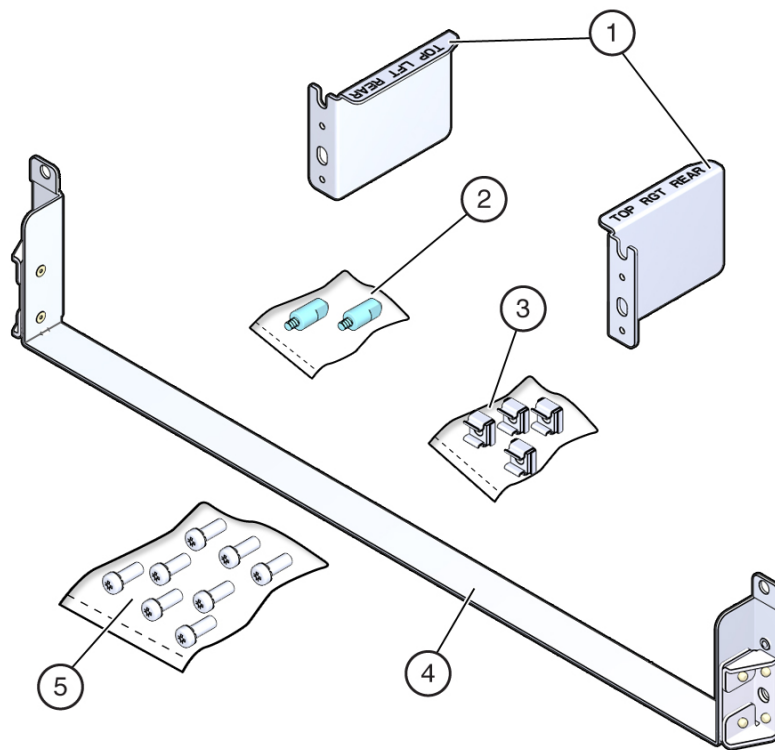
Related Information

- [“Rack Compatibility” on page 30](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)
- [“Mark the Rackmounting Location” on page 36](#)
- [“Install the Server” on page 39](#)

Shipping Brace Overview

The shipping braces provide extra shock and vibration protection. Install the shipping braces when installing the server into a vehicle, or when you are installing the server into an equipment rack that will be shipped to another location for final installation.

The shipping braces and necessary fasteners are included with the rackmount kit.



No.	Description
1	Top rear shipping brace (2)
2	Guide pins (2)
3	Cage nuts (4)
4	Bottom rear shipping brace
5	Screws (8)

Related Information

- [“Tools Needed for Installation” on page 26](#)
- [“Rack Compatibility” on page 30](#)
- [“Determine Correct Rackmount Hardware” on page 35](#)
- [“Mark the Rackmounting Location” on page 36](#)

▼ Determine Correct Shipping Brace Fasteners

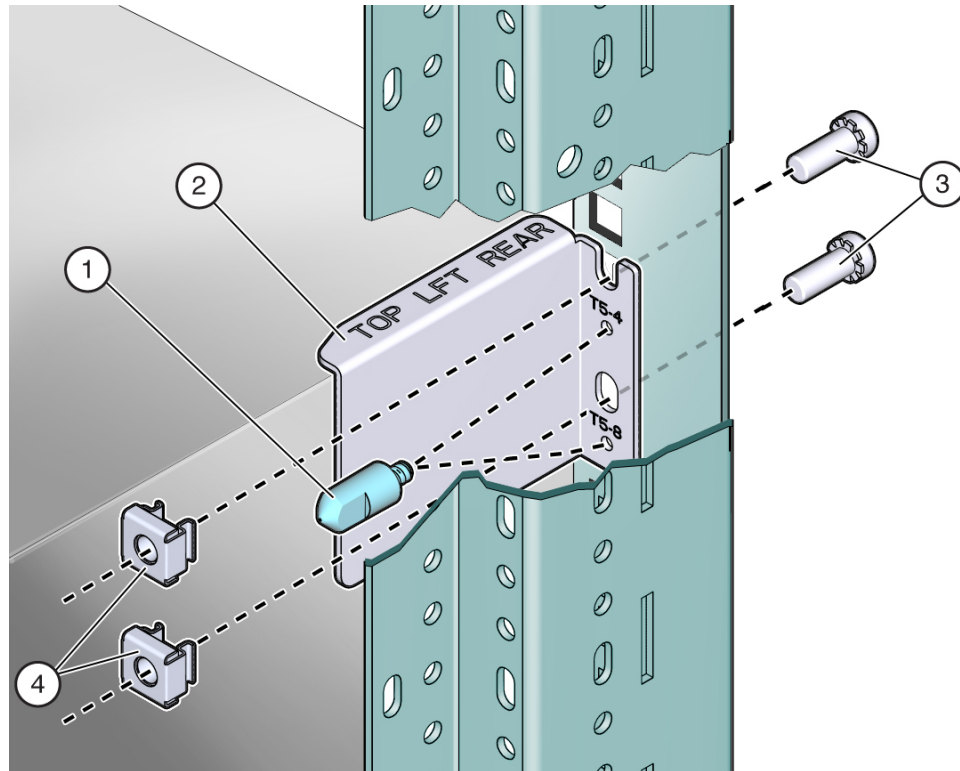
- Determine the correct fasteners for your shipping brace installation.

Rack Type	Fastener Bags Required
Square hole with corner bezel	SCREW, SEMS, M6 X 12MM
Tapped hole (10-32)	SCREW, SHOULDER, 10-32
Tapped hole (M6)	SCREW, SEMS, M6 X 12MM

▼ Install the Top Rear Shipping Braces

The top rear shipping braces are labeled *TOP LFT REAR* and *TOP RGT REAR* as viewed from the rear of the rack.

1. Install two cage nuts into the left rear rack post above the adapter bracket.



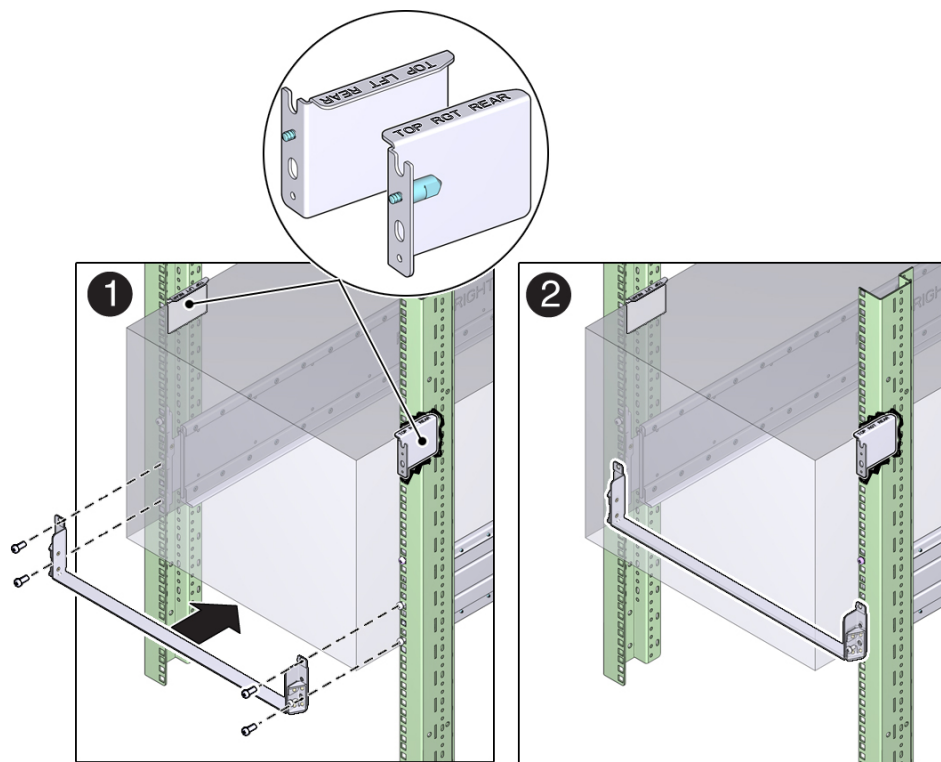
2. Position the top left shipping brace on the left rear rack post above the adapter.
3. Insert and finger-tighten the guide pin in the appropriate hole for your server.
4. Secure the brace with two M6 x 12-mm screws.
5. Repeat [Step 1](#) through [Step 4](#) for the top right shipping brace.

Related Information

- [“Determine Correct Shipping Brace Fasteners” on page 47](#)
- [“Install the Bottom Rear Shipping Brace” on page 49](#)

▼ Install the Bottom Rear Shipping Brace

1. Position the shipping brace at the bottom rear of the system.
2. Secure each side of the bottom rear shipping brace with two M6 x 12-mm screws.



Related Information

- [“Determine Correct Shipping Brace Fasteners” on page 47](#)
- [“Install the Top Rear Shipping Braces” on page 47](#)
- [“Remove the Bottom Rear Shipping Brace” on page 50](#)

▼ Remove the Bottom Rear Shipping Brace

Remove the bottom shipping brace after the server rack reaches its final destination.

1. **Remove the four screws that secure the bottom shipping brace to the rack.**
2. **Slide the shipping brace out from the rear of the rack.**

Related Information

- [“Determine Correct Shipping Brace Fasteners” on page 47](#)
- [“Install the Top Rear Shipping Braces” on page 47](#)
- [“Install the Bottom Rear Shipping Brace” on page 49](#)

Connecting Cables

These tasks describe how to connect and configure the network and serial ports before you attempt to boot the server.

Step	Description	Links
1.	Review the cabling requirements.	“Cabling Requirements” on page 51
2.	Review the front and rear panel connectors and ports.	“Front Panel Components” on page 14 “Rear Panel Components” on page 15 “Identifying Ports” on page 53
3.	Connect the management and data cables.	“Connecting Data and Management Cables” on page 58
4.	Secure the cables with the CMA.	“Secure Cables Using the CMA” on page 61

Related Information

- [“Understanding the Server” on page 11](#)
- [“Rear Panel Components” on page 15](#)
- [“Installing the Server” on page 29](#)
- [“Powering On the Server for the First Time” on page 65](#)

Cabling Requirements

- **Minimum cable connections for the server:**
 - At least one server on-board Ethernet network connection (NET port)
 - Serial management port (SER MGT port): SP local connection with Oracle ILOM boot messages
 - Power cables for the server power supplies
- **SP management ports:** There are two SP management ports for use with the Oracle ILOM SP.

- The SER MGT port uses an RJ-45 cable and is always available. This port is the default connection to the ILOM SP.
- The NET MGT port is the optional connection to the Oracle ILOM SP. The NET MGT port is configured to use DHCP by default. To set a static IP address, see [“Assigning a Static IP Address to the SP” on page 76](#). The SP network management port uses an RJ-45 cable for a 10/100 BASE-T connection.
- **Ethernet ports:** Labeled NET 0, NET 1, NET 2, and NET 3. The Ethernet interfaces operate at 100 Mbps, 1000 Mbps, and 10000 Mbps.

Connection Type	IEEE Terminology	Transfer Rate
Fast Ethernet	100BASE-T	100 Mbts/sec
Gigabit Ethernet	1GBASE-T	1000 Mbts/sec
10 Gigabit Ethernet	10GBASE-T	10000 Mbts/sec

Note - To achieve 10 GbE network speeds, use Category 6 (or better) cables and network devices that support 1000BASE-T networks.

- **USB Ports:** USB ports support hot-plugging. You can connect and disconnect USB cables and peripheral devices while the server is running without affecting server operations.
 - You can perform USB hot-plug operations only while the OS is running. USB hot-plug operations are not supported when the server ok prompt is displayed or before the server has completed booting.
 - You can connect up to 126 devices to each of the four USB controllers, for a total of 504 USB devices per server.
- **AC power cables:** Do not attach power cables to the power supplies until you have finished connecting the data cables and have connected the server to a serial terminal or a terminal emulator (PC or workstation). The server goes into Standby mode and the Oracle ILOM SP initializes as soon as the AC power cables are connected to the power source. System messages will not be displayed if the server is not connected to a terminal, PC, or workstation.

Related Information

- [“Connect the SER MGT Cable” on page 59](#)
- [“Connect the NET MGT Cable” on page 59](#)
- [“Connect the Ethernet Network Cables” on page 60](#)
- [“Prepare the Power Cords” on page 65](#)

Identifying Ports

- [“USB Ports” on page 53](#)
- [“SER MGT Ports” on page 54](#)
- [“NET MGT Port” on page 55](#)
- [“Ethernet Ports” on page 56](#)
- [“VGA Port” on page 57](#)

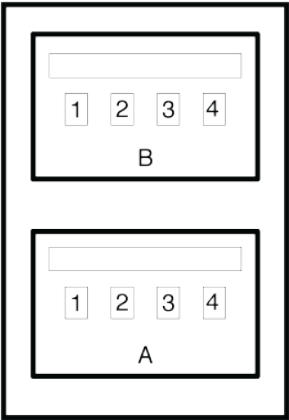
Related Information

- [“Server Overview” on page 12](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Connecting Data and Management Cables” on page 58](#)

USB Ports

Two USB 3.0 ports are located at the rear panel. Two additional USB 3.0 ports are located on the main module and are accessible from the front panel. See the location of the USB ports at [“Front Panel Components” on page 14](#) and [“Rear Panel Components” on page 15](#). The USB ports support hot-plugging. You can connect and disconnect USB cables and peripheral devices while the server is running without affecting server operations.

Each USB port supplies 5V output at 2 A.



Pin	Signal Description	Pin	Signal Description
A1	+5 V (fused)	B1	+5 V (fused)
A2	USB0/1-	B2	USB2/3-
A3	USB0/1+	B3	USB2/3+
A4	Ground	B4	Ground

Related Information

- [“Server Overview” on page 12](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Connecting Data and Management Cables” on page 58](#)

SER MGT Ports

The SER MGT RJ-45 port, located on the rear panel, provides an TIA/EIA-232 serial Oracle/ Cisco standard connection to the SP. This port is the default connection to the Oracle ILOM SP. For DTE to DTE communications, you can use the supplied RJ-45 to DB-9 crossover adapter with a standard RJ-45 cable to achieve the required null modem configuration. See [“Rear Panel Components” on page 15](#).

An additional SER MGT port is located on the main module and is accessible from the front panel. See [“Front Panel Components” on page 14](#).



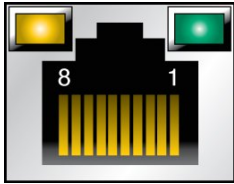
Pin	Signal Description	Pin	Signal Description
1	Request to Send	5	Ground
2	Data Terminal Ready	6	Receive Data
3	Transmit Data	7	Data Set Ready
4	Ground	8	Clear to Send

Related Information

- [“Server Overview” on page 12](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Connect the SER MGT Cable” on page 59](#)
- [“Connect a Terminal or Emulator to the SER MGT Port” on page 66](#)

NET MGT Port

The NET MGT RJ-45 port, located on the rear panel, provides an optional Ethernet connection to the SP. The NET MGT port is an optional connection to the Oracle ILOM SP. The SP NET MGT port uses an RJ-45 cable for a 10/100BASE-T connection. If your network does not use a DHCP server, this port will not be available until you configure network settings through the SER MGT port. See [“Rear Panel Components” on page 15](#).



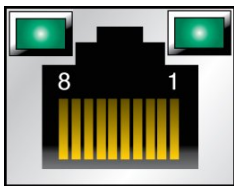
Pin	Signal Description	Pin	Signal Description
1	Transmit Data +	5	Common Mode Termination
2	Transmit Data –	6	Receive Data –
3	Receive Data +	7	Common Mode Termination
4	Common Mode Termination	8	Common Mode Termination

Related Information

- [“Server Overview” on page 12](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Connect the NET MGT Cable” on page 59](#)
- [“Assign a Static IP Address to the NET MGT Port” on page 78](#)

Ethernet Ports

Four RJ-45 10-Gigabit full-duplex auto-negotiating Ethernet ports (NET 0, NET 1, NET 2, NET 3) are located on the system rear panel. See [“Rear Panel Components” on page 15](#). The Ethernet interfaces operate at 100 Mbit/sec, 1000 Mbit/sec, and 10000 Mbit/sec.



Pin	Signal Description	Pin	Signal Description
1	Transmit/Receive Data 0 +	5	Transmit/Receive Data 2 –

Pin	Signal Description	Pin	Signal Description
2	Transmit/Receive Data 0 –	6	Transmit/Receive Data 1 –
3	Transmit/Receive Data 1 +	7	Transmit/Receive Data 3 +
4	Transmit/Receive Data 2 +	8	Transmit/Receive Data 3 –

Related Information

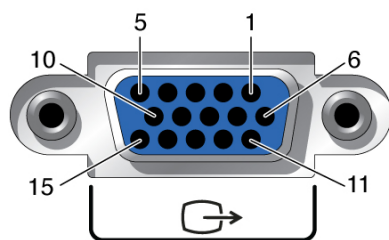
- [“Server Overview” on page 12](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Connect the Ethernet Network Cables” on page 60](#)

VGA Port

The server has two 15-pin VGA video ports, one port on the front and one on the back of the server. See [“Front Panel Components” on page 14](#) and [“Rear Panel Components” on page 15](#). Use a DB-15 video cable to connect to a video adapter to achieve the required connection. The maximum supported resolution is 1024 x 768.

Note - Only one of the two ports can be used at a time. The rear VGA port is disabled by default. To enable the rear port and disable the front port, you must enable the Oracle ILOM `VGA_REAR_PORT` policy. Type: `-> set /SP/policy VGA_REAR_PORT=enabled`.

Note - The cable length used to connect between the monitor and the VGA port should not be over 6 meters.



Pin	Signal Description	Pin	Signal Description
1	Red Video	9	[KEY]
2	Green Video	10	Sync Ground
3	Blue Video	11	Monitor ID - Bit 1
4	Monitor ID - Bit 2	12	VGA 12C Serial Data
5	Ground	13	Horizontal Sync
6	Red Ground	14	Vertical Sync
7	Green Ground	15	VGA 12C Serial Clock
8	Blue Ground		

Related Information

- [“Server Overview” on page 12](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Connect Other Data Cables” on page 61](#)

Connecting Data and Management Cables

After you have connected these cables, see [“Powering On the Server for the First Time” on page 65](#) before connecting the AC power cords.



Caution - Use only the power cords provided with the server.

- [“Connect the SER MGT Cable” on page 59](#)
- [“Connect the NET MGT Cable” on page 59](#)
- [“Connect the Ethernet Network Cables” on page 60](#)
- [“Connect Other Data Cables” on page 61](#)

Related Information

- [“Server Overview” on page 12](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)

- [“Identifying Ports” on page 53](#)

▼ Connect the SER MGT Cable

The SER MGT port on the SP is marked SER MGT. The SP SER MGT port is only used for server management. It is the default connection between the SP and a terminal or a computer. See [“Front Panel Components” on page 14](#) and [“Rear Panel Components” on page 15](#) for connector locations.



Caution - Do not attach a modem to the SP SER MGT port.

- **Connect an RJ-45 cable (Category 5) from the SP SER MGT port to the terminal device.**

Use this port for initial server management. This port is needed to activate the NET MGT port, as detailed in [“Powering On the Server for the First Time” on page 65](#).

When connecting either a DB-9 or a DB-25 cable, use the appropriate crossover cable adapter to create the required null modem configuration.

Related Information

- [“Server Overview” on page 12](#)
- [“Front Panel Components” on page 14](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Connect a Terminal or Emulator to the SER MGT Port” on page 66](#)

▼ Connect the NET MGT Cable

The SP NET MGT port is labeled NET MGT. After the initial server configuration, you can connect to the SP over an Ethernet network using this NET MGT port.

If your network uses a DHCP server to assign IP addresses, the DHCP server will assign an IP address to this NET MGT port. With this IP address, you can connect to the SP using an SSH connection. If your network does not use DHCP, this NET MGT port will not be accessible until you configure the network settings through the SER MGT port. For instructions, see [“Assign a Static IP Address to the NET MGT Port” on page 78](#).

- **Connect the NET MGT port to your network switch or hub using a Category 5 (or better) cable.**

See [“Rear Panel Components” on page 15](#) for connector locations.

The NET MGT port is not operational until you configure the network settings through the SER MGT port as detailed in [“Connect a Terminal or Emulator to the SER MGT Port” on page 66](#).

Note - The NET MGT port is configured by default to retrieve network settings with DHCP and to enable connections using SSH. You might need to modify these settings for your network. Information related to changing these settings are in [“Powering On the Server for the First Time” on page 65](#).

Related Information

- [“Server Overview” on page 12](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“NET MGT Port” on page 55](#)
- [“Assign a Static IP Address to the NET MGT Port” on page 78](#)

▼ Connect the Ethernet Network Cables

The server has four RJ-45 network connectors labeled NET 0, NET 1, NET 2, and NET 3. Use these ports to connect the server to the network. The Ethernet interfaces operate at 100 Mbps, 1000 Mbps, and 10000 Mbps. See [“Rear Panel Components” on page 15](#) for port locations.

Note - The Oracle ILOM sideband management feature enables you to access the SP using one of these Ethernet ports. Refer to the administration guide for your server for instructions.

Note - To achieve 1 GbE network speeds, use Category 6 (or better) cables and network devices that support 1000BASE-T networks.

1. **Connect a Category 5 (or better) cable from your network switch or hub to Ethernet Port 0 (NET 0) on the rear of the chassis.**
2. **Connect Category 5 (or better) cables from your network switch or hub to the remaining Ethernet ports (NET 1, NET 2, NET 3) as needed.**

Related Information

- [“Server Overview” on page 12](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [“Ethernet Ports” on page 56](#)
- [“Powering On the Server for the First Time” on page 65](#)
- [SPARC T7 Series Servers Administration Guide](#)

▼ Connect Other Data Cables

- If the server is configured with additional I/O components, connect the external cables to the connectors contained on those components.

Related Information

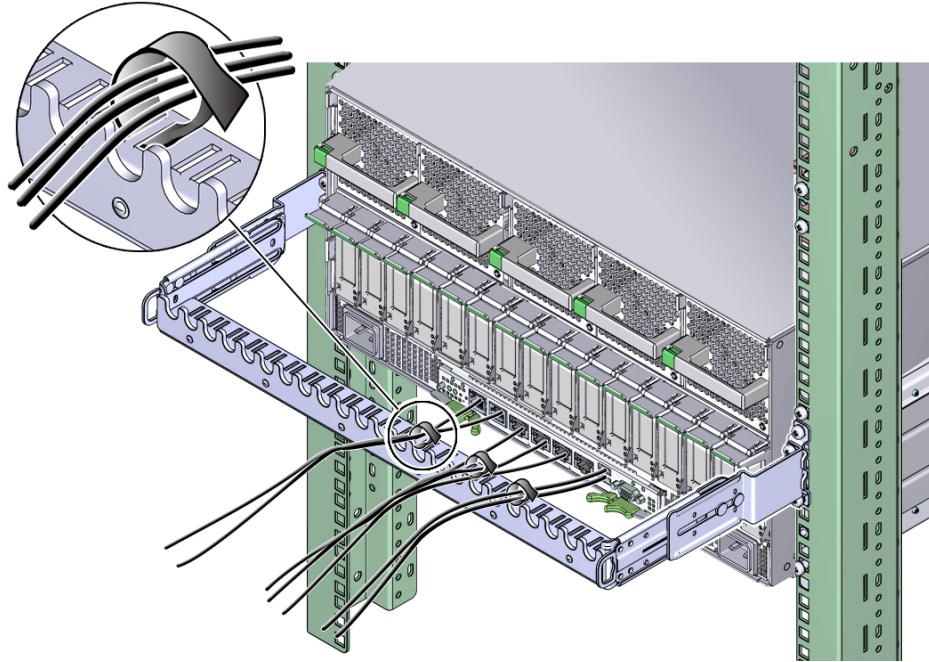
- [“Server Overview” on page 12](#)
- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- PCIe card documentation
- [SPARC T7-4 Server Service Manual](#)

▼ Secure Cables Using the CMA

Use the CMA to secure cables and ensure proper cable routing.

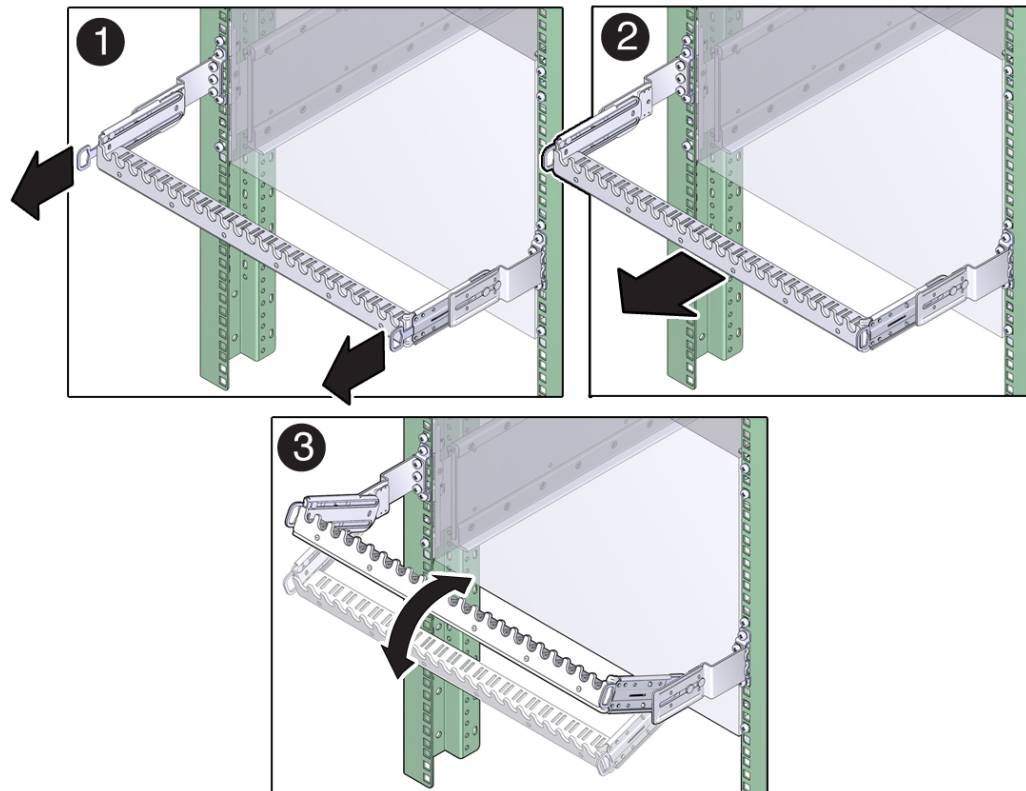
1. **Nest and bundle the cables as appropriate.**
See [“Connecting Data and Management Cables” on page 58](#).

Use the supplied hook and loop fasteners to secure the cables in the CMA.



2. If necessary, tilt the CMA up or down to direct the cables as appropriate.

Pull the release tabs out to unlock the CMA comb. Rotate the CMA comb up or down as needed, and push the release tabs in to lock the CMA comb in the desired position.



Related Information

- [“Installing the CMA \(Optional\)” on page 41](#)
- [“Cabling Requirements” on page 51](#)

Powering On the Server for the First Time

These topics include instructions for powering on the server for the first time and configuring the Oracle Solaris OS.

Step	Description	Links
1.	Prepare the power cords.	“Prepare the Power Cords” on page 65
2.	Connect a serial terminal device or terminal server to the SER MGT port.	“Connect a Terminal or Emulator to the SER MGT Port” on page 66
3.	Power on the server and start the Oracle ILOM system console.	“Power on the Server for the First Time” on page 68 or “Configure the Preinstalled OS” on page 71
4.	Configure the preinstalled OS, or install a fresh OS.	“Configure the Preinstalled OS” on page 71 or “Reach a State to Install a Fresh OS (Oracle ILOM CLI)” on page 71
5.	Set the configuration parameters for the Oracle Solaris OS.	“Oracle Solaris OS Configuration Parameters” on page 75
6.	(Optional.) Configure the NET MGT port to use a static IP address.	“Assign a Static IP Address to the NET MGT Port” on page 78

Related Information

- [“Understanding the Server” on page 11](#)
- [“Installing the Server” on page 29](#)
- [“Connecting Data and Management Cables” on page 58](#)

▼ Prepare the Power Cords

Prepare the power cords by routing them from the AC power source to the server.



Caution - Use only the power cords provided with the server.



Caution - Do not attach power cables to the power supplies until you have connected the server to a serial terminal or a terminal emulator (PC or workstation). The server goes into Standby mode and the Oracle ILOM SP initializes as soon as a power cable connects a power supply to an external power source. System messages might be lost after 60 seconds if a terminal or terminal emulator is not connected to the SER MGT port before power is applied.

Note - Oracle ILOM will signal a fault if all four power supplies are not cabled at the same time, since it will be a nonredundant condition. Do not be concerned with this fault in this situation.

- **Route the power cords from the AC power source to the rear of the server.**

Do not attach the power cords to the power supplies at this time.

Related Information

- [“Rear Panel Components” on page 15](#)
- [“Power on the Server for the First Time” on page 68](#)

▼ **Connect a Terminal or Emulator to the SER MGT Port**

Prior to powering on the server for the first time, make a serial connection to the SP from a terminal or terminal emulator. After making this serial connection, you will be able to view the system messages when you connect the power cords.

1. **Confirm that you have completed the following tasks:**
 - a. **Completed the preparation for installation.**
See [“Preparing for Installation” on page 23](#).
 - b. **Completed the installation of the server in a rack.**
See [“Installing the Server” on page 29](#).
 - c. **Connected the necessary cables.**
See [“Connecting Cables” on page 51](#)
2. **Connect a terminal or a terminal emulator (PC or workstation) to the server SER MGT port.**

3. Configure a terminal or terminal emulator with these settings:

- 9600 baud
- 8 bits
- No parity
- 1 Stop bit
- No handshake

A null modem configuration is needed, meaning the transmit and receive signals are reversed (crossed over) for DTE to DTE communications. You can use the supplied RJ-45 crossover adapters with a standard RJ-45 cable to achieve the null modem configuration.

Note - If you power on the server for the first time and do not have a terminal or terminal emulator (PC or workstation) connected to the SER MGT port, you will not see system messages.

4. (Optional) Connect an Ethernet cable between the server's NET MGT port and the network to which future connections to the SP and host will be made.

Configure the system for the first time through the SER MGT port. After the initial configuration, you can set up communication between the SP and host through this Ethernet interface.

5. Connect an Ethernet cable between one of the server's NET ports and the network to which the server will communicate.**6. Connect the power cords to the power supplies and to separate power sources.**

When the power cords are connected, the SP initializes and the power supply LEDs illuminate. After a few minutes, the SP login prompt is displayed on the terminal device. At this time, the host is not initialized or powered on.

7. Continue with the installation by powering on the server for the first time.

See [“Power on the Server for the First Time” on page 68.](#)

Related Information

- [“Connect the SER MGT Cable” on page 59](#)
- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)

▼ Power on the Server for the First Time

1. **At the terminal device, log in to the SP as root with a password of changeme.**

```
XXXXXXXXXXXXXXXX login: root
Password: changeme (  nothing
displayed)
. . .
->
```

After a brief delay, the Oracle ILOM prompt is displayed (->).

Note - To enable first-time login and access to Oracle ILOM, a default Administrator account and its password are provided with the system. To build a secure environment, you must change the default password (**changeme**) for the default Administrator account (root) after your initial login to Oracle ILOM. If this default Administrator account has been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.

For more information about the administration tasks such as changing passwords, adding accounts, and setting account privileges, refer to the Oracle ILOM documentation.

Note - By default, the SP is configured to use DHCP to obtain an IP address. If you plan to assign a static IP address to the SP, see [“Assign a Static IP Address to the NET MGT Port” on page 78](#) for more instructions.

2. **Power on the server using one of the following methods.**

- **Press the power button.**
- **At the Oracle ILOM prompt, type:**

```
-> start /System
Are you sure you want to start /System (y/n)? y
```

The server initialization might take several minutes to complete.

To cancel the initialization, press the #. (Hash+Dot) keys to return to the Oracle ILOM prompt. Then type: stop /System

Note - In Oracle ILOM 3.1, the name space for /SYS was replaced with /System. You can use the legacy name in a command at any time, but to expose the legacy name in the output, you must enable it with -> **set /SP/cli legacy_targets=enabled**. For more information, see the Oracle ILOM 3.1 documentation.

3. (Optional) Redirect the host output to display on the serial terminal device.

```
-> start /HOST/console
Are you sure you want to start /SP/console (y/n)? y
Serial console started.
. . .
```

4. (Optional) You can execute other Oracle ILOM commands while the server initializes.

- a. To display the Oracle ILOM prompt, press the #. (Hash+Dot) keys.
- b. To see information about available Oracle ILOM commands, type: `help`
To see information about a specific command, type `help command-name`
- c. To return to displaying host output from the server initialization, type:

```
-> start /HOST/console
```

5. Continue with the installation by installing the OS.

See [“Configure the Preinstalled OS” on page 71](#).

Related Information

- [“Connect the SER MGT Cable” on page 59](#)
- [“Oracle ILOM System Console” on page 70](#)
- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)

Oracle ILOM System Console

When power is first applied to the system, the boot process begins under the control of the Oracle ILOM system console. The system console displays status and error messages generated by firmware-based tests that are run during system startup.

Note - To see these status and error messages, connect a terminal or terminal emulator to the SER MGT before applying power to the server.

After the system console finishes its low-level system diagnostics, the SP initializes and runs a suite of higher level diagnostics. When you access the SP using a device connected to the SER MGT port, you see the output of the Oracle ILOM diagnostics.

By default, the SP configures the NET MGT port automatically, retrieving network configuration settings using DHCP and allowing connections using SSH.

For a more detailed discussion on configuring the system console and connecting terminals, refer to the administration guide for your server.

Related Information

- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)
- [“Assign a Static IP Address to the NET MGT Port” on page 78](#)
- [SPARC T7 Series Servers Administration Guide](#)
- Oracle ILOM documentation

Installing the OS

Use these topics to either configure the preinstalled OS or use an alternative OS.

- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)

Related Information

- [“Oracle Solaris OS Configuration Parameters” on page 75](#)

▼ Configure the Preinstalled OS

1. **Determine which OS you will use.**
 - If you plan to use the preinstalled OS, proceed to step 2.
 - If you do not plan to use the preinstalled OS, go to [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#) or [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#).
2. **When prompted, follow the onscreen instructions for configuring the Oracle Solaris OS on your host.**

You are prompted to confirm the configuration several times, enabling confirmation and changes. If you are not sure how to respond to a particular value, you can accept the default, and make future changes when the Oracle Solaris OS is running. See [“Oracle Solaris OS Configuration Parameters” on page 75](#) for a description of the Oracle Solaris OS parameters you must provide during initial configuration.
3. **Log in to the server.**

You can now enter Oracle Solaris OS commands at the prompt. For more details, refer to the Oracle Solaris OS man pages and documentation at:

<http://www.oracle.com/goto/solaris11/docs>

Related Information

- [“Prepare the Power Cords” on page 65](#)
- [“Connect a Terminal or Emulator to the SER MGT Port” on page 66](#)
- [“Power on the Server for the First Time” on page 68](#)
- [“Oracle Solaris OS Configuration Parameters” on page 75](#)

▼ Reach a State to Install a Fresh OS (Oracle ILOM CLI)

If you do not plan to use the preinstalled OS, use this procedure to prevent the server from booting from the preinstalled OS. You can perform this alternative procedure after reading Step 5 in [“Configure the Preinstalled OS” on page 71](#).

1. **Prepare the appropriate boot media according to your installation method.**

There are many methods by which you can install the OS. For example, you can boot and install the OS from DVD media or from another server on the network.

For more information about the methods, refer to *Installing Oracle Solaris 11 Systems*, comparing installation options at:

<http://www.oracle.com/goto/solaris11/docs>

2. From Oracle ILOM, set the OpenBoot `auto-boot?` parameter to false.

```
-> set /HOST/bootmode script="setenv auto-boot? false"
```

This setting prevents the server from booting from the preinstalled OS. When you use `bootmode`, the change applies only to a single boot and expires in 10 minutes if the power on the host is not reset.

3. When you are ready to initiate the OS installation, reset the host.

```
-> reset /System
Are you sure you want to reset /System (y/n)? y
Performing reset on /System
```

Note - In Oracle ILOM 3.1, the name space for `/SYS` was replaced with `/System`. You can use the legacy name in command at any time, but to expose the legacy name in the output, you must enable it by typing `-> set /SP/cli legacy_targets=enabled`. For more information, see the latest Oracle ILOM documentation.

4. Switch communication to the server host.

```
-> start /HOST/console
Are you sure you want to start /HOST/console (y/n)? y
Serial console started. To stop, type #.
```

The server might take several minutes to complete POST. Then the OpenBoot prompt (ok) is displayed.

5. Boot from the appropriate boot media for your installation method.

For more information, refer to *Installing Oracle Solaris 11 Systems*, comparing installation options at.

<http://www.oracle.com/goto/solaris11/docs>

For a list of valid boot commands, type:

```
ok help boot
boot <specifier> ( -- )    boot kernel ( default ) or other file
Examples:
```



```

boot                - boot kernel from default device.
                    Factory default is to boot
                    from DISK if present, otherwise from NET.
boot net            - boot kernel from network
boot cdrom          - boot kernel from CD-ROM
boot disk1:h        - boot from disk1 partition h
boot tape           - boot default file from tape
boot disk myunix -as - boot myunix from disk with flags "-as"
dload <filename> ( addr -- )    debug load of file over network at address
Examples:
    4000 dload /export/root/foo/test
    ?go          - if executable program, execute it
                  or if Forth program, compile it

```

Related Information

- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)
- [“Assign a Static IP Address to the NET MGT Port” on page 78](#)

▼ Reach a State to Install a Fresh OS (Oracle ILOM Web Interface)

If you do not plan to use the preinstalled OS, use this procedure to prevent the server from booting from the preinstalled OS.

1. Prepare the appropriate boot media according to your installation method.

There are many methods by which you can install the OS. For example, you can boot and install the OS from DVD media or from another server on the network. For more information, refer to *Installing Oracle Solaris 11 Systems*, comparing installation options at:

<http://www.oracle.com/goto/solaris11/docs>

2. If you have not done so, perform these tasks to access the Oracle ILOM web interface on the server:

- a. In a browser on the same network as the system, type the IP address of the SPM.
- b. Log in to Oracle ILOM by typing your user name and password.

3. **In the Oracle ILOM web interface, in the left navigation pane, choose Host Management -> Host Boot Mode.**

The Host Boot Mode page is displayed.

4. **Apply these changes to the host boot mode settings:**

- **For State, select: Reset NVRAM**

This setting applies a one-time NVRAM (OpenBoot) change based on the script setting, then resets the NVRAM to default settings on the next host reset.

- **For Script, type: `setenv auto-boot? false`**

This setting configures the host to stop at the ok prompt instead of automatically booting the preinstalled OS.

Click Save.

Note - You have 10 minutes to perform the next step. After 10 minutes, the state is automatically returned to normal.

5. **In the left navigation panel, click on Host Management -> Power Control.**

6. **Select Reset from the pull-down menu, and click Save.**

7. **In the left navigation panel, click on Remote Control -> Redirection.**

8. **Select Use Serial Redirection, and click Launch Remote Console.**

As the host resets, messages are displayed in the serial console. The reset activity takes a few minutes to complete. When the ok prompt is displayed, continue to the next step.

9. **At the ok prompt, boot from the appropriate boot media for your installation method.**

For more information, refer to *Installing Oracle Solaris 11 Systems*, comparing installation options at:

<http://www.oracle.com/goto/solaris11/docs>

For a list of valid boot commands that you can enter at the OpenBoot prompt, type:

ok **help boot**

boot <specifier> (--) boot kernel (default) or other file

Examples:

boot

- boot kernel from default device.

Factory default is to boot

from DISK if present, otherwise from NET.

```

boot net          - boot kernel from network
boot cdrom        - boot kernel from CD-ROM
boot disk1:h      - boot from disk1 partition h
boot tape         - boot default file from tape
boot disk myunix -as - boot myunix from disk with flags "-as"
dload <filename> ( addr -- )    debug load of file over network at address
Examples:
  4000 dload /export/root/foo/test
  ?go          - if executable program, execute it
                or if Forth program, compile it

```

Related Information

- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)
- [“Assign a Static IP Address to the NET MGT Port” on page 78](#)

Oracle Solaris OS Configuration Parameters

This topic describes configuration parameters you must provide during initial Oracle Solaris OS configuration.

Parameter	Description
Language	Select a number from the displayed language list.
Locale	Select a number from the displayed locale list.
Terminal Type	Select a terminal type that corresponds with your terminal device.
Network?	Select Yes.
Multiple Network Interfaces	Select the network interfaces that you plan to configure. If you are not sure, select the first one in the list.
DHCP?	Select Yes or No according to your network environment.
Host Name	Type the host name for the server.
IP Address	Type the IP address for this Ethernet interface.
Subnet?	Select Yes or No according to your network environment.
Subnet Netmask	(If subnet was Yes) Type the netmask for the subnet for your network environment.
IPv6?	Specify whether or not to use IPv6. If you are not sure, select No to configure the Ethernet interface for IPv4.
Security Policy	Select either standard UNIX security (No) or Kerberos Security (Yes). If you are not sure, select No.
Confirm	Review the onscreen information and change it if needed. Otherwise, continue.
Name Service	Select the name service according to your network environment.

Parameter	Description
	If you select a name service other than None, you will be prompted for additional name service configuration information.
NFSv4 Domain Name	Select the type of domain name configuration according to your environment. If you are not sure, select Use the NFSv4 domain derived by the system.
Time Zone (Continent)	Select your continent.
Time Zone (Country or Region)	Select your country or region.
Time Zone	Select the time zone.
Date and Time	Accept the default date and time or change the values.
root Password	Type the root password twice. This password is for the superuser account for the Oracle Solaris OS on this server. This password is not the SP password.

Related Information

- Oracle Solaris OS documentation
- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)

Assigning a Static IP Address to the SP

If your network does *not* use DHCP, the NET MGT port is not operational until you configure network settings for the SP.

Note - If you are unable to use DHCP on your network, you must connect to the Oracle ILOM SPM using the SER MGT port to configure the NET MGT port for your network. See [“Assign a Static IP Address to the NET MGT Port” on page 78](#).

- [“Log In to the SP \(SER MGT Port\)” on page 77](#)
- [“Assign a Static IP Address to the NET MGT Port” on page 78](#)

Related Information

- [“Oracle ILOM System Console” on page 70](#)
- [“Oracle Solaris OS Configuration Parameters” on page 75](#)
- [“Log In to the SP \(SER MGT Port\)” on page 77](#)

- [“Assign a Static IP Address to the NET MGT Port” on page 78](#)

▼ Log In to the SP (SER MGT Port)

After the SP boots, access the Oracle ILOM CLI to configure and manage the server. The Oracle ILOM CLI prompt (->) is displayed the first time the SP is booted. The default configuration provides an Oracle ILOM CLI root user account. The default root password is **changeme**. Change the password using the Oracle ILOM CLI `set /HOST/users/root password` command.

1. **If this is the first time the server has been powered on, change the root password.**

```
hostname login: root
Password:changeme (  nothing
displayed)
Last login: Mon Feb 18 16:53:14 GMT 2013 on ttyS0
Detecting screen size; please wait...done

Oracle(R) Integrated Lights Out Manager

Version 3.2.1.2 rxxxxx

Copyright (c) 2013, Oracle and/or its affiliates. All rights reserved.
Warning: password is set to factory default.

-> set /HOST/users/root password
Enter new password: *****
Enter new password again: *****

->
```

2. **Type root for the login name, followed by your password.**

```
...
hostname login: root
Password: ***** (  nothing
displayed)

Oracle(R) Integrated Lights Out Manager

Version 3.2.1.2

Copyright (c) 2013 Oracle and/or its affiliates. All rights reserved.
```

->

Related Information

- [“Rear Panel Components” on page 15](#)
- [“Cabling Requirements” on page 51](#)
- [SPARC T7 Series Servers Administration Guide](#)
- Oracle ILOM documentation

▼ Assign a Static IP Address to the NET MGT Port

If you plan to connect to the SP through its NET MGT port, the SP must have a valid IP address.

By default, the server is configured to obtain an IP address from DHCP services in your network. If the network your server is connected to does not support DHCP for IP addressing, perform this procedure.

Note - To configure the server to support DHCP, refer to the Oracle ILOM documentation.

1. Set the SPM to accept a static IP address.

```
-> set /SP/network pendingipdiscovery=static
Set 'pendingipdiscovery' to 'static'
```

2. Set the IP address for the SP.

Oracle ILOM is shipped with IPv4 DHCP and IPv6 stateless default network settings.

- **To change the default IPv4 DHCP property and set property values for a static IPv4 address, type IPv4_address.**

- **To change the default IPv6 DHCP property and set property values for a static IPv6 address, type IPv6_address.**

This setting configures the host to stop at the ok prompt instead of automatically booting the preinstalled OS.

```
-> set /SP/network pendingipaddress=service-processor-IPaddr
Set 'pendingipaddress' to ' service-processor-IPaddr'
```

For more information about the administration tasks such as modifying default network connectivity settings, refer to the Oracle ILOM documentation.

3. Set the IP address for the SP gateway.

```
-> set /SP/network pendingipgateway=gateway-IPaddr
Set 'pendingipgateway' to 'gateway-IPaddr'
```

4. Set the netmask for the SP.

```
-> set /SP/network pendingipnetmask=255.255.255.0
Set 'pendingipnetmask' to '255.255.255.0'
```

This example uses 255.255.255.0 to set the netmask. Your network environment subnet might require a different netmask. Use a netmask number most appropriate to your environment.

5. Verify that the pending parameters are set correctly.

```
-> show /SP/network
/SP/network
Targets:
Properties:
  commitpending = (Cannot show property)
  dhcp_clientid = xxx.xxx.xxx.xxx
  dhcp_server_ip = xxx.xxx.xxx.xxx
  ipaddress = xxx.xxx.xxx.xxx
  ipdiscovery = dhcp
  ipgateway = xxx.xxx.xxx.xxx
  ipnetmask = 255.255.255.0
  macaddress = xx:xx:xx:xx:xx:xx
  managementport = MGMT
  outofbandmacaddress = xx:xx:xx:xx:xx:xx
  pendingipaddress = service-processor-IPaddr
  pendingipdiscovery = static
  pendingipgateway = gateway-IPaddr
  pendingipnetmask = 255.255.255.0
  pendingmanagementport = MGMT
  sidebandmacaddress = xx:xx:xx:xx:xx:xx
  state = enabled
```

6. Set the changes to the SP network parameters.

```
-> set /SP/network commitpending=true
Set 'commitpending' to 'true'
```

Note - You can type the show /SP/network command again to verify that the parameters have been updated.

7. Set the static IP address when you configure the Oracle Solaris OS.

See [“Configure the Preinstalled OS” on page 71](#).

Related Information

- [“Configure the Preinstalled OS” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM CLI\)” on page 71](#)
- [“Reach a State to Install a Fresh OS \(Oracle ILOM Web Interface\)” on page 73](#)
- [“Oracle Solaris OS Configuration Parameters” on page 75](#)
- [SPARC T7 Series Servers Administration Guide](#)
- Oracle ILOM documentation

Auto Service Request Software

Oracle systems with Oracle Auto Service Request securely transport electronic fault telemetry data to Oracle to expedite the diagnostic process. Oracle ASR software provides the ability to automatically notify Oracle Support and opens a service request on your behalf when specific hardware faults are detected.

The event notification is one-way, requiring no incoming Internet connections or remote access mechanism, and only includes the information needed to solve the problem.

Parts are dispatched upon receipt of the service request. In many cases, Oracle engineers work to resolve the issue before you're even aware the problem exists.

For more information on setting up and installing support automation on the server, please refer to:

[Oracle Auto Service Request Quick Installation Guide.](#)

Or log in to your My Oracle Support account to access the "Oracle Auto Service Request (Doc ID 1185493.1)" knowledge article located at:

<http://support.oracle.com/epmos/faces/DocumentDisplay?id=1185493.1>.

Both documents provide information on the necessary software required for ASR, all needed software downloads URLs, and essential configuration guidelines.

Related Information

- [“Oracle Solaris OS Configuration Parameters” on page 75](#)

Glossary

A

ANSI SIS	American National Standards Institute Status Indicator Standard.
ASR	Auto Service Request.
ASR	Automatic system recovery.
AWG	American wire gauge.

B

BMC	Baseboard management controller.
BOB	Memory buffer on board.

C

chassis	Server enclosure.
CMA	Cable management arm (SPARC T7-1 and SPARC T7-2). Cable management assembly (SPARC T7-4).
CMP	Chip multiprocessor.
CRU	Customer-replaceable unit.

D

DHCP	Dynamic Host Configuration Protocol.
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DMP Dynamic multipathing.

DTE Data terminal equipment.

E

EIA Electronics Industries Alliance.

ESD Electrostatic discharge.

eUSB drive Embedded universal serial bus drive.

F

FRU Field-replaceable unit.

H

HBA Host bus adapter.

host The part of the server or server module with the CPU and other hardware that runs the Oracle Solaris OS and other applications. The term *host* is used to distinguish the primary computer from the SP. See [SP](#).

hot-pluggable Describes a component that can be replaced with power applied, but the component must be prepared for removal.

hot-swappable Describes a component that can be replaced with power applied, and no preparation is required.

I

ID PROM Chip that contains system information for the server or server module.

IP Internet Protocol.

K

KVM Keyboard, video, and mouse. Refers to using a switch to enable sharing of one keyboard, one display, and one mouse with more than one computer.

L

LDom Logical domain managed by Oracle VM Server for SPARC. *See* [Oracle VM Server for SPARC](#).

LwA Sound power level.

M

MAC Machine access code.

MAC address Media access controller address.

MSGID Message identifier.

N

NAC name Network device container name. Physical device address used for remote access, configuration, management. *See* [Oracle ILOM](#) and [SDM name](#).

name space Top-level Oracle ILOM target.

NEBS Network Equipment-Building System (Netra products only).

NET MGT Network management port. An Ethernet port on the server SP.

NIC Network interface card or controller.

NMI Nonmaskable interrupt.

NVMe Nonvolatile memory express controller. The optional NVMe switch card provides NVMe services in the server.

NVMHCI Non-volatile memory host controller interface. A specification for accessing solid-state drives (SSDs) through a PCI Express bus device. *See* [NVMe](#).

O

OBP	OpenBoot PROM. Sometimes OBP is used in file names and messages to indicate a relationship to OpenBoot.
Oracle ILOM	Oracle Integrated Lights Out Manager. Oracle ILOM firmware is preinstalled on a variety of Oracle systems. Oracle ILOM enables you to remotely manage your Oracle servers regardless of the state of the host system.
Oracle Solaris OS	Oracle Solaris operating system.
Oracle VM Server for SPARC	Virtualization server for SPARC platforms.

P

PCI	Peripheral component interconnect.
PCIe	PCI Express, an industry-standard bus architecture that supports high-bandwidth peripherals and I/O devices.
POST	Power-on self-test.
PROM	Programmable read-only memory.
PSH	Predictive self healing.

S

SAS	Serial attached SCSI.
SCC	System configuration chip.
SCC PROM	System configuration chip on programmable read-only memory. Removable module containing system configuration data.
SDM name	Simplified data model name. A way of providing device information on Oracle ILOM consistently across different types of servers. See NAC name .
SER MGT port	Serial management port. A serial port on the server SP.

SFF	Small form factor.
SP	Service processor. In the server, the SP is a card with its own OS that is operating and accessible whenever the server power cords are connected and energized, regardless of host power state. The SP processes Oracle ILOM commands providing lights out management control of the host. See host .
SPM	Service processor module. This is the physical component that contains the service processor firmware.
SSD	Solid-state drive.
SSH	Secure shell.

T

Tma	Maximum ambient temperature.
------------	------------------------------

U

U.S. NEC	United States National Electrical Code.
UCP	Universal connector port.
UI	User interface.
UL	Underwriters Laboratory Inc.
UTC	Coordinated Universal Time.
UUID	Universal unique identifier.

W

WWN	World wide name. A unique number that identifies a SAS target.
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