

SPARC T3-4 Server

Installation Guide



Part No.: E23514-02
August 2012

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Using This Documentation

This installation guide provides instructions, background information, and reference material to help you install Oracle's SPARC T3-4 server. These installation instructions assume that a system administrator is experienced with the Oracle Solaris 10 Operating System.

Note – All internal components except hard drives must be installed by qualified service technicians only.

- “Related Documentation” on page vii
- “Feedback” on page viii
- “Support and Accessibility” on page viii

Related Documentation

Documentation	Links
All Oracle products	http://www.oracle.com/documentation
SPARC T3-4 server	http://www.oracle.com/pls/topic/lookup?ctx=E19417-01&id=homepage
Integrated Lights Out Manager (ILOM) 3.0	http://www.oracle.com/pls/topic/lookup?ctx=E19860-01&id=homepage

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Provide feedback on this documentation at:

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Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	http://support.oracle.com
	For hearing impaired: http://www.oracle.com/accessibility/support.html
Learn about Oracle's commitment to accessibility	http://www.oracle.com/us/corporate/accessibility/index.html

Preparing for Installation

These topics provide background information needed to install the SPARC T3-4 server.

- [“Installation Task Overview”](#) on page 1
- [“Server Overview”](#) on page 2
- [“Confirming Server Specifications”](#) on page 5
- [“Inventory List”](#) on page 9
- [“Server Handling Precautions”](#) on page 11
- [“ESD Precautions”](#) on page 11
- [“Tools Needed for Installation”](#) on page 12
- [“Optional Component Installation”](#) on page 12

Related Information

- [“Installing the Server”](#) on page 15

Installation Task Overview

Step	Description	Links
1	Review the <i>SPARC T3-4 Server Product Notes</i> for any late-breaking news about the server.	<i>SPARC T3-4 Server Product Notes</i>
2	Review the server specifications and site requirements.	“Confirming Server Specifications” on page 5
3	Confirm that you have received all the items you ordered, familiarize yourself with ESD and safety precautions, and assemble the required tools.	“Server Handling Precautions” on page 11 “ESD Precautions” on page 11 “Tools Needed for Installation” on page 12

Step	Description	Links
4	Install the server into an equipment cabinet.	“Installing the Server” on page 15
5	Attach data and server management cables to the server.	“Cabling Requirements” on page 31 “Rear Panel Connectors and Ports” on page 34 “Install the CMA” on page 36
6	Connect power cords to the server, configure the service processor, power on the server for the first time, and set up the operating system.	“Powering On the Server for the First Time” on page 43

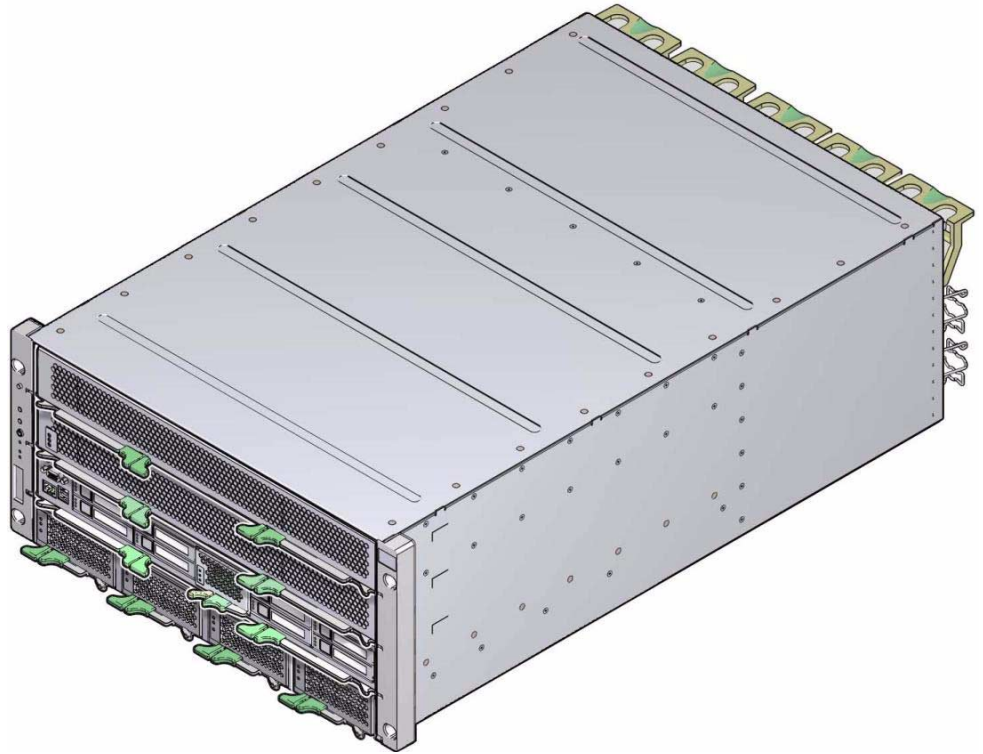
Related Information

- [“Server Handling Precautions” on page 11](#)
- [“ESD Precautions” on page 11](#)
- [“Tools Needed for Installation” on page 12](#)
- [“Installing the SPARC T3-4 Server” on page 13](#)
- [“Powering On the Server for the First Time” on page 43](#)

Server Overview

The SPARC T3-4 is a 5-rack unit (5U) server.

FIGURE: SPARC T3-4 Server



Component/Function	New Characteristics
Processor	Up to 4x SPARC T3, 1.65 GHz, 16-core chip multiprocessor (CMP) with 8 threads per core. 2x multiprocessor configuration also available.
Memory	16x DDR3 DIMM slots; 4GB and 8GB capacity modules.
I/O - Expansion	16x PCIe Gen2 card slots. 4x Gigabit Ethernet ports. 4x USB ports. Optional 8x 10-Gigabit Ethernet ports.
Hard drive storage	8-disk capable backplane supporting any mix of hard drives and solid state drives.
Service processor	Modular, pluggable on the motherboard.

FIGURE: Front Panel Ports

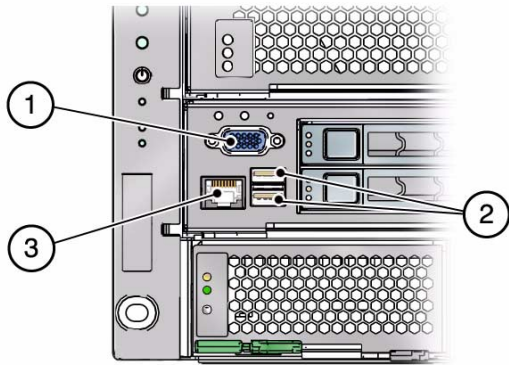


Figure Legend

-
- 1 VGA port
 - 2 USB ports
 - 3 SER MGT port
-

FIGURE: Back Panel Ports

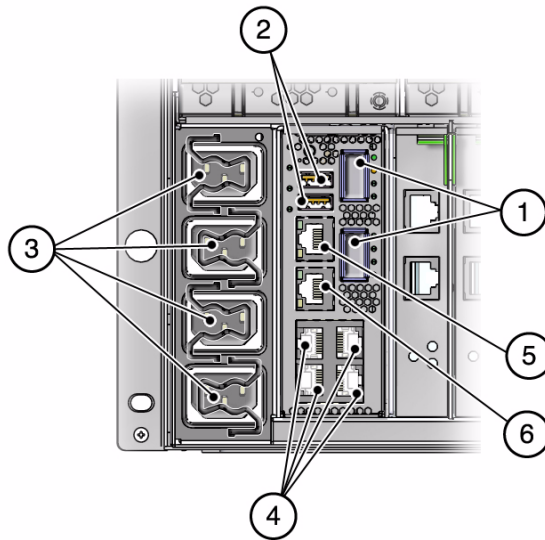


Figure Legend

-
- 1 QSFP ports
 - 2 USB ports
 - 3 AC power ports
 - 4 Gigabit Ethernet ports
 - 5 SER MGT port
 - 6 NET MGT port
-

Related Information

- [“Confirming Server Specifications”](#) on page 5
- [“Inventory List”](#) on page 9
- [“Server Handling Precautions”](#) on page 11
- [“Tools Needed for Installation”](#) on page 12

Confirming Server Specifications

These topics include server physical, environmental, and electrical specifications.

- [“Physical Specifications”](#) on page 6

- [“Electrical Specifications” on page 6](#)
- [“Input Power Information” on page 7](#)
- [“Environmental Specifications” on page 8](#)
- [“Acoustic Noise Emissions” on page 9](#)

Related Information

- [“Server Overview” on page 2](#)
- [“Server Handling Precautions” on page 11](#)
- [“ESD Precautions” on page 11](#)
- [“Optional Component Installation” on page 12](#)
- [“Identifying the Server Ports” on page 59](#)

Physical Specifications

Description	U.S.	Metric
Width	17.5 in.	445 mm
Depth	27.6 in.	700 mm
Height	8.62 in. (5U)	219 mm
Weight, approximate (without rackmount kit)	175 lb (max.)	79 kg (max.)
Minimum service access clearance (front)	36 in.	91 cm
Minimum service access clearance (rear)	36 in.	91 cm

Related Information

- [“Electrical Specifications” on page 6](#)
- [“Input Power Information” on page 7](#)
- [“Environmental Specifications” on page 8](#)

Electrical Specifications

The SPARC T3-4 server has four autoranging power supplies. To ensure redundant operation of the power supplies, connect the power cords to at least two separate AC circuits.

Use these specifications only as a planning guide. For more precise power values, make power measurements on your specific server configuration using your planned workload.

Description	Specification
General Specifications	
Operating input voltage range	200 to 240 VAC, 50 to 60 Hz (VAC tolerance +/- 10%)
Maximum operating input current at 200 VAC	12.6 A
Maximum operating input power at 200 VAC	2400 W
Maximum heat dissipation	7030 BTU/hour or 7417 kJ/hour
Maximum standby power	55 W
Maximum Server Configuration Specifications	
Under Nominal Temperature and Voltage Conditions	
4 CMP, 1.65 GHz, 64 cores, 64 x 8-GByte DDR3 DIMMs, 8 HDDs, 16 I/O cards	
Idle AC input power	1500 W
Peak AC input power running SpecJBB	2300 W
Minimum Server Configuration Specifications	
Under Nominal Temperature and Voltage Conditions	
2 CMP, 1.65 GHz, 32 cores, 16 x 4-GByte DDR3 DIMMs, no HDDs, no I/O cards	
Idle AC input power	1250 W
Peak AC input power running SpecJBB	1450 W

Related Information

- [“Input Power Information” on page 7](#)
- [“Environmental Specifications” on page 8](#)
- *SPARC T3-4 Server Service Manual*

Input Power Information

The maximum operating current values are based on P/V using the following equation: $P / (V * 0.95) = A$

Use this formula to calculate server maximum operating current at the input voltage at your facility.

For example: $1060W / (220V * 0.95) = 5.1A$

Related Information

- [“Electrical Specifications” on page 6’](#)

Environmental Specifications

Specification	Operating	Nonoperating
Temperature	<ul style="list-style-type: none"> • Sea level to 2953 ft. (900m): 41°F to 95°F (5°C to 35°C) 	-40°F to 149°F (-40°C to 65°C)
	<ul style="list-style-type: none"> • Above 2953 ft. (900m): Decrease the maximum allowable temperature by 1.6°F/1000 ft (1°C/300m) 	IEC 60068-2-1 Test Ab and 60068-2-2 Test Bb
	IEC 60068-2-1 Test Ad, and 60068-2-2 Test Bd	
Relative Humidity	10 to 90% RH, 27°C maximum wet bulb (noncondensing)	93% RH, 35°C maximum wet bulb (noncondensing)
	IEC 60068-2-56 Test Cb	IEC 60068-2-56 Test Cb
Altitude	10,000 ft. (3,000m)	40,000 ft. (12,000m)
	IEC 60068-2-13 Test M, and 60068-2-41 Test Z/BM	IEC 60068-2-13 Test M
Vibration	0.15 G (z-axis), 0.10 G (x-, y-axes), 5-500Hz swept sine	0.5 G (z-axis), 0.25 G (x-, y-axes), 5-500Hz swept sine
	IEC 60068-2-6 Test Fc	IEC 60068-2-6 Test Fc

Specification	Operating	Nonoperating
Shock	3 Gs, 11 ms half-sine IEC 60068-2-27 Test Ea	<ul style="list-style-type: none"> Roll-off: 1-inch roll-off free fall, front to back rolling directions Threshold: 25 mm threshold height at 0.75 m/s impact velocity ETE-1010-02 Rev A

Related Information

- [“Physical Specifications” on page 6](#)
- [“Input Power Information” on page 7](#)

Acoustic Noise Emissions

Declared noise emissions for the SPARC T3-4 server is in accordance with ISO 9296 standards.

Description	Operating at Idle	Operating at Maximum Power
Sound power level, LwAd (1 B = 10 dB)	7.4 B	8.2 B
Sound Pressure Level, LpAm (bystander positions)	63 dBA	68.2 dBA

Related Information

- [“Input Power Information” on page 7](#)
- [“Environmental Specifications” on page 8](#)

Inventory List

FIGURE: [Inventory List on page 10](#) illustrates the components that are shipped with the server.

FIGURE: Inventory List

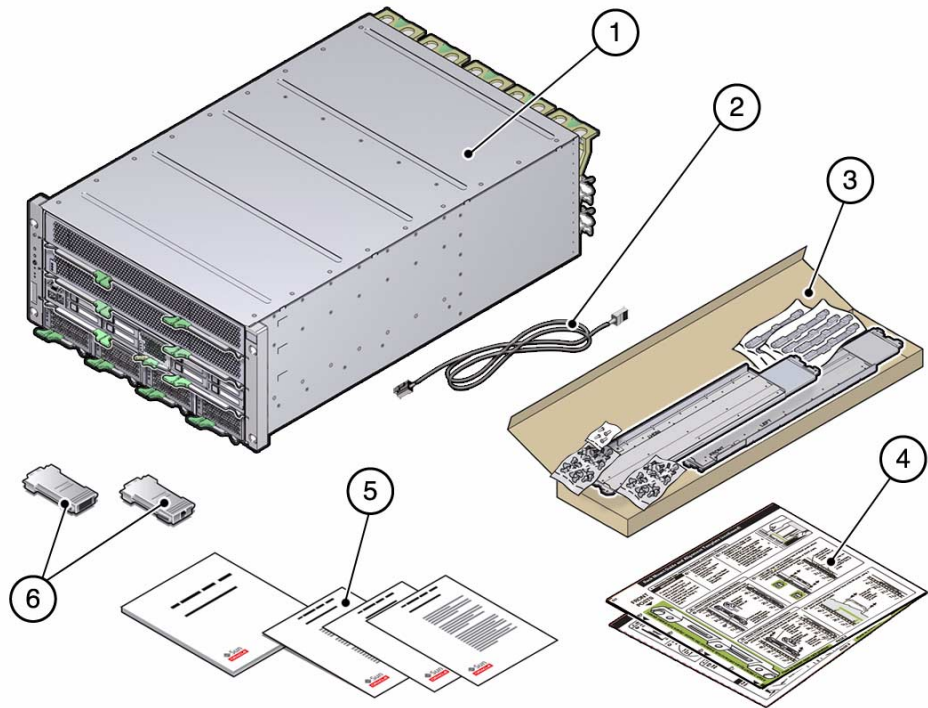


Figure Legend

-
- | | |
|---|--------------------|
| 1 | SPARC T3-4 Server |
| 2 | Ethernet cable |
| 3 | Rackmount kit |
| 4 | Rackmount template |
| 5 | Print document kit |
| 6 | Cable adaptors |
-

Related Information

- [“Installation Task Overview”](#) on page 1
- [“Server Overview”](#) on page 2
- [“Rackmount Kit Contents”](#) on page 16

Server Handling Precautions



Caution – Deploy the anti-tilt 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 – A fully configured SPARC T3-4 server weighs approximately 175 lb. (79 kg). An equipment lift is required to lift and mount this server into a rack enclosure when using the procedures in this document.



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

Related Information

- [“ESD Precautions” on page 11](#)

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

- [“Server Handling Precautions” on page 11](#)

Tools Needed for Installation

To install the server, you must have the following tools:

- Long No. 2 Phillips screwdriver
- Cutters or heavy-duty scissors
- Marking pen or tape
- ESD mat and grounding strap
- Hydraulic or mechanical lift

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

- ASCII terminal
- Workstation
- Terminal server
- Patch panel connected to a terminal server

Related Information

- [“Server Handling Precautions” on page 11](#)
- [“ESD Precautions” on page 11](#)

Optional Component Installation

The standard components of the server are installed at the factory. However, if you ordered options such as additional memory or PCI cards, these will be shipped separately. If possible, install these components prior to installing the server in a rack. See the *SPARC T3-4 Server Service Manual* for specific installation instructions.

Note – The list of optional components can be updated without notice. See the product web pages for the most current list of components supported in the server.

Related Information

- [“Tools Needed for Installation” on page 12](#)

Installing the Server

These topics describe how to install the server into an equipment cabinet equipped with square mounting holes. If you are installing the server into a cabinet equipped with round mounting holes, see [“Determine Correct Rackmount Hardware”](#) on page 18.

Note – If your rackmount kit came with its own instructions, use the instructions in your rackmount kit instead of the instructions in this chapter. After performing the server installation, proceed to [“Powering On the Server for the First Time”](#) on page 43 for first-time power on.

If you are shipping the equipment rack to another location for final installation, or installing the server into a vehicle, install the shipping bracket assembly. See [“Installing and Using the Shipping Bracket Assembly \(Optional\)”](#) on page 25.

These topics include the following:

- [“Rack Compatibility”](#) on page 16
- [“Rackmount Kit Contents”](#) on page 16
- [“Determine Correct Rackmount Hardware”](#) on page 18
- [“Mark the Rackmounting Location”](#) on page 18
- [“Install the Rackmount Hardware”](#) on page 19
- [“Install the Server”](#) on page 23
- [“Installing and Using the Shipping Bracket Assembly \(Optional\)”](#) on page 25

Related Information

- [“Preparing for Installation”](#) on page 1
- [“Connecting the Server Cables”](#) on page 31
- [“Powering On the Server for the First Time”](#) on page 43

Rack Compatibility

The rackmount kit is compatible with equipment racks that meet the following standards:

- Four-post structure (mounting at both front and rear).

Note – Two-post racks are not compatible.

- Rack horizontal opening and unit vertical pitch conforming to ANSI/EIA 310-D-1992 or IEC 60927 standards.
- Distance between front and rear mounting planes between 24 to 36 inches (65 cm and 91.5 cm).
- Minimum clearance depth (to front cabinet door) in front of front rackmount plane: 1 inch (25.4 mm).
- Minimum clearance depth (to rear cabinet door) behind front rackmount plane: 34.6 inches (88 cm) with cable management assembly (*recommended*) or 31.5 inches (80 cm) without the cable management assembly.
- Minimum clearance width (between structural supports and cable troughs) between front and rear mounting planes: 18.9 inches (48 cm).

Related Information

- [“Tools Needed for Installation”](#) on page 12
- [“Rackmount Kit Contents”](#) on page 16
- [“Determine Correct Rackmount Hardware”](#) on page 18

Rackmount Kit Contents

The rackmount kit has two shelf rails, one for each side of the rack. Each shelf rail is marked *LEFT* or *RIGHT*. (FIGURE: [Rackmount Kit](#) on page 17).

The *shelf rails* are mounted to the rack or cabinet with four *adaptor brackets*. The shelf rails adjust to fit rack depths from 25 to 34.25 in. (63.5 to 87 cm).

FIGURE: Rackmount Kit

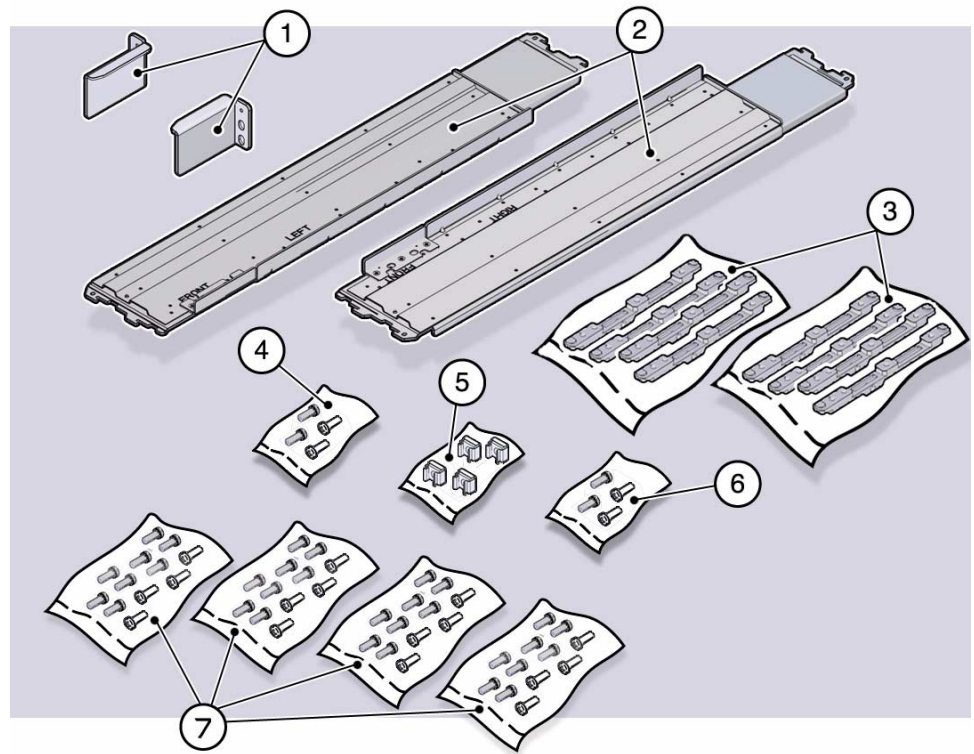


Figure Legend

-
- 1 Upper rear brackets
 - 2 Shelf rails
 - 3 Adaptor brackets (two types provided)
 - 4 Flathead screws
 - 5 Threaded inserts
 - 6 M6 screws
 - 7 Rackmount screws
-

Related Information

- [“Tools Needed for Installation”](#) on page 12
- [“Installing the Rackmount Kit”](#) on page 13
- [“Rack Compatibility”](#) on page 16
- [“Determine Correct Rackmount Hardware”](#) on page 18
- [“Installing and Using the Shipping Bracket Assembly \(Optional\)”](#) on page 25

▼ Determine Correct Rackmount Hardware

- Use the following table to determine the hardware needed for your rack installation.

Cabinet Type	Fastener Bags Required
Square hole	SCREW, SEMS, M6 X 16 CAGENUTS, M6 SCREW, FLAT HEAD, M4 X 10
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.

▼ Mark the Rackmounting Location

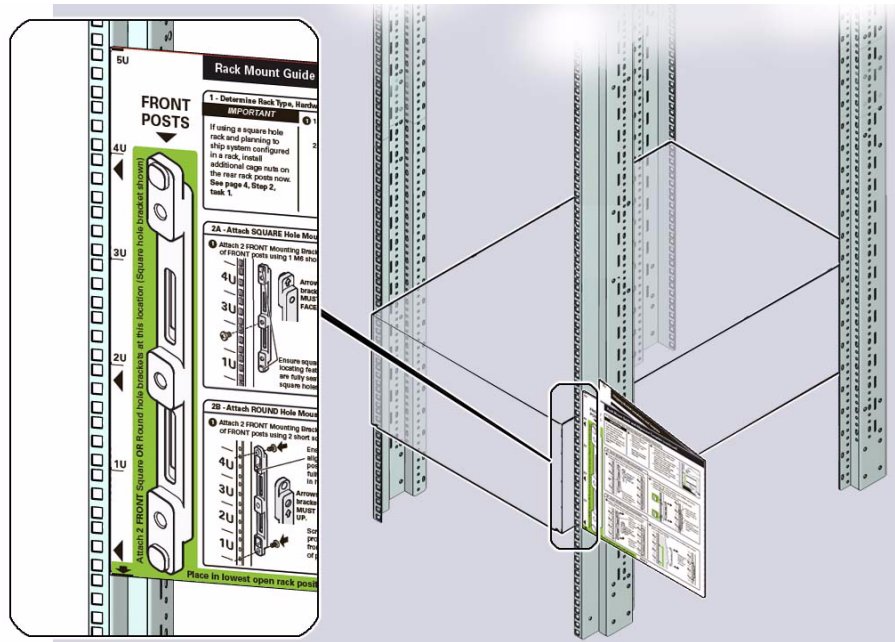
Use the rackmounting template to identify the correct mounting holes for the shelf rails.

Note – Load the rack from bottom to top.

1. Ensure that there is enough vertical space in the cabinet to install the server.

2. Place the rackmounting 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.

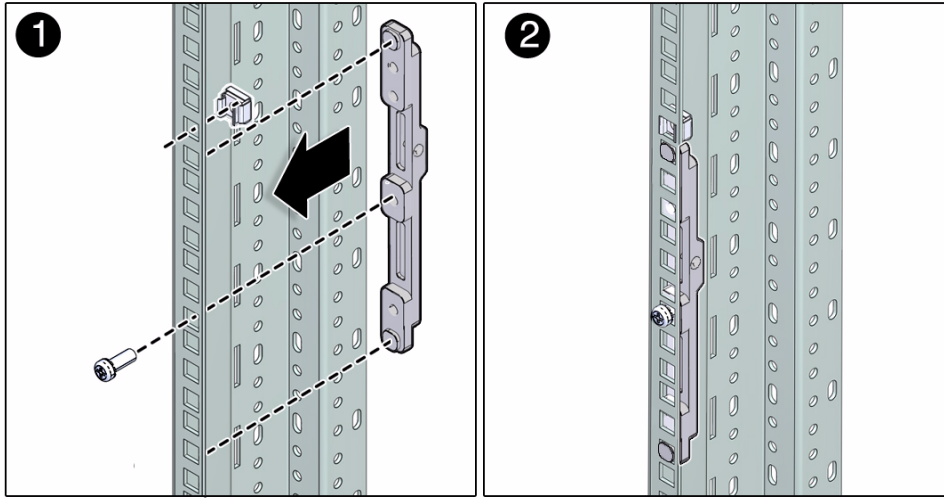
▼ Install the Rackmount Hardware

1. Repeat the following steps for both the left and right front mounting points:

- a. Place the adaptor bracket in the marked location.

Note – An “up” arrow indicates proper orientation.

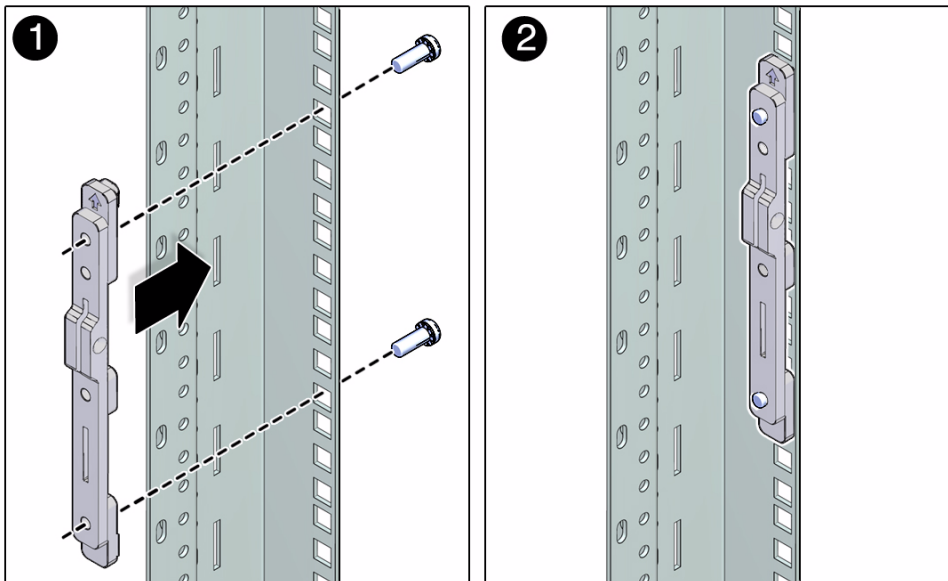
- b. Secure the adaptor bracket, with one No. 2 Phillips screw in the center hole.
- c. Insert a mounting clip in the hole just above the top of the rack rail bracket.



2. Repeat the following steps for both the left and right rear mounting points:
- Place the adaptor bracket in the marked location.

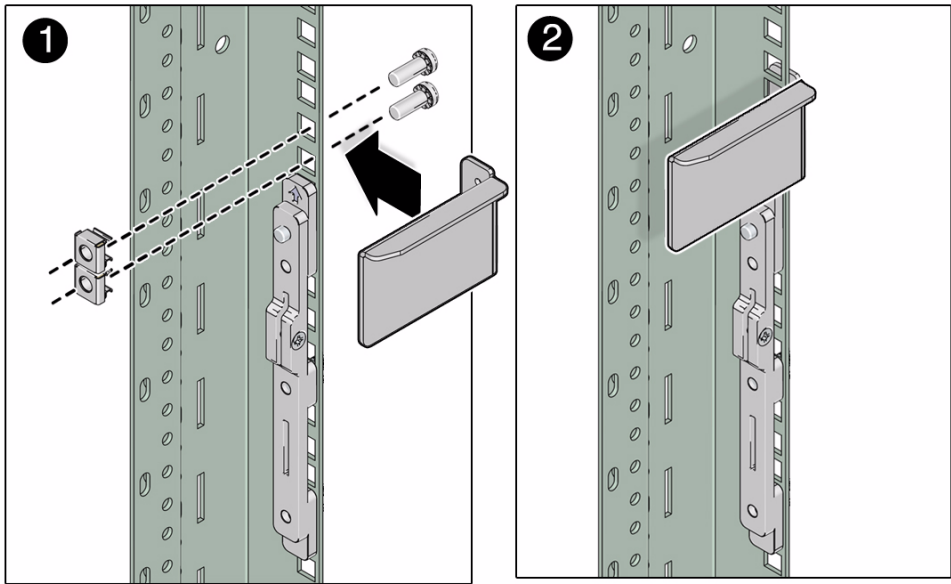
Note – An “up” arrow indicates proper orientation.

- Secure the adaptor bracket top and bottom holes, with two No. 2 Phillips screws.



3. Install the left and right upper corner brackets.

- a. Install two cage nuts into the cabinet in the two holes above the tops of the adaptor brackets.**



- b. Secure each upper corner bracket with two No. 2 Phillips screws.**

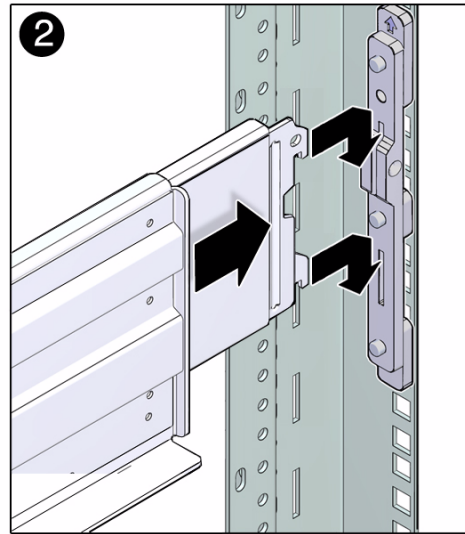
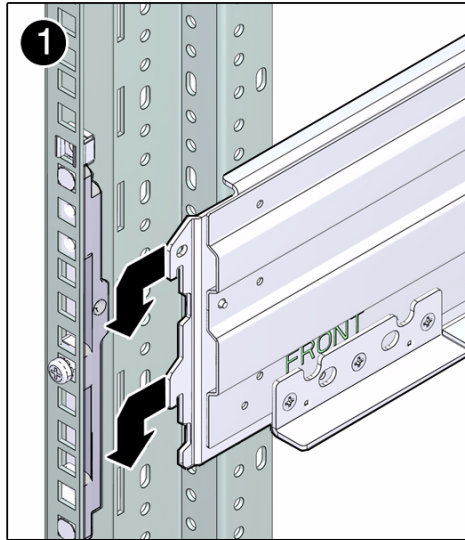
4. Install the shelf rails.

Note – The shelf rails are marked “Left” and “Right” (as viewed from the front of the server) and “Front” and “Rear.”

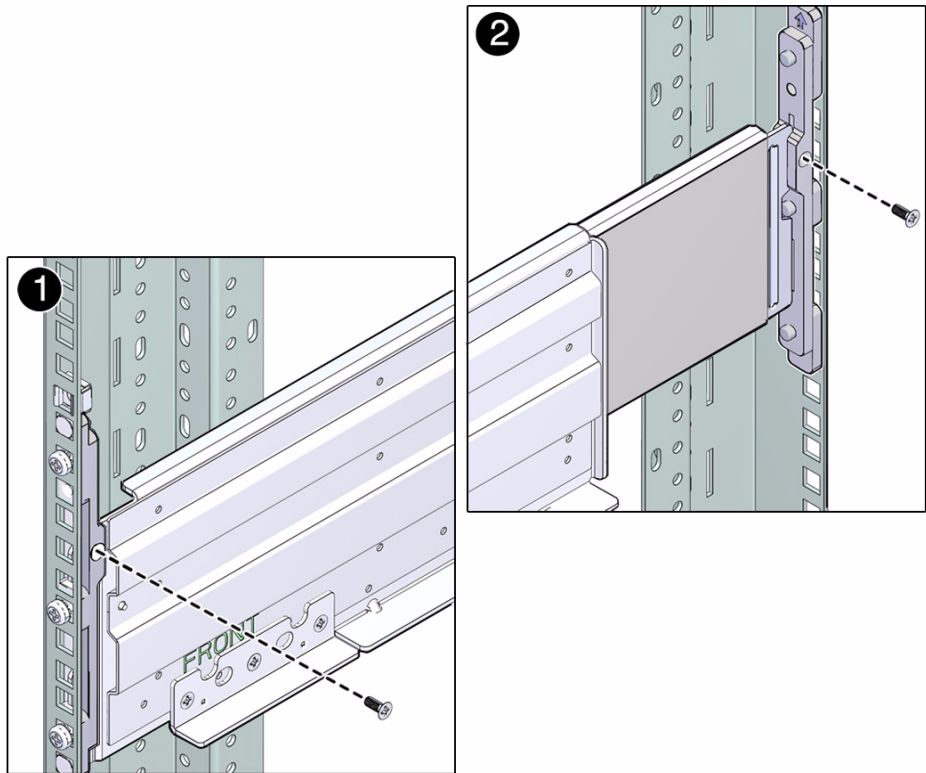
Repeat for left and right shelf rails:

- a. Insert the front of the shelf rail into the front adaptor bracket.**
b. Insert the rear of the shelf rail into the rear adaptor bracket.

The shelf rail slides in and out to fit cabinets of different depths.



c. Secure each shelf rail with two flat-head No. 2 Phillips screws.



▼ Install the Server



Caution – A fully configured server weighs 175 lbs (80 kg). Use a mechanical lift to install the server into the rack.

1. Ensure the mechanical lift is level and stable.
2. Lift the server up to the correct height.
3. Slide the server into the rack.

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

FIGURE: Installing the Server

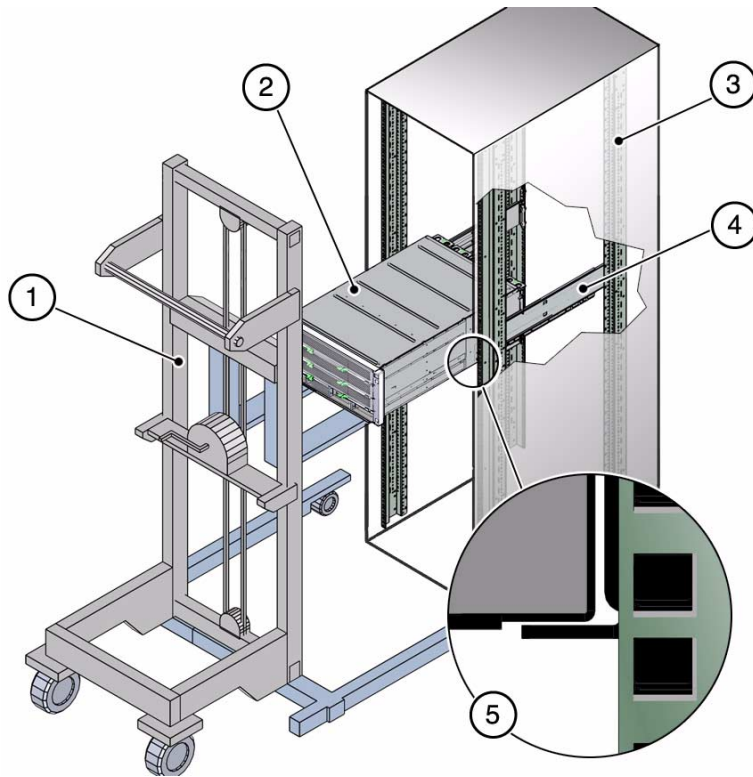


Figure Legend

-
- 1 Mechanical lift
 - 2 SPARC T3-4 server
 - 3 Cabinet
 - 4 Shelf rail
 - 5 Ensure server mounted above shelf rail
-

4. Secure the server to the front panel using four No. 2 Phillips screws.

Installing and Using the Shipping Bracket Assembly (Optional)

Use this set of procedures if you are installing the server into an equipment rack that will be shipped to another location, or if you are installing the server into a vehicle.

Note – This procedure describes how to install the server into a cabinet with square mounting holes. If you are installing the server into a cabinet with round mounting holes, see [“Determine Correct Rackmount Hardware”](#) on page 18.

This topic includes the following sections:

- [“Shipping Bracket Kit Contents”](#) on page 25
- [“Determine Correct Shipping Bracket Fasteners”](#) on page 26
- [“Install the Front Shipping Bracket”](#) on page 27
- [“Install the Rear Shipping Bracket”](#) on page 28

Related Information

- [“Rack Compatibility”](#) on page 16
- [“Rackmount Kit Contents”](#) on page 16
- [“Determine Correct Rackmount Hardware”](#) on page 18
- [“Mark the Rackmounting Location”](#) on page 18
- [“Install the Server”](#) on page 23

Shipping Bracket Kit Contents

The optional shipping bracket kit provides extra shock and vibration protection. Use this kit when installing the server into a vehicle, or when you are installing the server into an equipment cabinet that will be shipped to another location for final installation.

FIGURE: Shipping Bracket Kit

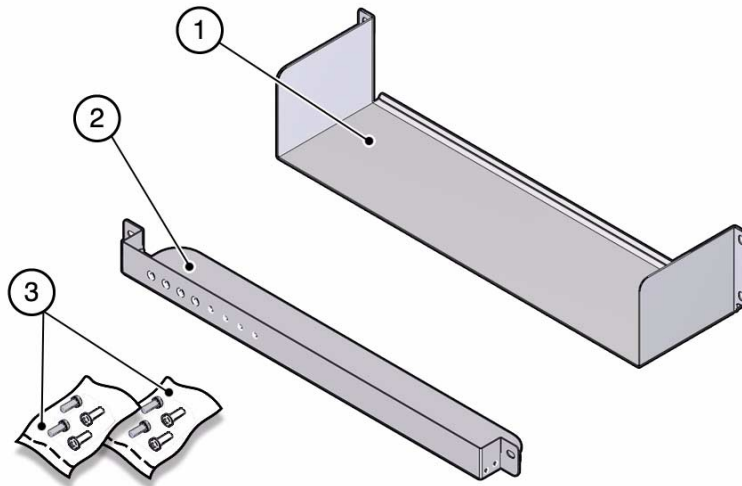


Figure Legend

-
- | | |
|---|------------------------|
| 1 | Rear shipping bracket |
| 2 | Front shipping bracket |
| 3 | Fasteners |
-

Related Information

- [“Tools Needed for Installation”](#) on page 12
- [“Rack Compatibility”](#) on page 16
- [“Determine Correct Rackmount Hardware”](#) on page 18
- [“Mark the Rackmounting Location”](#) on page 18
- [“Determine Correct Shipping Bracket Fasteners”](#) on page 26

▼ Determine Correct Shipping Bracket Fasteners

- Use the following table to determine the correct fasteners for your shipping bracket installation.

Cabinet Type	Fastener Bags Required
Square hole with corner bezel	SCREW, SEMS, M6 X 16MM SCREW, SEMS, M6 X 30MM
Tapped hole (10-32)	SCREW, SEMS, 10-32 X 1-1/4" SCREW, SEMS, 10-32 X 10MM
Tapped hole (M6)	SCREW, SEMS, M6 X 16MM SCREW, SEMS, M6 X 30MM

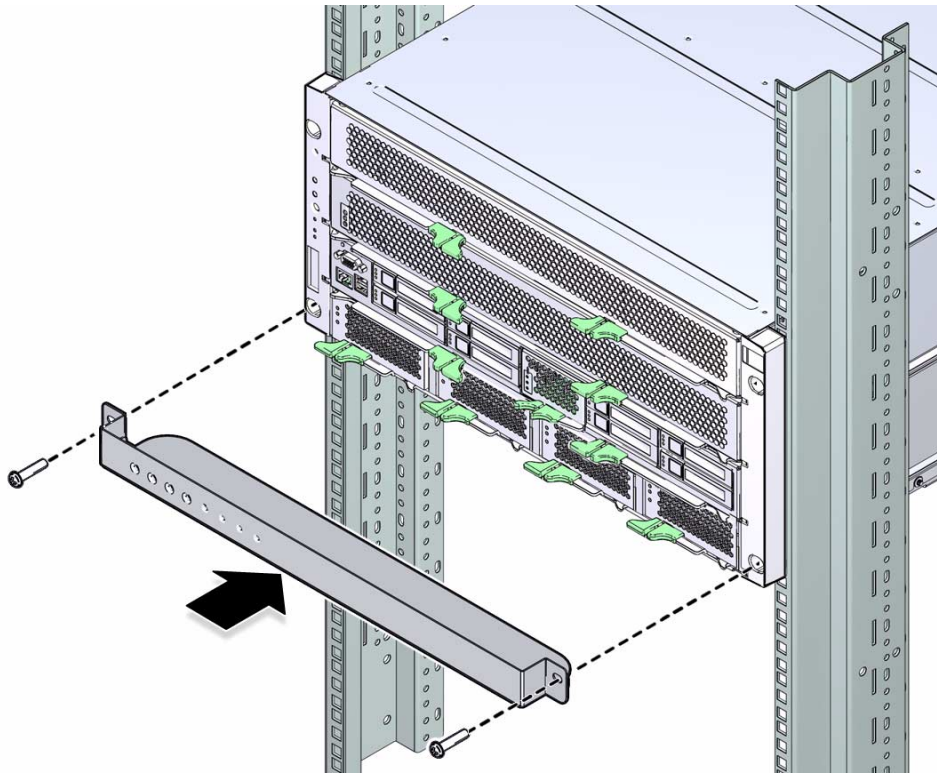
Note – Some fastener bags are not required to install this server.

▼ Install the Front Shipping Bracket

1. **Remove the bottom two front panel mounting screws.**

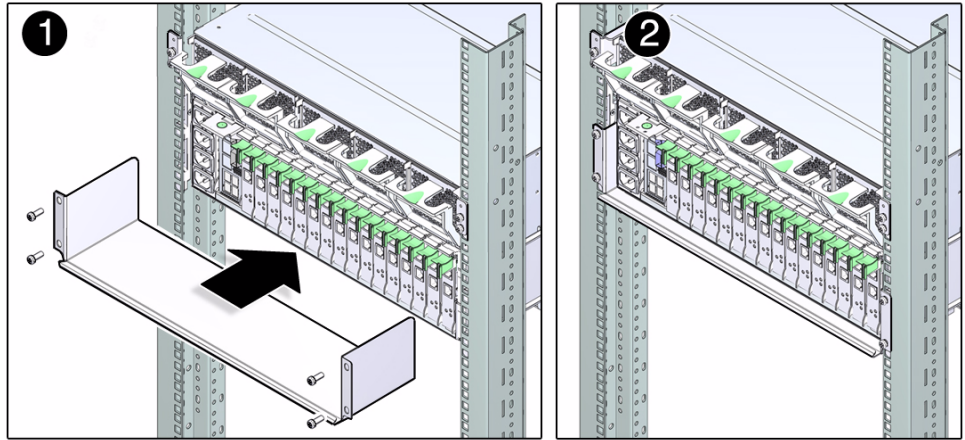
Note – Use the tapped holes in the front shipping bracket to secure these screws for later use.

2. **Hold the front shipping bracket in place.**
3. **Secure the front shipping bracket with two long screws.**



▼ Install the Rear Shipping Bracket

- 1. Remove the bottom two rear rackmount screws on each side (four total).**
The server is held in place by the top four screws (two on each side).
- 2. Hold the lower shipping bracket in place.**
- 3. Install two No. 2 Phillips screws in the bottom holes of the lower shipping bracket.**



▼ Remove the Front Shipping Bracket

Remove the front shipping bracket after the server cabinet reaches its final destination.

1. Remove the two short No. 2 Phillips screws that are stored with the shipping bracket.
2. Remove the two screws that secure the front shipping bracket to the cabinet.
3. Slide the front shipping bracket out from the front of the cabinet.
4. Install the two short No. 2 Phillips screws into the lower two front panel screws.
Use the screws that were stored in the front shipping bracket during transit.

Connecting the Server Cables

This topic contains the following sections:

- [“Cabling Requirements” on page 31](#)
- [“Front Panel Connectors and Ports” on page 33](#)
- [“Rear Panel Connectors and Ports” on page 34](#)
- [“Installing and Using the CMA \(Optional\)” on page 35](#)
- [“Connect the SER MGT Cable” on page 38](#)
- [“Connect the NET MGT Cable” on page 39](#)
- [“Connect the Ethernet Network Cables” on page 40](#)
- [“Connect Other Data Cables” on page 40](#)
- [“Prepare Power Cords” on page 40](#)

Related Information

- [“Preparing for Installation” on page 1](#)
- [“Installing the Server” on page 15](#)
- [“Powering On the Server for the First Time” on page 43](#)
- [“Identifying the Server Ports” on page 59](#)

Cabling Requirements

- Minimum cable connections for the server:
 - At least one server on-board Ethernet network connection (NET port)
 - The service processor serial management port (SER MGT port)
 - The service processor network management port (NET MGT port)
 - Power cables for the server power supplies
- **Service processor management ports:** There are two service processor management ports for use with the ILOM service processor.

- The service processor serial management port (labeled SER MGT) uses an RJ-45 cable and is always available. This port is the default connection to the ILOM service processor.
- The service processor network management port (labeled NET MGT) is the optional connection to the ILOM service processor. 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 Service Processor” on page 49](#). The service processor network management port uses an RJ-45 cable for a 10/100 BASE-T connection. This port does not support connections to Gigabit networks.
- Ethernet ports are labeled NET0, NET1, NET2, and NET3. The Ethernet interfaces operate at 10 Mbps, 100 Mbps, and 1000 Mbps.

Connection Type	IEEE Terminology	Transfer Rate
Ethernet	10BASE-T	10 Mbit/sec
Fast Ethernet	100BASE-TX	100 Mbits/sec
Gigabit Ethernet	1000BASE-T	1000 Mbit/sec

- **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 only perform USB hot-plug operations 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 ILOM service processor initializes as soon as the AC power cables are connected to the power source. System messages might be lost after 60 seconds if the server is not connected to a terminal, PC, or workstation.

Related Information

- [“Confirming Server Specifications” on page 5](#)
- [“Server Handling Precautions” on page 11](#)
- [“Rear Panel Cable Connections Reference” on page 24](#)
- [“Secure Cables Using the CMA” on page 37](#)

Front Panel Connectors and Ports

FIGURE: Front Panel connectors

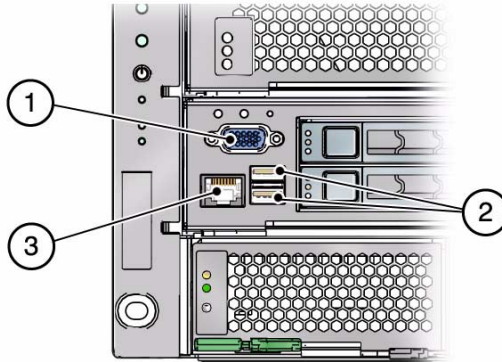


Figure Legend

-
- 1 VGA port
 - 2 USB ports
 - 3 SER MGT port
-

Rear Panel Connectors and Ports

FIGURE: Rear Panel Connectors

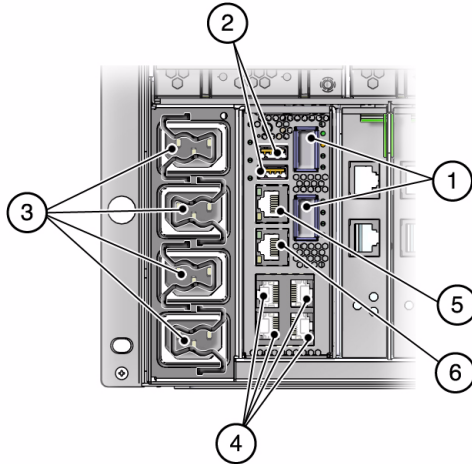


Figure Legend

-
- | | |
|---|------------------------|
| 1 | QCFP ports |
| 2 | USB ports |
| 3 | AC power ports |
| 4 | Gigabit Ethernet ports |
| 5 | SER MGT port |
| 6 | NET MGT Port |
-

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.

Related Information

- [“Server Handling Precautions”](#) on page 11
- [“ESD Precautions”](#) on page 11
- [“Cabling Requirements”](#) on page 31
- [“Install the CMA”](#) on page 36
- [“Secure Cables Using the CMA”](#) on page 37

Installing and Using the CMA (Optional)

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

This topic includes the following:

- “About the CMA” on page 35
- “Determine Correct CMA Hardware” on page 36
- “Install the CMA” on page 36
- “Secure Cables Using the CMA” on page 37

About the CMA

FIGURE: Cable Management Assembly (CMA)

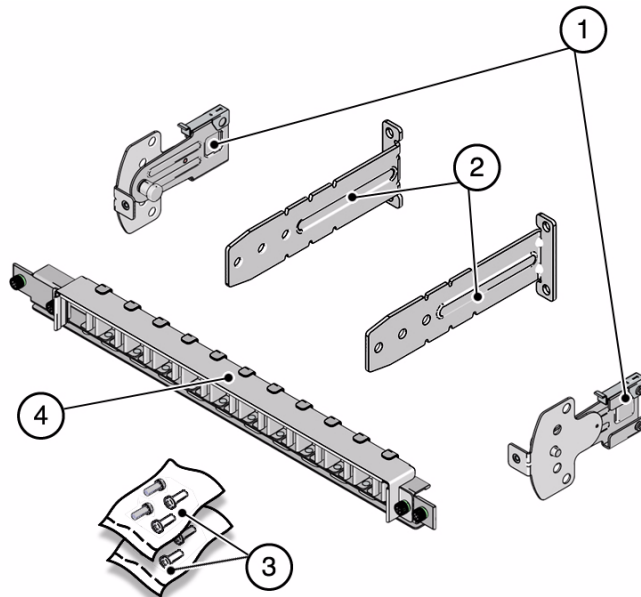


Figure Legend

1 Swivel mounts

Figure Legend (Continued)

-
- | | |
|---|--------------|
| 2 | "L" brackets |
| 3 | Fasteners |
| 4 | CMA |
-

▼ Determine Correct CMA Hardware

- Use the following table to determine the hardware needed for your CMA installation.

Cabinet Type	Fastener Bags Required
Square hole	SCREW, SEMS, M6 X 16
Round Hole (M6) (all types)	
Round hole (10-32) (all types)	SCREW, SEMS, 10-32 X 7/16"

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

▼ Install the CMA

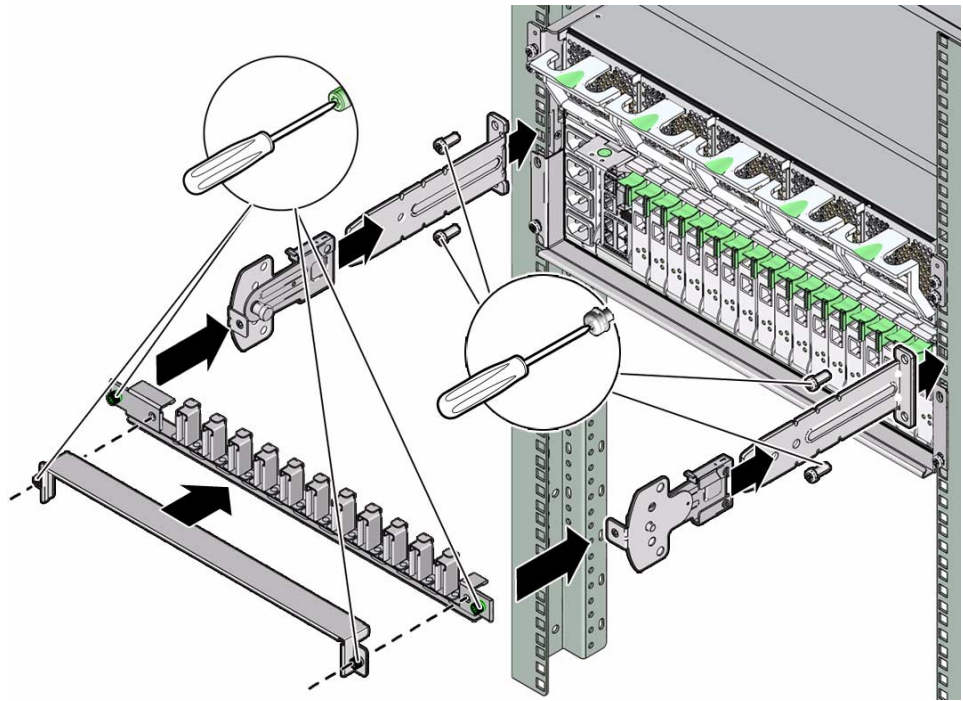
The CMA is attached to the center rear of the server.

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

1. Install the L brackets at the rear . The brackets are marked "Left" and "Right" as viewed from the back of the server.

Repeat for left and right sides:

- a. Identify the "left" and "right" side brackets.
- b. Remove the two middle screws from the rackmount adaptor.
- c. Place the bracket over the center two mounting holes.
- d. Secure each mounting bracket with two No. 2 Phillips screws.



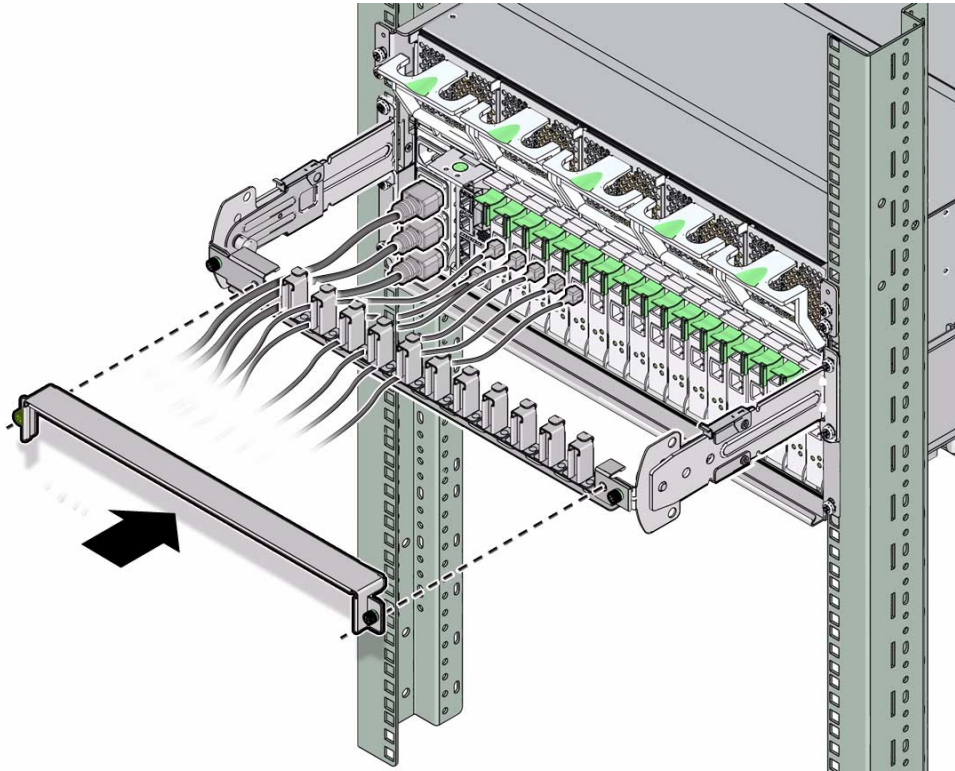
2. Slide the left and right swivel clips into the left and right L brackets.
3. Secure the CMA with the two captive screws.

▼ Secure Cables Using the CMA

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

1. Remove the CMA cover.

The CMA cover is secured with two No. 2 Phillips screws.



2. Place system cables into appropriate slots in the CMA.

3. Install the CMA cover.

The cover is secured with two No. 2 Phillips screws.

▼ Connect the SER MGT Cable

The service processor serial management port is marked SER MGT. See [“Front Panel Connectors and Ports”](#) on page 33 and [“Rear Panel Connectors and Ports”](#) on page 34 for connector locations.

- **Connect a Category 5 cable from the service processor 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 43](#).

When connecting either a DB-9 or a DB-25 cable, use an adapter to perform the crossovers given for each connector.

Note – Use the service processor serial management port *only* for server management. It is the default connection between the service processor and a terminal or a computer.



Caution – Do not attach a modem to the service processor serial management port.

▼ Connect the NET MGT Cable

- **Connect a Category 5 cable from the service processor network management port to your network switch or hub. See [“Rear Panel Connectors and Ports” on page 34](#) for connector locations.**

The service processor network management port is labeled NET MGT. This port is not operational until you configure the network settings (through the serial management port), as detailed in [“Log In to the Service Processor Using the SER MGT Port” on page 50](#).

If you have access to a DHCP server on the network, you can see the service processor get an IP address because the DHCP client is enabled by default.

Note – The NET MGT port is configured by default to retrieve network settings with DHCP and allow connections using SSH. You might need to modify these settings for your network. Instructions are given in [“Powering On the Server for the First Time” on page 43](#).

▼ Connect the Ethernet Network Cables

The server has four network connectors, marked NET0, NET1, NET2, and NET3. These connectors are RJ-45 Gigabit Ethernet. See [“Rear Panel Connectors and Ports” on page 34](#) for connector locations.

Note – The ILOM sideband management feature enables you to access the SP using one of these Ethernet ports. Refer to the *SPARC T3 Series Servers Administration Guide* for instructions.

1. Connect a Category 5 (or better) cable from your network switch or hub to Ethernet Port 0 (NET0) on the rear of the chassis.
2. Connect Category 5 (or better) cables from your network switch or hub to the remaining Ethernet ports (NET1, NET2, NET3), as needed.

▼ Connect Other Data Cables

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

See peripheral documentation for specific instructions.

▼ Prepare Power Cords



Caution – Finish the hardware procedures in this chapter, but do not attach the AC power cables to a power source yet.

Powering on the server for the first time requires special preparation and procedures. For example, if you have not prepared a display before connecting the AC power cable, initial system messages could be lost.



Caution – The server goes into Standby mode and the service processor initializes as soon as the AC power cable is connected to the power source.

- Go to [“Power On Task Overview”](#) on page 43 for instructions on connecting the server to AC power.

Powering On the Server for the First Time

These topics include instructions for booting the server and for enabling the service processor network management port.

- [“Power On Task Overview”](#) on page 43
- [“Oracle ILOM System Console Overview”](#) on page 44
- [“Connect a Terminal or Emulator to the SER MGT Port”](#) on page 45
- [“Power On the Server for the First Time”](#) on page 45
- [“Oracle Solaris OS Configuration Parameters”](#) on page 48
- [“Assigning a Static IP Address to the Service Processor”](#) on page 49
- [“Booting the Oracle Solaris Operating System”](#) on page 54

Related Information

- [“Preparing for Installation”](#) on page 1
- [“Installing the SPARC T3-4 Server”](#) on page 13
- [“Connecting the Server Cables”](#) on page 31

Power On Task Overview

These topics provide an overview and instructions for powering on your server for the first time.

Step	Description	Links
1	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 45
2	Power on the server for the first time.	“Power On the Server for the First Time” on page 45
3	Set Oracle Solaris OS configuration parameters.	“Oracle Solaris OS Configuration Parameters” on page 48
4 (Optional)	Configure the NET MGT port to use a static IP address.	“Assigning a Static IP Address to the Service Processor” on page 49
5	Boot the Oracle Solaris OS.	“Booting the Oracle Solaris Operating System” on page 54

Related Information

- [“Preparing for Installation” on page 1](#)

Oracle ILOM System Console Overview

When you power on the server, the boot process begins under the control of the Oracle Integrated Lights Out Manager system console. The ILOM system console displays status and error messages generated by firmware-based tests during server startup.

By default, ILOM system console messages are directed to the NET MGT port. The NET MGT port uses DHCP and allows connections using SSH.

Note – If you are unable to use DHCP on your network, you must connect to the ILOM service processor using the serial management port to configure the network management port for your network. See [“Assign a Static IP to the NET MGT Port” on page 51](#).

Related Information

- [“Assigning a Static IP Address to the Service Processor” on page 49](#)

▼ Connect a Terminal or Emulator to the SER MGT Port

- **Connect a terminal or a terminal emulator (PC or workstation) to the service processor serial management port.**

Configure the 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 – When you power on the server for the first time and you do not have a terminal or terminal emulator (PC or workstation) connected to the service processor serial management port, you will not see system messages.

▼ Power On the Server for the First Time

Complete the following tasks:

- Confirm that you have completed the installation of the server in its rack. See [“Installing the Server” on page 15](#).
- Attach the cable management assembly. See [“Install the CMA” on page 36](#).
- Connect a terminal or terminal emulator to the SER MGT port. See [“Connect a Terminal or Emulator to the SER MGT Port” on page 45](#).

1. (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. See "Connect the NET MGT Cable" on page 39.

After the initial configuration of the server using the SER MGT port, communication with the SP and host is usually performed through this Ethernet interface.

2. Connect an Ethernet cable between one of the server's NET ports ("Rear Panel Connectors and Ports" on page 34) and the network to which the server will communicate.

3. Plug the power cords into the power supplies and into a power source.

Note – Only two power connections are required for operation. Use four power connections and two separate circuits for redundancy.

The service processor runs on the 3.3V standby voltage. As soon as AC power is connected to the server, the service processor powers on, runs diagnostics, and initializes the ILOM firmware.

After a few minutes, the SP login prompt appears on the terminal device. The host is not initialized or powered on yet.

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

```
XXXXXXXXXXXXXXXXXXXX login: root
Password: changeme
. . .
->
```

After a brief delay, the SP prompt is displayed (->). At this point, there are many commands you can perform using the ILOM interface.

Additional SP information, such as how to change the password and how to set up the SP network parameters is available in the online documentation set.

5. Open a second terminal device, log in to the SP as `root` with a password of `changeme`

After a brief delay, the SP prompt is displayed (->). At this point, there are many commands you can perform using the ILOM interface.

6. In the first terminal device, redirect the host output to display on the serial terminal device:

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

After you start the SP console, the server initialization takes approximately 20 minutes to complete. This terminal device displays all SP console messages during initial boot.

7. In the second terminal device, power on the server:

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

This terminal device displays all system console messages during initial boot.

8. When prompted, follow the onscreen instructions for configuring the Oracle Solaris Operating System on your host and enter the following configuration information.

You will be 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 48](#) for a description of the Oracle Solaris OS parameters you must provide during initial configuration.

9. Log in to the server and explore its capabilities.

There are many commands you can use to verify the functionality of the server. The following list describes a few of them:

- `showrev` – Displays the host name and server architecture information. Use the `-a` option with this command to see the patches that are installed.
- `psrinfo` – Displays information about the number and status of the processors and cores in the host.
- `prtdiag` – Displays server configuration and diagnostic information.

Review the Oracle Solaris OS man pages and documentation for more details.

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. Note—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 server.
Time Zone (Continent)	Select your continent.
Time Zone (Country or Region)	Select your country or region.

Parameter	Description
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

- [“Rear Panel Cable Connections Reference” on page 24](#)
- [“Assigning a Static IP Address to the Service Processor” on page 49](#)
- [“Boot the Oracle Solaris Operating System” on page 55](#)
- [“Booting the Oracle Solaris Operating System” on page 54](#)

Assigning a Static IP Address to the Service Processor

If your network does *not* use DHCP, the network management port is not operational until you configure network settings for the service processor.

This topic includes the following tasks:

- [“Log In to the Service Processor Using the SER MGT Port” on page 50](#)
- [“Assign a Static IP to the NET MGT Port” on page 51](#)

Related Information

- [“Power On Task Overview” on page 43](#)
- [“Oracle ILOM System Console Overview” on page 44](#)
- [“Oracle Solaris OS Configuration Parameters” on page 48](#)

▼ Log In to the Service Processor Using the SER MGT Port

After the service processor boots, access the ILOM CLI to configure and manage the server. The ILOM CLI prompt (->) is displayed at the first time the service processor is booted. The default configuration provides an ILOM CLI `root` user account. The default `root` password is `changeme`. Change the password using the service processor ILOM CLI `password` command.

1. If this is the first time the server has been powered on, use the `password` command to change the `root` password.

```
...
Starting OpenBSD Secure Shell server: sshd.
Starting Servicetags listener: stlistener.
Starting FRU update program: frutool.

hostname login: root
Password: changeme

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Subject to Standard License Terms and Conditions.
...

Warning: password is set to factory default.

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

->
```

Note – After the `root` password has been set, on subsequent reboots, the ILOM CLI login prompt is displayed.

2. Enter `root` for the login name followed by your password.

```
...
hostname login: root
Password: password (nothing displayed)
Waiting for daemons to initialize...
```

```
Daemons ready

Integrated Lights Out Manager

Version 2.0.0.0

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->
```

▼ Assign a Static IP to the NET MGT Port

Use this procedure only when:

- You are unable to use DHCP on your network.
- You need to modify the NET MGT port settings.

In this procedure, you connect to the SER MGT port to manually reconfigure the NET MGT port to use a static IP address.

Note – For more information on configuring ILOM, refer to the *SPARC T3 Series Servers Administration Guide*.

- 1. Set these network parameters according to the specific details of your network configuration.**

Parameter	Description
/SP/network state	Specifies whether or not the service processor is on the network.
/SP/network pendingipaddress	IP address of the service processor.
/SP/network pendingipgateway	IP address of the gateway for the subnet.
/SP/network pendingipnetmask	Netmask for the service processor subnet.
/SP/network pindingipdiscovery	Specifies whether the service processor uses DHCP or static IP address assignment.
/SP/network commitpending	Commits the service processor to use the pending settings

Configure these parameters using the `set` command. For example:

```
-> set /host/network pendingaddress=xxx.xxx.xxx.xxx
Set 'pendingaddress' to 'xxx.xxx.xxx.xxx'
```

2. Configure the service processor using information from your network administrator.

Parameter	Description
dhcp	Set up the network connection with a dynamically created IP configuration.
static	Set up the network connection with a static IP configuration.

a. If you choose to use a dynamically created IP address (use DHCP to retrieve the network setting), set `pendingipdiscovery` to `dhcp`.

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

b. If you choose to configure a static IP configuration, set the parameters `pendingipdiscovery`, `pendingipaddress`, `pendingipgateway`, and `pendingipnetmask` as follows.

i. Set the service processor to accept a static IP address.

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

ii. Set the IP address for the service processor.

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

iii. Set the IP address for the service processor gateway.

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

iv. Set the netmask for the service processor.

```
-> 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.

3. Use the `show /SP/network` command to verify that the parameters were set correctly.

The following example shows parameters that have been set to convert a service processor from a DHCP configuration to a static configuration.

```
-> show /SP/network
/SP/network
  Targets:
  Properties:
    commitpending = (Cannot show property)
    dhcp_server_ip = xxx.xxx.xxx.xxx
    ipaddress = xxx.xxx.xxx.xxx
    ipdiscovery = dhcp
    ipgateway = xxx.xxx.xxx.xxx
    ipnetmask = 255.255.252.0
    macaddress = 00:14:4F:3F:8C:AF
    pendingipaddress = xxx.xxx.xxx.xxx
    pendingipdiscovery = static
    pendingipgateway = xxx.xxx.xxx.xxx
    pendingipnetmask = 255.255.255.0
    state = enabled
  Commands:
    cd
    set
    show
->
```

Note – After setting the configuration parameters, you must enter the `set /SP/network commitpending=true` command for the new values to take affect.

4. Commit the changes to the service processor network parameters.

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

Note – You can run the `show /SP/network` command again (after performing the `set /SP/network commitpending=true` command) to verify that the parameters have been updated.

Booting the Oracle Solaris Operating System

The Oracle Solaris OS is preinstalled on the server on the disk in slot 0. The Oracle Solaris OS is not configured (that is, the `sys-unconfig` command was run in the factory). If you boot the server from this disk, you will be prompted to configure the Oracle Solaris OS for your environment.

After powering on the server for the first time, you can use Oracle's SunVTS software to verify the functionality and performance of any installed components, as well as its network connections. Refer to the SunVTS documentation at <http://www.sun.com/documentation> for more information.

For more information about configuring the server and using the ILOM service processor, refer to the *SPARC T3 Series Servers Administration Guide*.

For more information about adding optional components, refer to the *SPARC T3-4 Server Service Manual*.

These topics describe the following tasks:

- “Boot the Oracle Solaris Operating System” on page 55
- “Avoid Booting the Oracle Solaris Operating System at Start Up” on page 55
- “Reset the Server” on page 56
- “Power Cycle the Server” on page 56

Related Information

- “Oracle Solaris OS Configuration Parameters” on page 48

▼ Boot the Oracle Solaris Operating System

1. At the `ok` prompt, boot from the disk that contains the Oracle Solaris OS.

- If you know which disk to boot from, skip this step and perform [Step 2](#).
- If you need to determine which disk to boot from, type the `show-disks` command at the `ok` prompt to see the path to the configured disks, similar to the following:

```
ok show-disks
a) /pci@0/pci@0/pci@2/scsi@0/disk0
b) /pci@0/pci@0/pci@1/pci@0/pci@1/pci@0/usb@0,2/storage@2/disk
q) NO SELECTION Enter Selection, q to quit: q
ok
```

2. Type the boot command at the `ok` prompt.

Use the value from [Step 1](#) to construct the boot command. You must append the target to the disk path.

In the following example, the server is booted from disk 0 (zero).

```
ok boot disk0

Boot device: /pci@0/pci@0/pci@2/scsi@0/disk@0 File and args:
SunOS Release 5.10 Version Generic_127127-03 64-bit
Copyright 1983-2010 Oracle Corp. All rights reserved.
Use is subject to license terms.
Hostname: hostname
NIS domain name is x.x.x.x

hostname console login:
```

▼ Avoid Booting the Oracle Solaris Operating System at Start Up

In hard drive HDD0, the Oracle Solaris OS is preinstalled.

- If you do not want to start the preinstalled OS, set the Open Boot PROM parameter `auto-boot?` to `false`. For example:

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

▼ Reset the Server

- If it is necessary to reset the server, use the `shutdown -g0 -i6 -y` command.

```
# shutdown -g0 -i6 -y
```

It is not necessary to power the server off and on to simply reset the server.

▼ Power Cycle the Server

If a simple reset does not clear a system problem, you can power the server off and on with this procedure.

1. Shut down the Oracle Solaris OS.

At the Oracle Solaris OS prompt, type the `shutdown -g0 -i0 -y` command. Then type `h` when prompted to halt the Oracle Solaris OS and to return to the `ok` prompt.

```
# shutdown -g0 -i0 -y
# svc.startd: The system is coming down. Please wait.
svc.startd: 91 system services are now being stopped.
Jun 12 19:46:57 wgs40-58 syslogd: going down on signal 15
svc.startd: The system is down.
syncing file systems... done
Program terminated
r)eboot, o)k prompt, h)alt?
```

2. Switch from the system console prompt to the service processor console prompt by issuing the console escape sequence (by default, `#.`).

```
ok #.
->
```


3. Using the ILOM CLI, type the `stop /SYS` command to perform a graceful shutdown of the server.

```
-> stop /SYS  
Are you sure you want to stop /SYS (y/n)? y  
Stopping /SYS  
  
->
```

Note – To perform an immediate and ungraceful shutdown, use the `stop -force -script /SYS` or `stop -script /SYS` commands. These commands stop everything immediately. Ensure that all data is saved before entering these commands.

4. Type the `start /SYS` command.

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

Note – To force a power-on sequence, use the `start -script /SYS` command.

5. Reconnect to the system console with the `start /HOST/console` command.

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

The system console displays various messages, followed by the ok prompt.

Identifying the Server Ports

These topics provide reference information about the back panel ports and pin assignments.

- [“USB Port Pinouts” on page 59](#)
- [“SER MGT Port Pinouts” on page 60](#)
- [“NET MGT Port Pinouts” on page 61](#)
- [“Gigabit Ethernet Port Pinouts” on page 61](#)
- [“QSFP Port Pinouts” on page 62](#)
- [“VGA Port Pinouts” on page 63](#)

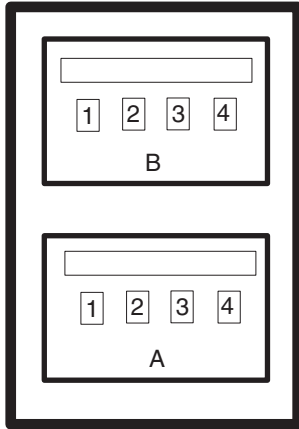
Related Information

- [“Server Overview” on page 2](#)

USB Port Pinouts

Two Universal Serial Bus (USB) ports are located the back panel.

Two additional USB ports are located on the main module, and are accessible from the front panel.



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

SER MGT Port Pinouts

The SER MGT port is an RJ-45 connector located on the back panel. This port is the default connection to the system console.

An additional SER MGT port is located on the main module, and is accessible from the front panel.

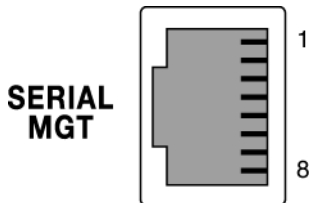
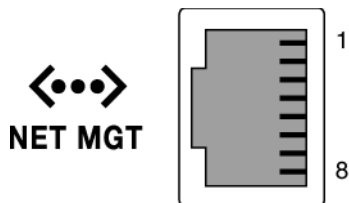


TABLE: Serial Management Connector Signals

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

NET MGT Port Pinouts

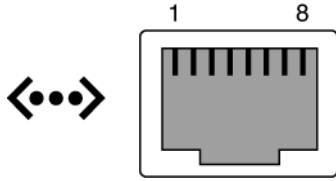
The NET MGT port is an RJ-45 connector located on the system back panel. This port must be configured prior to use.



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

Gigabit Ethernet Port Pinouts

Four RJ-45 Gigabit Ethernet connectors (NET0, NET1, NET2, NET3) are located on the system back panel. The Ethernet interfaces operate at 10 Mbit/sec, 100 Mbit/sec, and 1000 Mbit/sec.



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

QSFP Port Pinouts

The QSFP connector is a single InfiniBand port connection.

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	11	SCL	21	RX2n	31	Reserved
2	TX2n	12	SDA	22	RX2p	32	GND
3	TX2p	13	GND	23	GND	33	TX3p
4	GND	14	RX3p	24	RX4n	34	TX3n
5	TX4n	15	RX3n	25	RX4p	35	GND
6	TX4p	16	GND	26	GND	36	TX1p
7	GND	17	RX1p	27	ModPrsL	37	TX1n
8	ModSeIL	18	RX1n	28	IntL	38	GND
9	LPMoDe_Reset	19	GND	29	VccTx		
10	VccRx	20	GND	30	Vcc1		

VGA Port Pinouts

The VGA port supports a maximum resolution of 1024 x 768.

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	Monitor ID - Bit 0
5	Ground	13	Horizontal Sync
6	Red Ground	14	Vertical Sync
7	Green Ground	15	N/C (Reserved)
8	Blue Ground		

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