Oracle® Server X6-2L Installation Guide

Part No: E62179-05
January 2021

Oracle Server X6-2L Installation Guide

Part No: E62179-05

Référence: E62179-05

Restrictions de licence/Avis d'exclusion de responsabilité en cas de dommage indirect et/ou consécutif

Ce logiciel et la documentation qui l'accompagne sont protégés par les lois sur la propriété intellectuelle. Ils sont concédés sous licence et soumis à des restrictions d'utilisation et de divulgation. Sauf stipulation expresse de votre contrat de licence ou de la loi, vous ne pouvez pas copier, reproduire, traduire, diffuser, modifier, accorder de licence, transmettre, distribuer, exposer, exécuter, publier ou afficher le logiciel, même partiellement, sous quelque forme et par quelque procédé que ce soit. Par ailleurs, il est interdit de procéder à toute ingénierie inverse du logiciel, de le désassembler ou de le décompiler, excepté à des fins d'interopérabilité avec des logiciels tiers ou tel que prescrit par la loi.

Exonération de garantie

Les informations fournies dans ce document sont susceptibles de modification sans préavis. Par ailleurs, Oracle Corporation ne garantit pas qu'elles soient exemptes d'erreurs et vous invite, le cas échéant, à lui en faire part par écrit.

Avis sur la limitation des droits

Si ce logiciel, ou la documentation qui l'accompagne, est livré sous licence au Gouvernement des Etats-Unis, ou à quiconque qui aurait souscrit la licence de ce logiciel pour le compte du Gouvernement des Etats-Unis, la notice suivante s'applique :

U.S. GOVERNMENT END USERS: Oracle programs (including any operating system, integrated software, any programs embedded, installed or activated on delivered hardware, and modifications of such programs) and Oracle computer documentation or other Oracle data delivered to or accessed by U.S. Government end users are "commercial computer software" or "commercial computer software documentation" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, reproduction, duplication, release, display, disclosure, modification, preparation of derivative works, and/or adaptation of i) Oracle programs (including any operating system, integrated software, any programs embedded, installed or activated on delivered hardware, and modifications of such programs), ii) Oracle computer documentation and/or iii) other Oracle data, is subject to the rights and limitations specified in the license contained in the applicable contract. The terms governing the U.S. Government's use of Oracle cloud services are defined by the applicable contract for such services. No other rights are granted to the U.S. Government.

Avis sur les applications dangereuses

Ce logiciel ou matériel a été développé pour un usage général dans le cadre d'applications de gestion des informations. Ce logiciel ou matériel n'est pas conçu ni n'est destiné à être utilisé dans des applications à risque, notamment dans des applications pouvant causer un risque de dommages corporels. Si vous utilisez ce logiciel ou matériel dans le cadre d'applications dangereuses, il est de votre responsabilité de prendre toutes les mesures de secours, de sauvegarde, de redondance et autres mesures nécessaires à son utilisation dans des conditions optimales de sécurité. Oracle Corporation et ses affiliés déclinent toute responsabilité quant aux dommages causés par l'utilisation de ce logiciel ou matériel pour des applications dangereuses.

Marques

Oracle et Java sont des marques déposées d'Oracle Corporation et/ou de ses affiliés. Tout autre nom mentionné peut correspondre à des marques appartenant à d'autres propriétaires qu'Oracle.

Intel et Intel Inside sont des marques ou des marques déposées d'Intel Corporation. Toutes les marques SPARC sont utilisées sous licence et sont des marques ou des marques déposées de SPARC International, Inc. AMD, Epyc, et le logo AMD sont des marques ou des marques déposées d'Advanced Micro Devices. UNIX est une marque déposée de The Open Group.

Avis d'exclusion de responsabilité concernant les services, produits et contenu tiers

Ce logiciel ou matériel et la documentation qui l'accompagne peuvent fournir des informations ou des liens donnant accès à des contenus, des produits et des services émanant de tiers. Oracle Corporation et ses affiliés déclinent toute responsabilité ou garantie expresse quant aux contenus, produits ou services émanant de tiers, sauf mention contraire stipulée dans un contrat entre vous et Oracle. En aucun cas, Oracle Corporation et ses affiliés ne sauraient être tenus pour responsables des pertes subies, des coûts occasionnés ou des dommages causés par l'accès à des contenus, produits ou services tiers, ou à leur utilisation, sauf mention contraire stipulée dans un contrat entre vous et Oracle.

Avis sur la reconnaissance du revenu

Si ce document est fourni dans la Version préliminaire de Disponibilité Générale ("Pre-GA") à caractère privé :

Les informations contenues dans ce document sont fournies à titre informatif uniquement et doivent être prises en compte en votre qualité de membre du customer advisory board ou conformément à votre contrat d'essai de Version préliminaire de Disponibilité Générale ("Pre-GA") uniquement. Ce document ne constitue en aucun cas un engagement à fournir des composants, du code ou des fonctionnalités et ne doit pas être retenu comme base d'une quelconque décision d'achat. Le développement, la publication, les dates et les tarifs des caractéristiques ou fonctionnalités décrites sont susceptibles d'être modifiés et relèvent de la seule discrétion d'Oracle.

Ce document contient des informations qui sont la propriété exclusive d'Oracle, qu'il s'agisse de la version électronique ou imprimée. Votre accès à ce contenu confidentiel et son utilisation sont soumis aux termes de vos contrats, Contrat-Cadre Oracle (OMA), Contrat de Licence et de Services Oracle (OLSA), Contrat Réseau Partenaires Oracle (OPN), contrat de distribution Oracle ou de tout autre contrat de licence en vigueur que vous avez signé et que vous vous engagez à respecter. Ce document et son contenu ne peuvent en aucun cas être communiqués, copiés, reproduits ou distribués à une personne extérieure à Oracle sans le consentement écrit d'Oracle. Ce document ne fait pas partie de votre contrat de licence. Par ailleurs, il ne peut être intégré à aucun accord contractuel avec Oracle ou ses filiales ou ses affiliés.

Accessibilité de la documentation

Pour plus d'informations sur l'engagement d'Oracle pour l'accessibilité de la documentation, visitez le site Web Oracle Accessibility Program, à l'adresse : `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc`.

Accès aux services de support Oracle

Les clients Oracle qui ont souscrit un contrat de support ont accès au support électronique via My Oracle Support. Pour plus d'informations, visitez le site `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info` ou le site `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs` si vous êtes malentendant.

Contents

Using This Documentation

- **Overview** – This Installation Guide contains hardware installation and configuration procedures for the Oracle Server X6-2L.
- **Audience** – This Installation Guide is intended for trained technicians, system administrators, and authorized service personnel who have been instructed on how to install server systems and hardware components.
- **Required knowledge** – Users need advanced experience troubleshooting hardware installations and configuring preinstalled operating systems.

Product Documentation Library

Documentation and resources for this product and related products are available at https://www.oracle.com/goto/x6-2l/docs.

Feedback

Provide feedback about this documentation at https://www.oracle.com/goto/docfeedback.

Installation Procedure

This section provides an overview of the installation procedure.

Description	Links
Review the entire installation procedure and find links to more information about each step.	"Installation Procedure Overview" on page 11

Installation Procedure Overview

The following table lists the tasks you need to complete to install the Oracle Server X6-2L.

Step	Description	Links
1	Review the product notes for any late-breaking information about the server.	*Oracle Server X6-2L Product Notes* at: `https://www.oracle.com/goto/x6-2l/docs`
2	Review the server site requirements, specifications, and components; confirm that you have received all the items you ordered; familiarize yourself with ESD and safety precautions; and assemble the required tools and equipment.	■ "Preparing for Server Installation" on page 13 ■ "Site Planning Checklists" on page 139
3	Review the server features.	"Server Features and Components" on page 25
4	Install any separately shipped optional components.	"About System Components" in *Oracle Server X6-2L Service Manual*
5	Review procedures for getting the latest server firmware and software.	"Getting Firmware and Software Updates" on page 129
6	Install the server into a rack.	"Installing the Server Into a Rack" on page 39
7	Attach cables and power cords to the server.	"Cabling the Server and Applying Power" on page 77
8	Connect to Oracle Integrated Lights Out Manager (ILOM).	"Connecting to Oracle ILOM" on page 85
9	Prepare server drives and configure RAID.	"Configuring Storage Drives for Operating System Installation" on page 109

Step	Description	Links
10	If applicable, install one of the following operating systems or virtual machines: ■ Oracle Solaris ■ Oracle Linux ■ Windows ■ Oracle VM Server ■ VMware ESXi	■ "Installing the Oracle Solaris Operating Systems" in *Oracle Server X6-2L Installation Guide for Oracle Solaris Operating System* ■ "Installing a Linux Operating System" in *Oracle Server X6-2L Installation Guide for Linux Operating Systems* ■ "Installing the Windows Server Operating System" in *Oracle Server X6-2L Installation Guide for Windows Server Operating Systems* ■ "Installing the Oracle VM Server Software" in *Oracle Server X6-2L Installation Guide for Oracle VM* ■ For VMware ESXi installation instructions, go to: `https://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-6-pubs.html`
11	Review procedures for controlling system power.	"Controlling System Power" on page 103
12	Troubleshoot installation issues.	"Troubleshooting Installation Issues" on page 135

Preparing for Server Installation

This section provides the information you need to prepare for the server installation.

Description	Links
Review the server's physical specifications.	“Server Physical Specifications” on page 13
Prepare the space for receiving, unpacking, rackmounting, and maintaining the server in its rack.	“Space Requirements” on page 14
Review the site electrical requirements and power requirements of the server,	“Electrical Power Requirements” on page 16
Review temperature, humidity, and other environmental requirements for the server.	“Environmental Requirements” on page 18
Review ventilation and cooling requirements for the rackmounted server.	“Ventilation and Cooling” on page 19
Review Agency Compliance specifications for the server.	“Agency Compliance” on page 21
Unpack the server and verify the ship kit contents.	“Shipping Inventory” on page 21
Assemble the tools required for installation.	“Tools and Equipment Needed for Installation” on page 22
Review ESD requirements and take safety precautions.	“ESD and Safety Precautions” on page 23
Install any optional components into the server.	“Optional Component Installation” on page 24

Related Information

- “Installation Procedure Overview” on page 11
- “Server Features and Components” on page 25

Server Physical Specifications

The following table lists the physical specifications for the Oracle Server X6-2L.

TABLE 1 Oracle Server X6-2L Physical Specifications

Dimension	Server Specification	Specification
Width	Server chassis	43.65 cm (17.19 inches)
Depth	Maximum overall	73.70 cm (29.02 inches)
Height	2-rack unit (2U) nominal	8.76 cm (3.45 inches)
Weight	Fully populated server ■ 8-Disk Configuration ■ 12-Disk Configuration ■ 24-Disk Configuration	■ 24.494 kg (54 lbs) ■ 29.937 kg (66 lbs) ■ 29.030 kg (64 lbs)

Related Information

- “Space Requirements” on page 14
- “Rack Requirements” on page 40

Space Requirements

The Oracle Server X6-2L is a 2 rack unit (2U) server. For physical dimensions, see Table 1, “Oracle Server X6-2L Physical Specifications,” on page 14.

The Oracle Server X6-2L can be installed into a four-post rack cabinet that conforms to ANSI/EIA 310-D-1992 or IEC 60927 standards, such as Oracle's Sun Rack II. All Oracle racks have the same space requirements. The rack specifications are listed in the following table.

TABLE 2 Sun Rack II Models 1242 and 1042 Specifications

Requirement	Specification
Usable rack units	42
Height	199.8 cm (78.6 inches)
Width (with side panels)	60 cm (23.6 inches)
Depth Model 1242[†]	120 cm (47.24 inches)
Depth Model 1042[‡]	105.8 cm (41.66 inches)
Weight Model 1242	150.6 kg (332 lbs)
Weight Model 1042	123.4 kg (272 lbs)
Maximum dynamic load	1005 kg (2215 lbs)

[†]Depth is measured from front door handle to rear door handle.

[‡]Depth is measured from front door handle to rear door handle.

The minimum ceiling height for the cabinet is 230 cm (90 inches), measured from the true floor or raised floor, whichever is higher. An additional 91.4 cm (36 inches) is for top clearance. The space above the cabinet and its surroundings must not restrict the movement of cool air between the air conditioner and the cabinet, or the movement of hot air coming out of the top of the cabinet.

- "Receiving and Unpacking Guidelines" on page 15
- "Maintenance Space Guidelines" on page 15

Receiving and Unpacking Guidelines

The following table lists the dimensions and weights for the shipping cartons that contain the Oracle Server X6-2L.

TABLE 3 Shipping Carton Specifications

Requirement	Specification
Shipping carton height	30.5 cm (12 inches)
Shipping carton width	59.9 cm (23.6 inches)
Shipping carton length	98.4 cm (38.7 inches)
Shipping carton weight	5.8 kg (12.8 lbs)

When the server is unloaded at your site, leave the server in its shipping carton until it arrives in its installation location. Use a separate area in which to remove the packaging material to reduce particle contamination before the server is taken to the data center. Ensure that there is enough clearance and clear pathways to move the server from the unpacking area to the installation location.

Maintenance Space Guidelines

The maintenance area for the rackmounted Oracle Server X6-2L must have the required access space. The following table lists the maintenance access requirements for the Oracle Server X6-2L when it is installed in a rack.

TABLE 4 Maintenance Access Requirements

Location	Maintenance Access Requirement
Rear of the server	91.4 cm (36 inches)
Area above the rack	91.4 cm (36 inches)

Location	Maintenance Access Requirement
Front of the server	123.2 cm (48.5 inches)

Electrical Power Requirements

The server uses AC power. The values in the following table are the power supply specifications.

Note - The power dissipation numbers listed in the following table are the maximum rated power numbers for the power supply used in the system. The numbers are not a rating of the actual power consumption of the system. For up-to-date information about the power consumption, go to Oracle's Power Calculators web site and click the Oracle Server X6-2L link: https://www.oracle.com/it-infrastructure/power-calculators/

TABLE 5 Power Supply Specifications

Parameter	AC Requirement
Voltage (nominal)	100 to 127/200 to 240 VAC
Input current (maximum)	12 A–8.5 A @ 100–127 VAC 5.7 A @ 200–240 VAC
Frequency (nominal)	50/60 Hz (47 to 63 Hz range)

The Oracle Server X6-2L can operate effectively over a range of voltages and frequencies. However, it must have a reliable power source. Damage to the server might occur if the ranges are exceeded. Electrical disturbances such as the following might damage the system:

- Fluctuations caused by brownouts
- Wide and rapid variations in input voltage levels or in input power frequency
- Electrical storms
- Faults in the distribution system, such as defective wiring

To protect your server from such disturbances, you should have a dedicated power distribution system, power-conditioning equipment, as well as lightning arresters or power cables to protect from electrical storms.

The following sections discuss specific power requirements.

- “Facility Power Guidelines” on page 17
- “Circuit Breaker and UPS Guidelines” on page 17
- “Grounding Guidelines” on page 17

Facility Power Guidelines

Electrical work and installations must comply with applicable local, state, or national electrical codes. Contact your facilities manager or qualified electrician to determine what type of power is supplied to the building.

To prevent failures, design the input power sources to ensure adequate power is provided to the power distribution units (PDUs). Use dedicated AC breaker panels for all power circuits that supply power to the PDU. When planning for power distribution requirements, balance the power load between available AC supply branch circuits. In the United States and Canada, ensure that the overall system AC input current load does not exceed 80 percent of the branch circuit AC current rating.

PDU power cords for the Oracle Sun Rack II are 4 meters (13.12 feet) long, and 1 to 1.5 meters (3.3 to 4.9 feet) of the cord might be routed within the rack cabinet. The installation site AC power receptacle must be within 2 meters (6.6 feet) of the rack.

Circuit Breaker and UPS Guidelines

To prevent failures, the design of your power system must ensure that adequate power is provided to the Oracle Server X6-2L. Use dedicated AC breaker panels for all power circuits that supply power to the Oracle Server X6-2L. Electrical work and installations must comply with applicable local, state, or national electrical codes. The Oracle Server X6-2L requires electrical circuits to be grounded to the Earth.

Note - Circuit breakers are supplied by the customer. One circuit breaker is required for each server power cord.

In addition to circuit breakers, provide a stable power source, such as an uninterruptable power supply (UPS) to reduce the possibility of component failures. If computer equipment is subjected to repeated power interruptions and fluctuations, then it is susceptible to a higher rate of component failure.

Grounding Guidelines

The rack must use grounding-type power cords that are compatible with the Oracle Server X6-2L. For example, the Oracle Sun Rack II has grounding-type power cords (three-wire). Always connect the cords to grounded power outlets. Because different grounding methods are

used, depending on location, check the grounding type, and refer to documentation, such as local electrical codes. Ensure that the facility administrator or qualified electrical engineer who verifies the grounding method for the building performs the grounding work.

Environmental Requirements

The following table lists the temperature, humidity, and altitude specifications, as well as acoustic noise, vibration, and shock specifications.

TABLE 6 Environmental Specifications

Specification	Operating	Nonoperating
Ambient temperature (Does not apply to removable media)	41˚F to 95˚F (5˚C to 35˚C) up to 2,953 feet (900 meters) Optimal: 69.8˚F to 73.4˚F (21˚C to 23˚C) **Note -** Maximum ambient operating temperature is derated by 1 degree C for every 300 meters elevation beyond 900 meters, up to a maximum altitude of 3,000 meters elevation.	–40˚F to 154˚F (–40˚C to 68˚C)
Relative humidity	■ 10% to 90% noncondensing, short term 25˚F to 113˚F (–5˚C to 55˚C) ■ 5% to 90% noncondensing, but not to exceed 0.024 kg of water per kg of dry air (0.053 lbs water/2.205 lbs dry air)	Up to 93% noncondensing 95˚F (35˚C) maximum wet bulb
Altitude	Maximum 9,840 feet (3,000 meters) at 95˚F (35˚C) **Note -** In China markets, regulations may limit installations to a maximum altitude of 6,562 feet (2,000 meters).	Maximum 39,370 feet (12,000 meters)
Acoustic Noise	■ Maximum condition: 8.1 Bels ■ Idle condition: 5.8 Bels	Not applicable
Vibration	0.15 G (z-axis), 0.10 G (x-, y-axes), 5-500Hz swept sine IEC 60068-2-6 Test FC	0.5 G (z-axis), 0.25 G (x-, y-axes), 5-500Hz swept sine IEC 60068-2-6 Test FC
Shock	3 Gs, 11 ms half-sine IEC 60068-2-27 Test Ea	Roll-off: 1.25-inch roll-off free fall, front to back rolling directions Threshold: 13 mm threshold height at 0.65 m/s impact velocity ETE-1010-02 Rev A

Set conditions to the optimal temperature and humidity ranges to minimize the chance of downtime due to component failure. Operating the Oracle Server X6-2L for extended periods at or near the operating range limits, or installing it in an environment when it remains at or near nonoperating range limits could significantly increase hardware component failure. See also:

- “Temperature Guidelines” on page 19
- “Humidity Guidelines” on page 19

Related Information

- “Ventilation and Cooling” on page 19

Temperature Guidelines

An ambient temperature range of 21° to 23° Celsius (70° to 74° Fahrenheit) is optimal for server reliability and operator comfort. Most computer equipment can operate in a wide temperature range, but near 22° Celsius (72° Fahrenheit) is desirable because it is easier to maintain safe humidity levels. Operating in this temperature range provides a safety buffer in the event that the air conditioning system goes down for a period of time.

Humidity Guidelines

The ambient relative humidity range of 45 to 50 percent is suitable for safe data processing operations. Most computer equipment can operate in a wide range (20 to 80 percent), but the range of 45 to 50 percent is recommended for the following reasons:

- Optimal range helps protect computer systems from corrosion problems associated with high humidity levels.
- Optimal range provides the greatest operating time buffer in the event of air conditioner control failure.
- This range helps to avoid failures or temporary malfunctions caused by intermittent interference from static discharges that may occur when relative humidity is too low. Electrostatic discharge (ESD) is easily generated and less easily dissipated in areas where the relative humidity level is below 35 percent. ESD risk becomes critical when levels drop below 30 percent.

Ventilation and Cooling

Always provide adequate space in front of and behind the rack to allow for proper ventilation of the rackmounted servers. Do not obstruct the front or rear of the rack with equipment or objects

that might prevent air from flowing through the rack. Rackmountable servers and equipment, including the Oracle Server X6-2L, typically draw cool air in through the front of the rack and let warm air out the rear of the rack. There is no airflow requirement for the left and right sides due to front-to-back cooling.

If the rack is not completely filled with components, then cover the empty sections will filler panels. Gaps between components can adversely affect airflow and cooling within the rack. See also:

- “Ventilation Guidelines” on page 20

Ventilation Guidelines

The Oracle Server X6-2L has been designed to function while installed in a natural convection airflow. The following requirements must be followed to meet the environmental specification:

- Ensure that the air intake is at the front of the system, and the air outlet is at the rear of the system. Take care to prevent recirculation of exhaust air within a rack or cabinet.
- Allow a minimum clearance of 123.2 cm (48.5 inches) at the front of the system, and 91.4 cm (36 inches) at the rear of the system for ventilation.
- Ensure unobstructed airflow through the chassis. The server uses internal fans that can achieve a total airflow of 100 CFM over the specified range of operating conditions.
- Ensure that ventilation openings such as cabinet doors, for both the inlet and exhaust of the server, are not obstructed. The Sun Rack II has been optimized for cooling. Both the front and rear doors have 80 percent perforations that provide a high level of airflow through the rack.
- Ensure that front and rear clearance of the server with respect to cabinet doors is a minimum of 1 inch (2.5 cm) at the front of the server and 3.15 inches (80 mm) at the rear of the server when mounted. These clearance values are based on the inlet and exhaust impedance (available open area) stated above and assume a uniform distribution of the open area across the inlet and exhaust areas. These values also improve cooling performance.

Note - The combination of inlet and exhaust restrictions such as cabinet doors and the spacing of the server from the doors can affect the cooling performance of the server. You must evaluate these restrictions. Server placement is particularly important for high-temperature environments.

- Manage cables to minimize interference with the server exhaust vent.

Agency Compliance

The server complies with the following specifications.

Category	Relevant Standards

Regulations[†,‡]	■ Product Safety: UL/CSA 60950-1, EN 60950-1, IEC 60950-1 CB Scheme with all country differences
	■ EMC
	  ■ Emissions: FCC CFR 47 Part 15, ICES-003, EN55022, EN61000-3-2, EN61000-3-3
	  ■ Immunity: EN55024

Certifications[‡]	■ North America (NRTL) ■ European Union (EU) ■ International CB Scheme ■ BIS (India) ■ BSMI (Taiwan) ■ RCM (Australia) ■ CCC (PRC) ■ MSIP (Korea) ■ VCCI (Japan) ■ Customs Union EAC
European Union Directives	■ 2006/95/EC Low Voltage Directive ■ 2004/108/EC EMC Directive ■ 2011/65/EU RoHS Directive ■ 2012/19/EU WEEE Directive

[†]All standards and certifications referenced are to the latest official version. For additional detail, please contact your sales representative.

[‡]Other country regulations/certifications may apply.

Related Information

- *Oracle Server X6-2L Safety and Compliance Guide*
- *Important Safety Information for Oracle's Hardware Systems*

Shipping Inventory

Inspect the shipping cartons for evidence of physical damage. If a shipping carton appears damaged, request that the carrier's agent be present when the carton is opened. Keep all contents and packing material for the agent's inspection.

The carton contains the server and the ship kit. The ship kit for the Oracle Server X6-2L includes the following items:

- Power cords, packaged separately with country kit
- Rackmount kit containing rack rails and installation instructions
- Rackmount card and template
- RJ-45 cross-over adapter
- Miscellaneous hardware, cables, and connectors
- *Oracle Server X6-2L Getting Started Guide*
- Legal and safety documents

Related Information

- “Optional Component Installation” on page 24

Tools and Equipment Needed for Installation

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

- No. 2 Phillips screwdriver
- ESD mat and grounding strap

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

- “Installing the Server Into a Rack” on page 39

ESD and Safety Precautions

Electronic equipment is susceptible to damage by static electricity. Use a grounded antistatic wrist strap, foot strap, or equivalent safety equipment to prevent electrostatic discharge (ESD) when you install or service the server.

Caution - To protect electronic components from electrostatic damage, which can permanently disable the system 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 system components.

Read the safety information in the *Oracle Server X6-2L Safety and Compliance Guide* and in the *Important Safety Information for Oracle's Hardware Systems* before installing the server.

Caution - Deploy the anti-tilt bar or legs on the equipment rack before beginning an installation.

Caution - Depending upon the configuration, a fully populated server can weigh up to 29.937 kg (66 pounds). Two people are required to lift and mount this 2 rack unit (2U) server into a rack enclosure when using the procedures in this document.

Caution - When completing a two-person procedure, always communicate your intentions clearly before, during, and after each step to minimize confusion.

Related Information

- “Safety Precautions” on page 41

Optional Component Installation

Standard system components are installed at the factory. Optional components that you purchased independent of the standard configuration are shipped separately, and in most cases should be installed before you install the server in a rack.

The following optional components can be ordered and purchased separately:

- PCIe cards
- DDR4 DIMM memory kits
- Storage drives
- Shipping bracket

If you ordered any options that are field-replaceable units (FRUs) or customer-replaceable units (CRUs), refer to the service label on the top cover of the server or the component removal and replacement procedures in the *Oracle Server X6-2L Service Manual* for installation instructions.

Supported components and their part numbers are subject to change over time and without notice. For the most up-to-date list, review the Oracle System Handbook by logging in to My Oracle Support at `https://support.oracle.com`. Select the Knowledge tab then among the Knowledge Links, select Oracle System Handbook. Within the handbook, click Current Systems, and then click the name and model of your server. On the product page that opens for the server, click Full Components List for a list of components.

Note - You must have an Oracle Service contract to access the Oracle System Handbook.

Customers with service contracts can also access the Oracle System Handbook at: `https://support.oracle.com/handbook_private/`

Related Information

- “Server Components” on page 25
- “About System Components” in *Oracle Server X6-2L Service Manual*

Server Features and Components

This section describes the components, status indicators (LEDs), connectors, ports, and storage drives on the server front and back panels.

Description	Links
Review server features and components.	“Server Components” on page 25
Locate status indicators, connectors, and storage drives on the server front and back panels.	“Front Panel Status Indicators, Connectors, and Drives” on page 27 “Back Panel Status Indicators, Connectors, Drives, and PCIe Slots” on page 32

Related Information

- “Cabling the Server and Applying Power” on page 77

Server Components

TABLE 7 Oracle Server X6-2L Components

Feature	Description
Processor	One or two processors with four integrated DDR4 memory controllers per processor. Processors with the following capabilities are supported (factory installed): ■ 22-core, 2.2 GHz, 145W processors ■ 14-core, 2.6 GHz, 135W processors ■ 10-core, 2.2 GHz, 85W processors ■ 6-core, 3.4 GHz, 135W processors For the latest information on CPU specifications, go to the Oracle x86 servers web site and navigate to the Oracle Server X6-2L page: `https://www.oracle.com/servers/technologies/x86-servers.html`
Memory	Up to 12 RDIMMs per processor for a maximum of 24 DDR4 RDIMMs and a maximum of 768 GB of memory are supported in dual-processor systems.

Feature	Description
	A maximum of 12 DDR4 RDIMMs and a maximum of 384 GB of memory are supported in single-processor systems. RDIMMs (16 GB and 32 GB) and LRDIMMs (64 GB) are supported.
Storage devices (Front)	Storage drive configurations can comprise both hard disk drives (HDDs) or solid state disk drives (SSDs). Configurations include: ■ Up to twelve 3.5-inch hot-pluggable SAS HDDs ■ Up to twenty-four 2.5-inch hot-pluggable SAS HDDs or SSDs, with optional support for up to four PCIe-based NVM-Express SSDs ■ Up to eight 2.5-inch hot-pluggable SAS HDDs or SSDs, with optional support for a SATA DVD and/or up to four PCIe-based NVM-Express SSDs **Note -** The internal SAS expander and its associated PCIe host bus adapter (HBA) card are required for storage drive configurations that contain twelve 3.5-inch storage drives or twenty-four 2.5-inch storage drives. **Note -** NVM-Express SSDs are only supported on servers running Oracle Linux or Oracle Solaris operating systems. **Note -** The NVM-Express PCIe switch HBA card is required for storage drive configurations that contain NVM-Express SSDs.
Storage devices (Rear)	Up to two 2.5-inch SAS storage drives. These storage drives are supported only in the twelve 3.5-inch storage drive or twenty-four 2.5-inch storage drive configurations. **Note -** The internal SAS expander and its associated PCIe HBA card are required for the rear-mounted 2.5-inch SAS storage drives.
PCI Express (PCIe) 3.0 I/O slots	Six PCIe Gen3 slots that accommodate low-profile PCIe cards: ■ Slots 1, 2, 5, and 6: x8 electrical interface ■ Slots 3 and 4: x16 electrical interface **Note -** PCIe slots 1, 2, and 3 are nonfunctional in single-processor systems.
Internal HBA(s)	PCIe slot 6 is the HBA card slot for controlling and managing SAS storage drives.
NVM-Express Switch	PCIe HBA card for controlling and managing optional NVM-Express storage drives.
USB 2.0 ports	Two front, two rear, and two internal.
Video (VGA) ports	One rear high-density DB-15 video port.
Service processor (SP)	The server has an integrated service processor (SP). The SP provides IPMI 2.0-compliant remote management capabilities. The SP features: ■ Oracle Integrated Lights Out Manager (ILOM) 3.2.6 (initial version) ■ Local Oracle ILOM command-line access using a serial connection ■ Support for Ethernet access to the SP through a dedicated, 10/100/1000BASE-T management port (NET MGT) and optionally through one of the host Ethernet ports (sideband management) ■ Support for remote KVMS (keyboard, video, mouse, and storage) over IP
Management Software	■ Oracle Integrated Lights Out Manager (ILOM) on the service processor ■ Oracle Hardware Management Pack, downloadable from the Oracle web site
Power supplies	Two hot-swappable and redundant 1000W power supplies.
Cooling Fans	Four 80-mm, hot-swappable fan modules. Each fan module contains two counter-rotating fan pairs. Each power supply has its own cooling fans.

Feature	Description
Operating systems and virtualization software	■ Oracle Solaris ■ Oracle Linux ■ Oracle VM ■ Red Hat Enterprise Linux ■ Microsoft Windows Server ■ VMware ESXi

Related Information

- “Front Panel Status Indicators, Connectors, and Drives” on page 27
- “Back Panel Status Indicators, Connectors, Drives, and PCIe Slots” on page 32

Front Panel Status Indicators, Connectors, and Drives

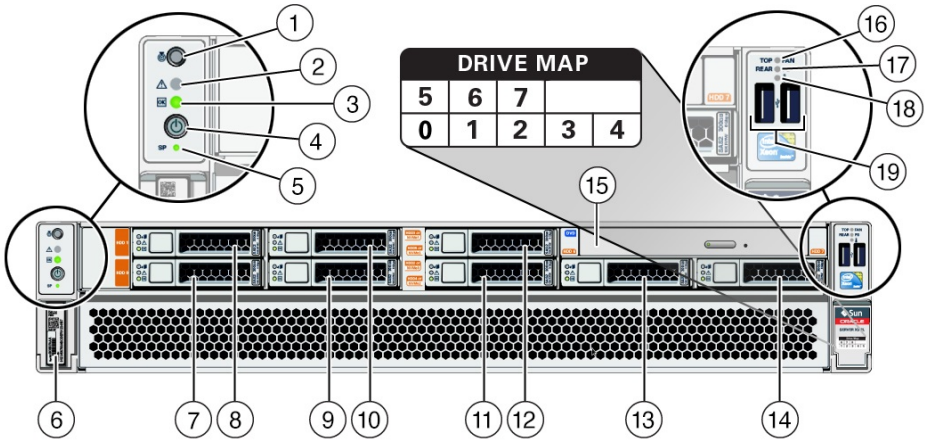
These sections describe the status indicators (LEDs), connectors, and drives on the front panel of each of the three drive configurations available for the Oracle Server X6-2L.

- “Front Panel With Eight 2.5-inch Drives and DVD” on page 27
- “Front Panel With Twelve 3.5-inch Drives” on page 29
- “Front Panel With Twenty-Four 2.5-inch Drives” on page 30

For information about how to interpret the status indicators (LEDs), refer to the *Oracle Server X6-2L Service Manual*.

Front Panel With Eight 2.5-inch Drives and DVD

The following figure shows the status indicators (LEDs), connectors, and drives located on the front panel of a Oracle Server X6-2L configured with eight 2.5-inch storage drives and an optional DVD drive.



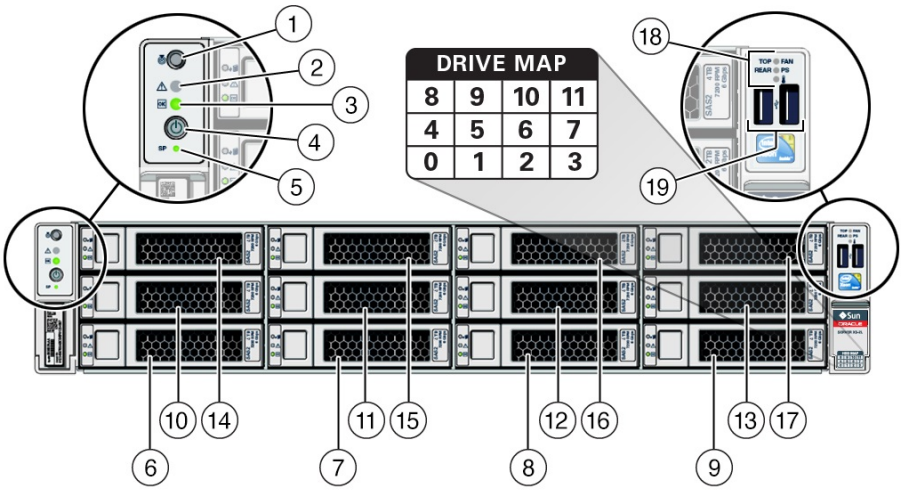
Call Out	Description
1	Locator LED/Locator button: white
2	Service Required LED: amber
3	Power/OK LED: green
4	Power button
5	SP OK LED: green
6	Product Serial Number (PSN) and Radio Frequency Identification (RFID) label
7	Storage drive 0 (HDD/SSD)
8	Storage drive 1 (HDD/SSD)
9	Storage drive 2 (HDD/SSD/NVMe 0)
10	Storage drive 3 (HDD/SSD/NVMe 1)
11	Storage drive 4 (HDD/SSD/NVMe 2)
12	Storage drive 5 (HDD/SSD/NVMe 3)
13	Storage drive 6 (HDD/SSD)
14	Storage drive 7 (HDD/SSD)
15	Optional SATA DVD drive
16	Top Fan Fault LED: amber
17	Power Supply (PS) Fault LED: amber
18	System Over Temperature Warning LED: amber
19	USB 2.0 connectors (2)

Related Information

- “Front Panel With Twelve 3.5-inch Drives” on page 29
- “Front Panel With Twenty-Four 2.5-inch Drives” on page 30
- “Back Panel Status Indicators, Connectors, Drives, and PCIe Slots” on page 32

Front Panel With Twelve 3.5-inch Drives

The following figure shows the status indicators (LEDs), connectors, and drives located on the front panel of a Oracle Server X6-2L configured with twelve 3.5-inch storage drives.



Call Out	Description
1	Locator LED/Locator button: white
2	Service Required LED: amber
3	Power/OK LED: green
4	Power button
5	SP OK LED: green
6	Storage drive 0 (HDD/SSD)
7	Storage drive 1 (HDD/SSD)

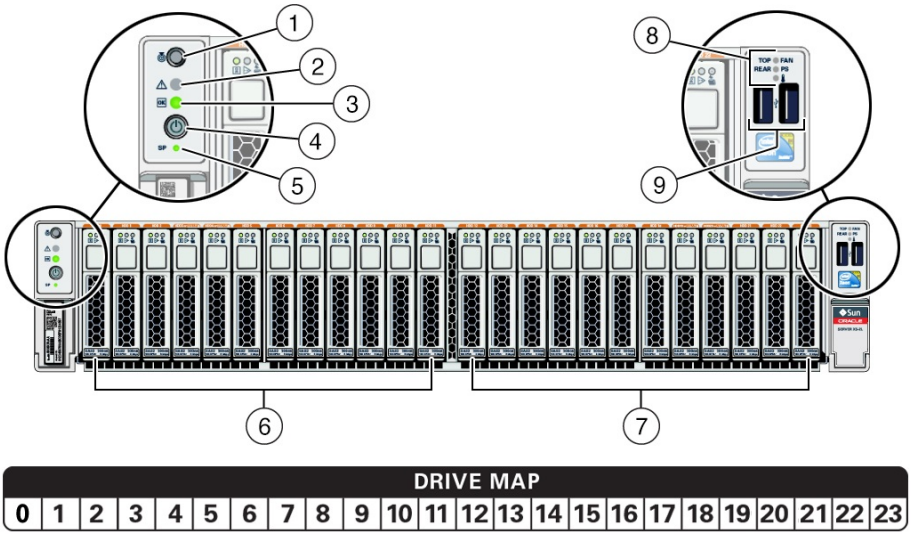
Call Out	Description
8	Storage drive 2 (HDD/SSD)
9	Storage drive 3 (HDD/SSD)
10	Storage drive 4 (HDD/SSD)
11	Storage drive 5 (HDD/SSD)
12	Storage drive 6 (HDD/SSD)
13	Storage drive 7 (HDD/SSD)
14	Storage drive 8 (HDD/SSD)
15	Storage drive 9 (HDD/SSD)
16	Storage drive 10 (HDD/SSD)
17	Storage drive 11 (HDD/SSD)
18	Top Fan Fault LED: amber; Power Supply (PS) Fault LED: amber; System Over Temperature Warning LED: amber
19	USB 2.0 connectors (2)

Related Information

- “Front Panel With Twenty-Four 2.5-inch Drives” on page 30
- “Front Panel With Eight 2.5-inch Drives and DVD” on page 27
- “Back Panel Status Indicators, Connectors, Drives, and PCIe Slots” on page 32

Front Panel With Twenty-Four 2.5-inch Drives

The following figure shows the status indicators (LEDs), connectors, and drives located on the front panel of a Oracle Server X6-2L configured with twenty-four 2.5-inch storage drives.



Call Out	Description
1	Locator LED/Locator button: white
2	Service Action Required LED: amber
3	Power/OK LED: green
4	Power button
5	SP OK LED: green
6	Storage drives 0 through 11 (HDD/SSD; Storage drives 3 and 4: HDD/SSD/NVMe)
7	Storage drives 12 through 23 (HDD/SSD; Storage drives 19 and 20: HDD/SSD/NVMe)
8	Top Fan Fault LED: amber; Power Supply (PS) Fault LED: amber; System Over Temperature Warning LED: amber
9	USB 2.0 connectors (2)

Related Information

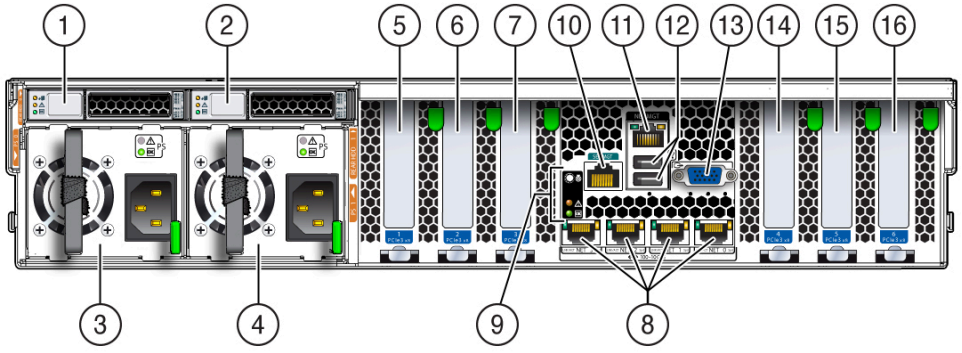
- “Front Panel With Twelve 3.5-inch Drives” on page 29
- “Front Panel With Eight 2.5-inch Drives and DVD” on page 27
- “Back Panel Status Indicators, Connectors, Drives, and PCIe Slots” on page 32

Back Panel Status Indicators, Connectors, Drives, and PCIe Slots

This section shows the Oracle Server X6-2L back panel and the location of status indicators (LEDs), connectors, and PCIe slots.

For information about how to interpret the status indicators (LEDs), refer to the *Oracle Server X6-2L Service Manual*.

Note - Systems that are configured with twelve and twenty-four front panel storage drives also can contain two rear-mounted storage drives. Systems that are configured with eight front panel storage drives do not contain rear-mounted storage drives.



Call Out	Description
1	Rear storage drive 0 (HDD/SSD)
2	Rear storage drive 1 (HDD/SSD)
3	Power supply unit 0 (PS0)
4	Power supply unit 1 (PS1)
5	PCIe slot 1 (Nonfunctional in single-processor systems.)
6	PCIe slot 2 (Nonfunctional in single-processor systems.)
7	PCIe slot 3 (Nonfunctional in single-processor systems. This slot is the default slot for the optional Oracle PCIe Switch Controller Card.)
8	Network (NET) 100/1000/10000 ports (NET3–NET0) (NET2 and NET3 are nonfunctional in single-processor systems.)

Call Out	Description
9	System status LEDs: Locator/Button: white; Service Required: amber; Power/OK: green
10	Serial management (SER MGT)/RJ-45 serial port
11	Oracle Integrated Lights Out Manager (ILOM) service processor (SP) network management 10/100/1000BASE-T port (NET MGT)
12	USB 2.0 ports (2)
13	DB-15 video connector
14	PCIe slot 4
15	PCIe slot 5
16	PCIe slot 6 (This slot is the default slot for the Oracle Storage 12 Gb/s SAS PCIe RAID HBA.)

Related Information

- “Front Panel Status Indicators, Connectors, and Drives” on page 27
- “Server Components” on page 25

Server Management

This section describes the tools you can use to manage the server.

Description	Links
Find information about managing multiple servers.	“Multiple Server Management Tool” on page 35
Learn about the tools available for managing a single server.	“Single Server Management Tools” on page 35
Read an overview of Oracle ILOM and learn where to find more information.	“Oracle ILOM” on page 36
Read an overview of Oracle Hardware Management Pack and learn where to find more information.	“Oracle Hardware Management Pack” on page 36
Read an overview of UEFI BIOS and learn where to find more information.	“Legacy Boot Mode and UEFI Boot Mode” on page 37

Multiple Server Management Tool

If you are managing multiple servers, you can use Oracle Enterprise Ops Center. For information about Ops Center, refer to `https://docs.oracle.com/cd/E40871_01/index.html`.

Single Server Management Tools

The following table lists the tools available for managing a single server:

Tool/Link	Type and Environment	Function
“Oracle ILOM” on page 36	Preinstalled service processor (SP) utility. No installation required. Some initial configuration is required. Operates independently of the host.	Configure and manage server components locally or remotely. Connect to a dedicated network port, a sideband port, or a local serial port.

Tool/Link	Type and Environment	Function
	Provides a web interface and a command-line interface (CLI).	
"Oracle Hardware Management Pack" on page 36	Add-on software pack. For more information, go to https://www.oracle.com/downloads/index.html. Provides commands and agents that operate at the operating system level, and can be used across multiple systems.	Monitor hardware through the host operating system, either remotely using SNMP or locally using command-line interface tools.
"Legacy Boot Mode and UEFI Boot Mode" on page 37	Accessed by booting the system and interrupting the boot process. Provides a simple graphical user interface.	Provides hardware-level management of system functionality.

Oracle ILOM

Oracle Integrated Lights Out Manager (ILOM) enables you to manage the Oracle Server X6-2L. Use Oracle ILOM to connect to the server's service processor (SP). The server is shipped initially with Oracle ILOM version 3.2.6.

The Oracle ILOM software resides on the server's service processor. Use Oracle ILOM software to monitor and manage server components. Oracle ILOM software functions include:

- Configuring network information
- Viewing and editing hardware configurations for the SP
- Monitoring vital system information and viewing logged events
- Managing Oracle ILOM user accounts

You can access the server's SP in either of the following ways:

- "Log In to Oracle ILOM Using a Local Serial Connection" on page 87
- "Log In to Oracle ILOM Using a Local Serial Connection" on page 87

For more information about Oracle ILOM, refer to the Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at https://www.oracle.com/goto/ilom/docs.

Oracle Hardware Management Pack

Oracle Hardware Management Pack provides command-line interface (CLI) tools for managing your servers, and an SNMP monitoring agent.

- You can use the Oracle Hardware Management Pack CLI tools to configure Oracle servers. The CLI tools work with Oracle Solaris, Oracle Linux, Oracle VM, other variants of Linux, and Windows operating systems. The tools can be scripted to support multiple servers, as long as the servers are of the same type.
- With the Hardware Management Agent SNMP Plugins, you can use SNMP to monitor Oracle servers and server modules from the operating system using a single host IP address. This prevents you from having to connect to two management points (Oracle ILOM and the host).

  Oracle Linux Fault Management Architecture (FMA) allows you to manage faults at the operating system level using commands similar to those in the Oracle ILOM Fault Management shell on systems with Oracle Linux 6.5 or newer. This feature is available on Hardware Management Pack 2.3.

For more details on Oracle Hardware Management Pack, refer to the Oracle Hardware Management Pack Documentation Library at https://www.oracle.com/goto/ohmp/docs.

Legacy Boot Mode and UEFI Boot Mode

The BIOS setup utility in the Oracle Server X6-2L is equipped with a Unified Extensible Firmware Interface-compatible BIOS (UEFI) that can be configured to support either UEFI or Legacy boot modes. Legacy Boot Mode is the default mode. Some operating systems cannot boot in UEFI Boot Mode, so the BIOS Setup Utility provides the ability to select between UEFI and Legacy boot modes.

If you change BIOS boot modes, the boot candidates from the previously selected mode are no longer available from the Boot Options Priority List in the BIOS Setup Utility. The boot candidates from the new mode appear in the Boot Options Priority List only after you select Save Changes and Reset from the BIOS Setup Utility menu. Use the Oracle ILOM BIOS Backup and Restore function to preserve the BIOS configuration in case you want to switch back to the previously selected mode. For information, refer to the *Oracle X6 Series Servers Administration Guide* at https://www.oracle.com/goto/x86admindiag/docs.

Most supported operating systems can use either UEFI Boot Mode or Legacy Boot Mode. However, once you choose a boot mode and install an operating system, the installed image can only be used in the mode in which it was installed. For instructions for selecting either UEFI Boot Mode or Legacy BIOS Boot Mode, refer to "Using UEFI" in *Oracle Server X6-2L Service Manual*.

The table below describes the BIOS boot modes.

Boot Mode	Description
Legacy Boot Mode	Choose Legacy Boot Mode to enable host bus adapters (HBAs) to use option ROMs, and when software or adapters do not have UEFI drivers. Legacy BIOS is the default boot mode. In Legacy Boot Mode, only boot candidates that support Legacy Boot Mode appear in the Boot Options Priority List in the BIOS Setup Utility.
UEFI Boot Mode	Choose UEFI Boot Mode when software and adapters use UEFI drivers. You can manually select UEFI Boot Mode during system setup. In UEFI Boot Mode, only boot candidates that support UEFI Boot Mode appear in the Boot Options Priority List in the BIOS Setup Utility. For instructions on making the selection, refer to the *Oracle x86 Administration Guide for X6 Series Servers* at `https://www.oracle.com/goto/x86admindiag/docs`.

Installing the Server Into a Rack

This section describes how to install the server into a rack using the rail assembly in the rackmount kit.

Note - In this guide, the term "rack" means either an open rack or a closed cabinet.

Description	Links
Complete all installation prerequisite tasks.	“Installation Prerequisites” on page 40
Check that your rack meets the requirements for installation of this server.	“Rack Requirements” on page 40
Review safety precautions.	“Safety Precautions” on page 41
Verify that you have received all components in the rackmount kit.	“Rackmount Kit Contents” on page 42
Stabilize the rack.	“Stabilize the Rack for Installation” on page 43
Install mounting brackets onto the server.	“Install Mounting Brackets Onto the Server” on page 43
Mark the rackmount location.	“Mark the Rackmount Location” on page 45
Mark the rackmount location.	“Mark the Rackmount Location” on page 45
Attach the tool-less slide-rail assembly to the rack.	“Connect AC Power Cables Before Installing Tool-less Slide-Rails in Sun Rack II 1042” on page 47
Install the server into the slide-rail assembly.	“Install the Server Into the Slide-Rail Assemblies” on page 52
(Optional) Install the Shipping Bracket With Cable Trough for shipping the server in a rack.	“Install the Shipping Bracket With Cable Trough (Optional)” on page 54
(Optional) Install the cable management arm for routing server cables.	■ “Install the Cable Management Arm” on page 58 ■ “Remove the Cable Management Arm” on page 70

Related Information

- “Installation Procedure” on page 11
- “Preparing for Server Installation” on page 13

Installation Prerequisites

Ensure that the following tasks are complete before you start the rackmount procedures:

- Install all optional components purchased for the server. See “Optional Component Installation” on page 24.
- Ensure that your site meets the required electrical and environmental requirements. See “Preparing for Server Installation” on page 13.

Rack Requirements

The rack into which you install the Oracle Server X6-2L must meet the requirements listed in the following table. Oracle's Sun Rack II is compatible with the Oracle Server X6-2L. For information about the Oracle Sun Rack II, see “Preparing for Server Installation” on page 13.

TABLE 8 Rack Requirements

Item	Requirement
Structure	Four-post rack (mounting at both front and rear). Supported rack types: square hole (9.5 mm) and round hole (M6 or 1/4-20 threaded only). Two-post racks are not compatible.
Rack horizontal opening and unit vertical pitch	Conforms to ANSI/EIA 310-D-1992 or IEC 60927 standards.
Distance between front and rear mounting planes	Minimum 61 cm and maximum 91.5 cm (24 inches to 36 inches).
Clearance depth in front of front mounting plane	Distance to front cabinet door is at least 2.54 cm (1 inch).
Clearance depth behind front mounting plane	Distance to rear cabinet door is at least 90 cm (35.43 inches) with the cable management arm, or 80 cm (31.49 inches) without the cable management arm.
Clearance width between front and rear mounting planes	Distance between structural supports and cable troughs is at least 45.6 cm (18 inches).
Minimum clearance for service access	Clearance, front of server: 123.2 cm (48.5 inches) Clearance, rear of server: 91.4 cm (36 inches)

Related Information

- “Preparing for Server Installation” on page 13

Safety Precautions

This section describes safety precautions you must follow when installing the server into a rack.

Caution - Leveling feet position: When unpacking at the installation site, or when repackaging and moving the rack to a new location, verify that the leveling feet are up before moving the rack.

Caution - Stabilize Rack: Deploy the anti-tilt bar or legs on the equipment rack before beginning an installation.

Caution - Equipment Loading: Always load equipment into a rack from the bottom up so that the rack will not become top-heavy and tip over. Deploy your rack's anti-tilt 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, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified for the server. For server environmental requirements, see “Environmental Requirements” on page 18.

Caution - Reduced airflow: Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

Caution - Mechanical loading: Mounting of the equipment in the rack should be such that a hazardous condition is not created due to uneven mechanical loading.

Caution - Circuit overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate power ratings should be used when addressing this concern.

Caution - Reliable earthing: Reliable earthing of rackmounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Caution - Mounted Equipment: Slide-rail-mounted equipment is not to be used as a shelf or a work space.

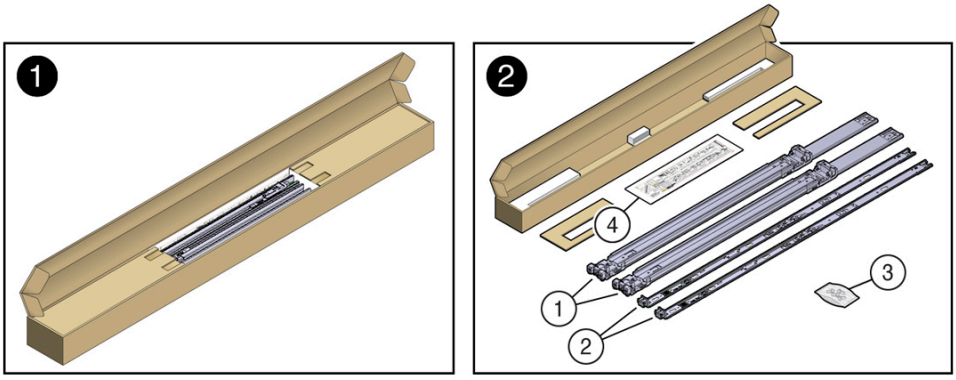
Related Information

- “ESD and Safety Precautions” on page 23

Rackmount Kit Contents

The rackmount kit contains two slide-rails, two mounting brackets, and optional securing screws.

Note - Refer to the rackmount kit installation card for simplified instructions about installing your server into a four-post rack, using the slide-rail and cable management arm options.



Call Out	Description
1	Slide-rails
2	Mounting brackets
3	Four M4 x 5 fine-pitch mounting bracket securing screws (not used)
4	Installation card

Related Information

- “Rack Requirements” on page 40

Stabilize the Rack for Installation

Caution - To reduce the risk of personal injury, stabilize the rack cabinet, and extend all anti-tilt devices before installing the server.

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

1. **Open and remove the front and rear doors from the rack cabinet.**

Note - The front and rear doors need to be removed only if they impinge on the mounting bay.

2. **To prevent the rack cabinet from tipping during the installation, fully extend the rack cabinet's anti-tilt legs or anti-tilt bar, which are located at the bottom front of the rack cabinet.**

3. **If the rack includes leveling feet beneath the rack cabinet to prevent it from rolling, extend these leveling feet fully downward to the floor.**

Caution - When moving the rack to a new location, including repacking, verify that the leveling feet are up before moving the rack.

4. **After the cabinet is installed in its location, you can use the shipping brackets to secure the cabinet to the floor.**

Caution - Shipping brackets are not for use for bracing or anchoring the rack during seismic events.

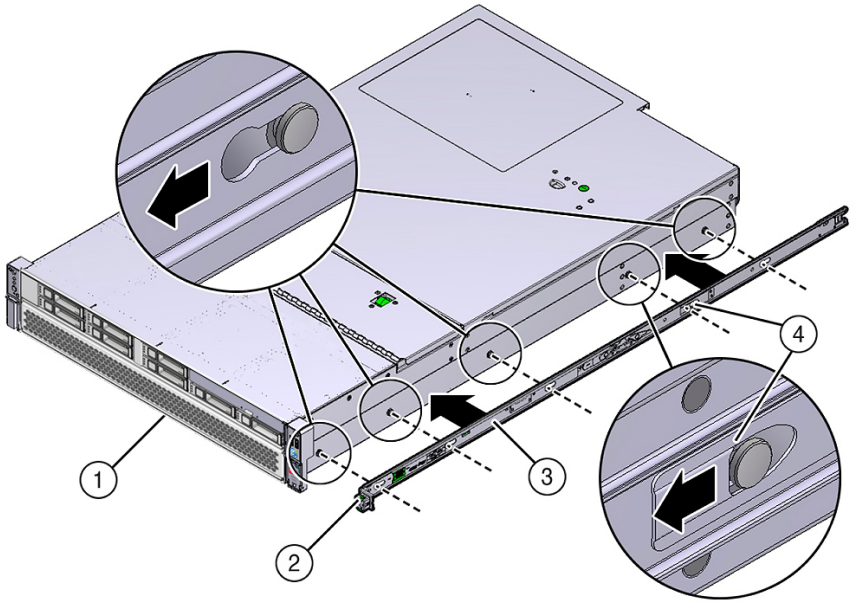
Related Information

- “Safety Precautions” on page 41
- “Preparing for Server Installation” on page 13
- Your rack cabinet documentation

Install Mounting Brackets Onto the Server

To install the mounting brackets onto the sides of the server:

1. **Position a mounting bracket against the chassis so that the slide-rail lock is at the server front, and the five keyhole openings on the mounting bracket are aligned with the five locating pins on the side of the chassis.**



Callout	Description
1	Chassis front
2	Slide-rail lock
3	Mounting bracket
4	Mounting bracket clip

2. **When the heads of the five chassis locating pins protrude through the five keyhole openings in the mounting bracket, pull the mounting bracket toward the front of the chassis until the mounting bracket clip locks into place with an audible click.**

3. **Verify that the rear locating pin has engaged the mounting bracket clip.**

4. **Repeat Step 1 through Step 3 to install the remaining mounting bracket on the other side of the server.**

Related Information

- “Mark the Rackmount Location” on page 45
- “Attach Tool-less Slide-Rail Assemblies” on page 49

▼ Mark the Rackmount Location

Identify the location in the rack where you want to place the server. The server requires two rack units (2U).

Use the rackmount installation card to identify the correct mounting holes for the slide-rails.

Note - Load the rack from bottom to top.

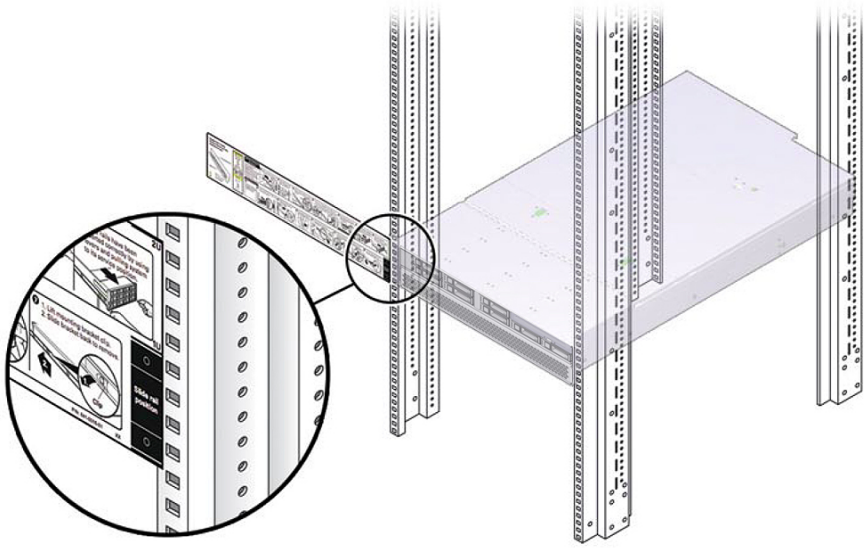
---

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

   See “Rack Requirements” on page 40.

2. **Place the rackmount installation card against the front rails.**

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



3. **Mark the mounting holes for the front slide-rails.**

4. **Mark the mounting holes for the rear slide-rails.**

Related Information

- “Rack Requirements” on page 40
- “Install Mounting Brackets Onto the Server” on page 43
- “Attach Tool-less Slide-Rail Assemblies” on page 49

Connect AC Power Cables Before Installing Tool-less Slide-Rails in Sun Rack II 1042

Note - You must perform the procedure in this section if you are installing the Oracle Server X6-2L in the Sun Rack II 1042 (1000-mm) system rack. This procedure does not need to be performed if you are installing the Oracle Server X6-2L in the Sun Rack II 1242 system rack.

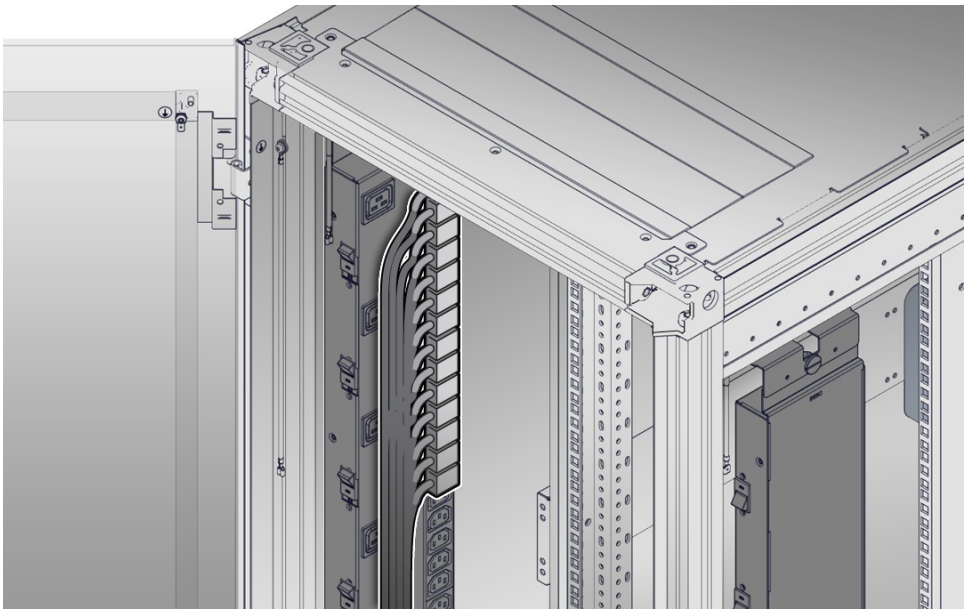
Right-angle AC power cables must be installed before slide-rails when installing the Oracle Server X6-2L into a Sun Rack II 1042 (1000-mm) system rack. The standard rail kit tool-less slide-rails impede access to the 15kVA and 22kVA Power Distribution Unit (PDU) electrical sockets in the 1000-mm rack. If you use the standard AC power cables and then install the slide-rails into the rack, you will be unable to disconnect or remove the AC power cables.

You must use the following 2-meter right-angle AC power cable for this procedure:

- 7079727 - Pwrcord, Jmpr, Bulk, SR2, 2m, C14RA, 10A, C13

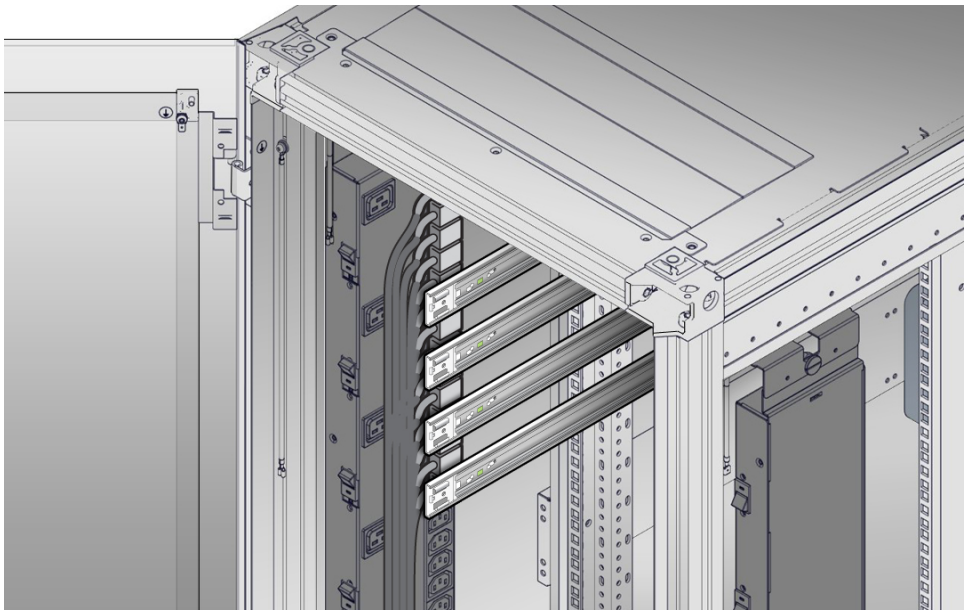
▼ Install AC Power Cables and Slide-Rails

1. **Prior to installing the slide-rails into the rack, install right-angle AC power cables into the left-side and right-side PDU electrical sockets for the servers you are going to rack mount.**



2. **Install the slide-rails into the rack.**

See “Attach Tool-less Slide-Rail Assemblies” on page 49.



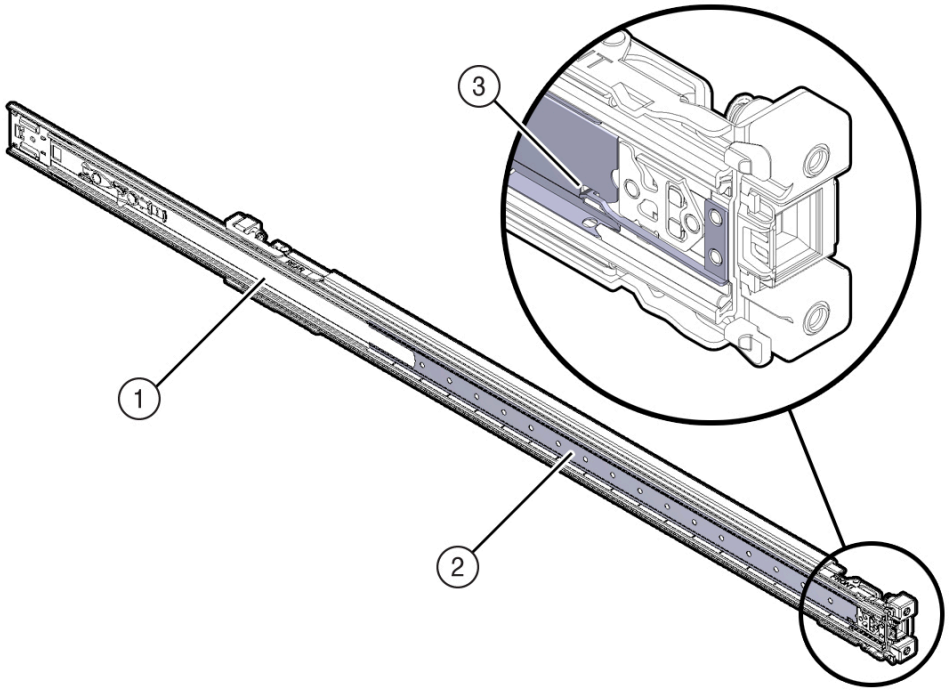
▼ Attach Tool-less Slide-Rail Assemblies

Use this procedure to attach tool-less slide-rail assemblies to the rack.

Note - Right-angle AC power cables (part number 7079727 - Pwrcord, Jmpr, Bulk, SR2, 2m, C14RA, 10A, C13) must be installed before slide-rails when installing the Oracle Server X6-2L into a Sun Rack II 1042 (1000-mm) system rack. The standard rail kit tool-less slide-rails impede access to the 15kVA and 22kVA Power Distribution Unit (PDU) electrical sockets in the 1000-mm rack. If you use the standard AC power cables and then install the slide-rails into the rack, you will be unable to disconnect or remove the AC power cables. Once the slide-rails have been installed into the rack, you will be unable to disconnect or remove the AC power cables.

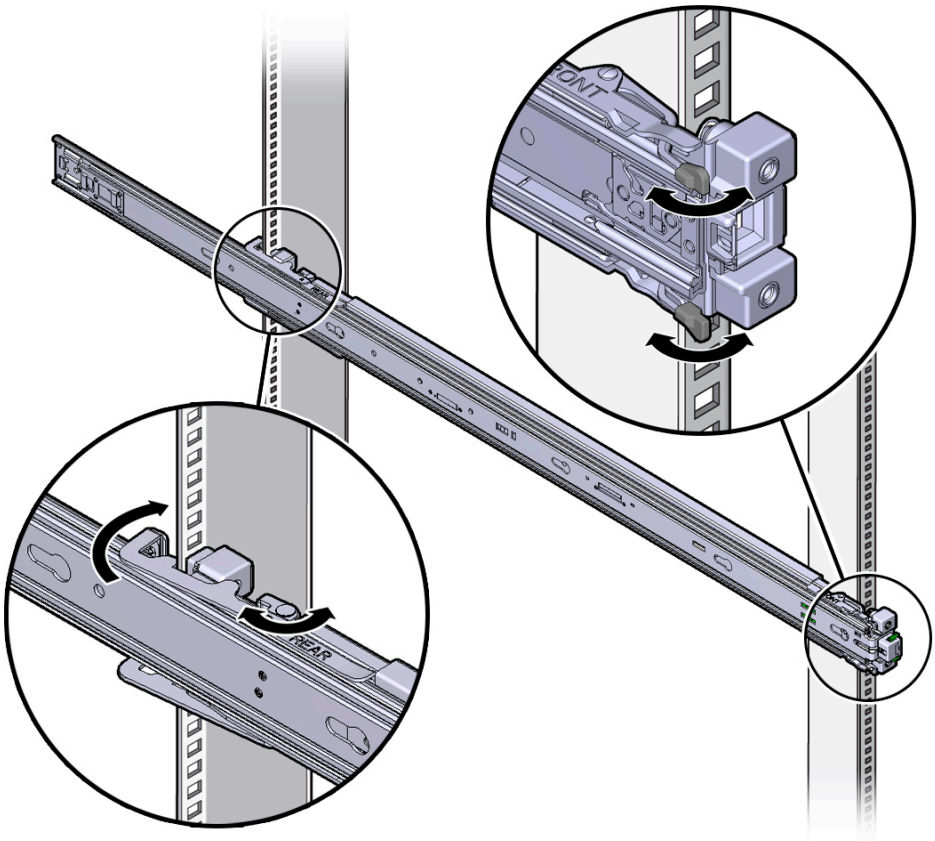
---

1. **Orient the slide-rail assembly so that the ball-bearing track is forward and locked in place.**



Callout	Description
1	Slide-rail
2	Ball-bearing track
3	Locking mechanism

2. **Starting with either the left or right side of the rack, align the rear of the slide-rail assembly against the inside of the rear rack rail, and push until the assembly locks into place with an audible click.**



3. **Align the front of the slide-rail assembly against the outside of the front rack rail, and push until the assembly locks into place with an audible click.**

4. **Repeat Step 1 through Step 3 to attach the slide-rail assembly to the other side of the rack.**

Related Information

- “Install Mounting Brackets Onto the Server” on page 43

- “Mark the Rackmount Location” on page 45
- “Install the Server Into the Slide-Rail Assemblies” on page 52

Install the Server Into the Slide-Rail Assemblies

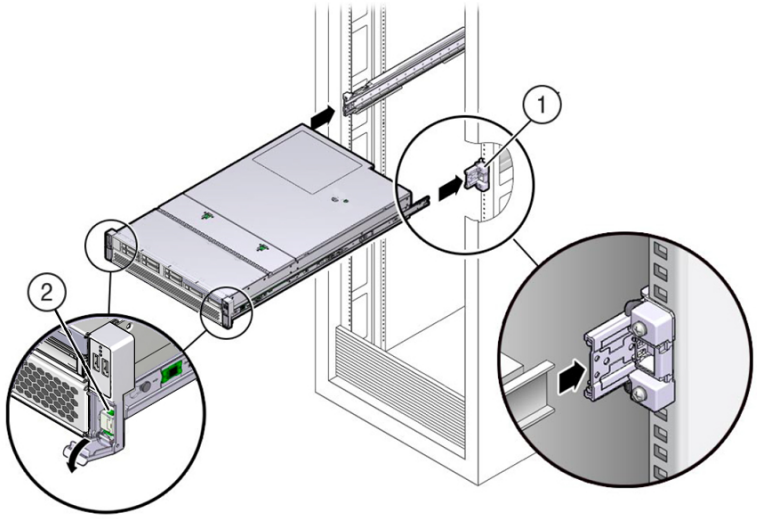
Use this procedure to install the server chassis, with mounting brackets, into the slide-rail assemblies that are mounted to the rack.

Caution - This procedure requires a minimum of two people because of the weight of the server. Attempting this procedure alone could result in equipment damage or personal injury.

Caution - Always load equipment into a rack from the bottom up so that the rack does not become top-heavy and tip over. Extend your rack's anti-tilt bar to prevent the rack from tipping during equipment installation.

1. **Push the slide-rails into the slide-rail assemblies in the rack as far as possible.**
2. **Position the server so that the rear ends of the mounting brackets are aligned with the slide-rail assemblies that are mounted in the rack.**

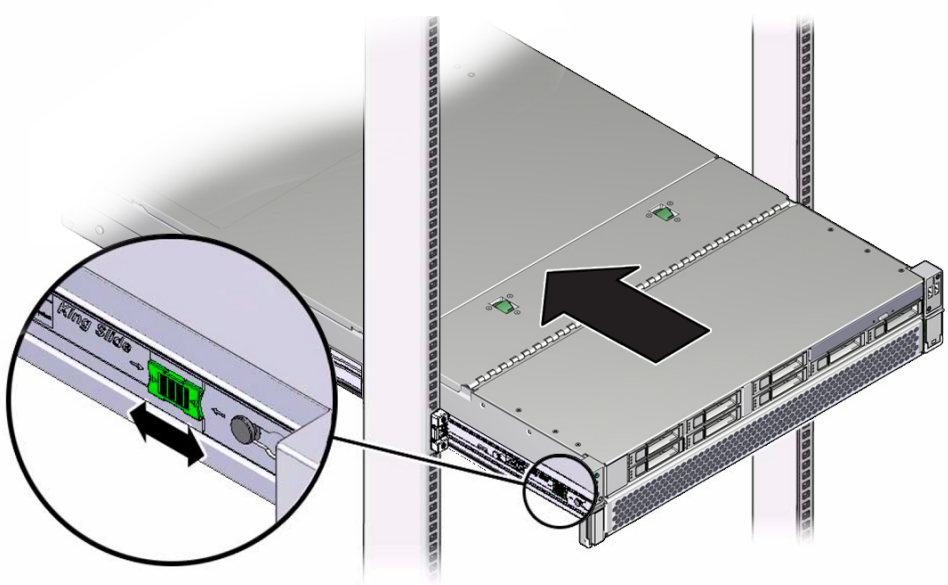
3. **Insert the mounting brackets into the slide-rails, and then push the server into the rack until the mounting brackets encounter the slide-rail stops (approximately 12 inches, or 30 cm).**



Callout	Description
1	Inserting mounting bracket into slide-rail
2	Slide-rail release lever

4. **Simultaneously pull down and hold the slide-rail release levers on each mounting bracket while you push the server into the rack. Continue pushing the server into the rack until the slide-rail locks (on the front of the mounting brackets) engage the slide-rail assemblies.**

You hear an audible click.



Caution - Verify that the server is securely mounted in the rack and that the slide-rail locks are engaged with the mounting brackets before you install the optional cable management arm.

Related Information

- “Install the Cable Management Arm” on page 58

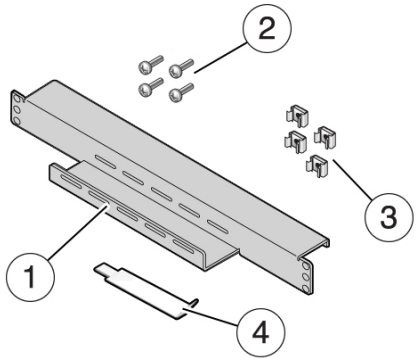
Install the Shipping Bracket With Cable Trough (Optional)

If you plan to ship the server in a rack with a space of one or more rack units below the server, you must install the Shipping Bracket With Cable Trough to prevent damage to the server. The bracket is required for each server in the rack that meets this requirement.

The Shipping Bracket With Cable Trough is a separately orderable option. For information about ordering the Shipping Bracket With Cable Trough, contact your Oracle Sales representative.

1. **Unpack the Shipping Bracket With Cable Trough and components.**

   The following figure shows the components that are needed for the installation.



Callout	Description
1	Shipping Bracket With Cable Trough
2	Four 16-mm M6 screws
3	Four cage nuts
4	Cage nut insertion tool

2. **For racks configured with square hole RETMA rails, install the four cage nuts as follows.**

Note - This step is not necessary for racks configured with threaded RETMA rails.

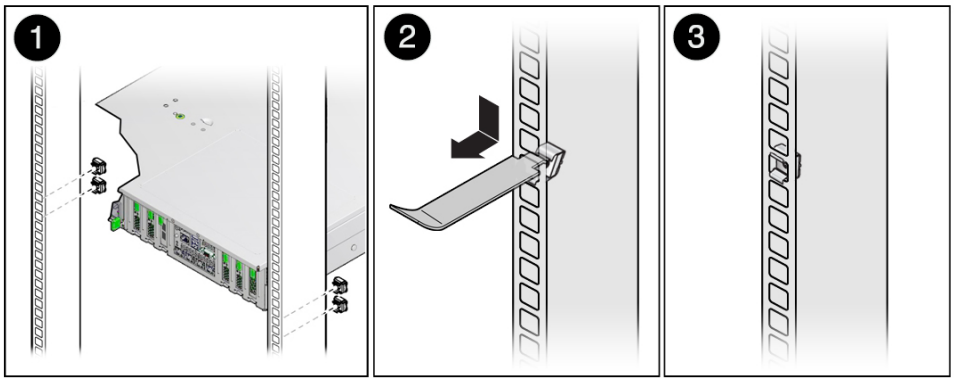
   a. **Using your equipment's rack alignment template, or other equipment documentation, locate the first and third rail holes below the rear panel of the server, along the left and right sides of the chassis. [1]**

b. **Retrieve a cage nut and hook the bottom lip of the cage nut in one of the rail holes.**

c. **Insert the tip of the cage nut insertion tool through the rail hole and hook the top lip of the cage nut. [2]**

d. **Using the insertion tool, pull the cage nut through the hole until the top lip snaps into place.**

e. **Repeat Step 2a through Step 2d for the remaining cage nuts.**



3. **Slide the bracket underneath the rear bottom edge of the server chassis with the cable trough facing up, aligning the top holes in the bracket with the first rail holes below the rear panel of the server.**

4. **Using a No. 2 Phillips screwdriver, secure the bracket to the rack using four 16-mm M6 screws.**

   Ensure that the bracket rests firmly against the bottom of the server chassis.

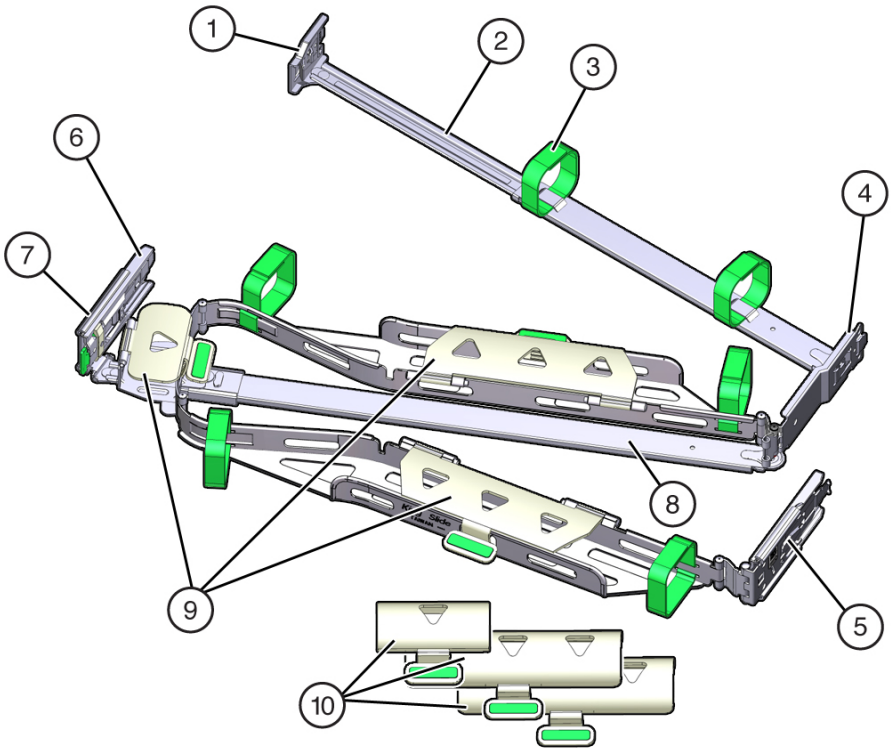
5. **If necessary, lay any cables protruding from the server back panel into the cable trough.**

Install the Cable Management Arm

Follow this procedure to install the cable management arm (CMA), which you can use to manage cables connected to the rear of the server.

Note - Before installing the cable management arms (CMAs), ensure that the right-angle AC power cables are long enough to connect to the rack-mounted servers when routed through the CMAs.

1. **Unpack the CMA.**
The following figure shows the CMA components.



Callout	Description
1	Connector A
2	Front slide bar
3	Velcro straps (6)
4	Connector B
5	Connector C
6	Connector D
7	Slide-rail latching bracket (used with connector D)
8	Rear slide bar
9	Oracle Server X6-2 cable covers
10	Oracle Server X6-2L cable covers

2. **Ensure that the correct cable covers for your server are installed on the CMA. The Oracle Server X6-2L (2U system) uses the round cable covers.**

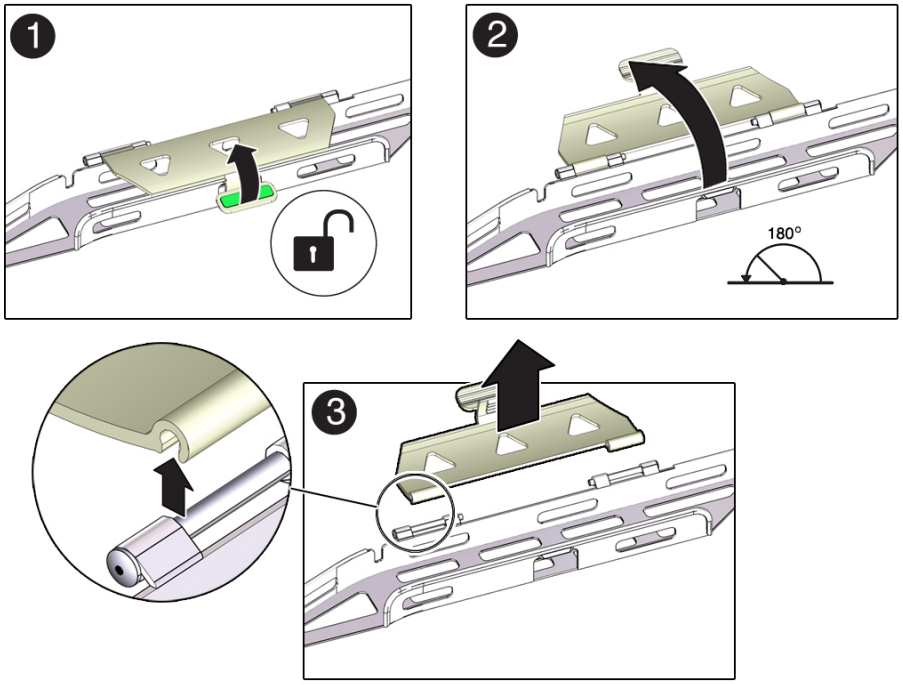
Note - The CMA ships with three flat cable covers installed. If you are going to install the CMA on a Oracle Server X6-2L, you need to remove the flat cable covers and install the round cable covers.

3. **Remove the flat cable covers and install the round cable covers.**

To remove the flat cable covers and install the round cable covers, perform these steps:

a. **Lift up on the cable cover handle (the handle is colored green) and open it 180 degrees to the horizontal position as shown in the following figure [frames 1 and 2].**

Note - The CMA has three cable covers, two with two hinges (one of which is shown the following figure), and one with a single hinge. All three cable covers are shown in the illustration in Step 1.



b. **Apply upward pressure to the outside edge of each hinge connector until the hinge connector comes off the hinge [frame 3].**

c. **Repeat Step 3a and Step 3b to remove all three cable covers.**

d. **One at a time, position each round cable cover horizontally over the hinges, and align the hinge connectors with the hinges.**

e. **Using your thumb, apply downward pressure on each hinge connector to snap the hinge connector into place.**

f. **Swing the cable covers down and press down on the cable cover handle to lock them into the closed position.**

4. **Ensure that the six Velcro straps are threaded into the CMA.**

Note - Ensure that the two Velcro straps located on the front slide bar are threaded through the opening in the top of the slide bar as shown in the illustration in Step 1. This prevents the Velcro straps from interfering with the expansion and contraction of the slide bar when the server is extended out of the rack and returned into the rack.

---

5. **To make it easier to install the CMA, extend the server approximately 13 cm (5 inches) out of the front of the rack.**

6. **Take the CMA to the back of the equipment rack, and ensure that you have adequate room to work at the back of the server.**

Note - References to “left” or “right” in this procedure assume that you are facing the back of the equipment rack.

Note - Throughout this installation procedure, support the CMA and do not allow it to hang under its own weight until it is secured at all four attachment points.

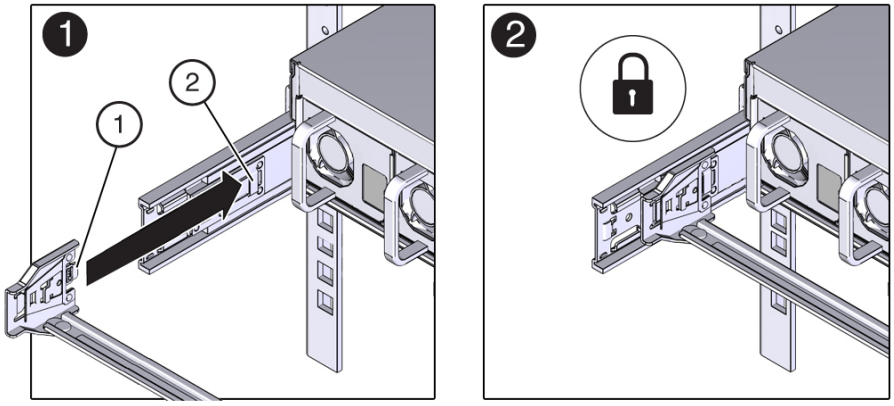
---

7. **To install the CMA's connector A into the right slide-rail:**

a. **Insert the CMA's connector A into the front slot on the left slide-rail until it locks into place with an audible click [frames 1 and 2].**

The connector A tab (see callout 1) goes into the slide-rail's front slot (callout 2).

b. Gently tug on the right side of the front slide bar to verify that connector A is properly seated.



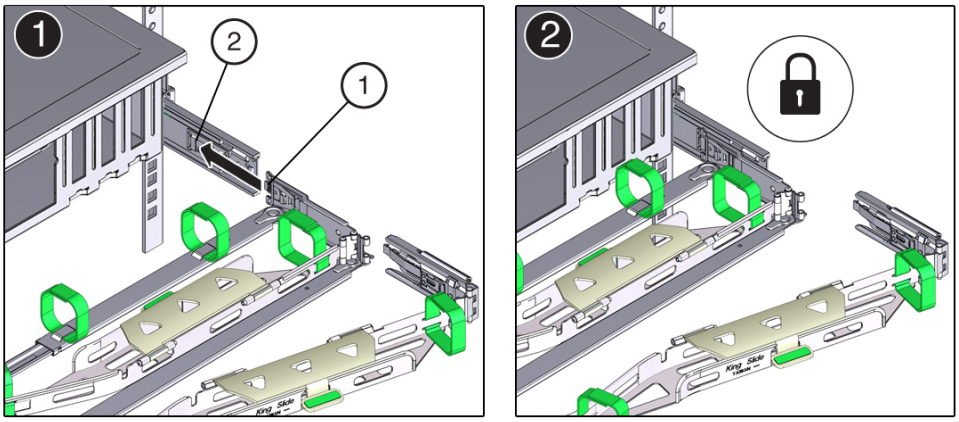
Callout	Description
1	Connector A tab
2	Left slide-rail front slot

8. To install the CMA's connector B into the right slide-rail:

a. Insert the CMA's connector B into the front slot on the right slide-rail until it locks into place with an audible click [frames 1 and 2].

The connector B tab (see callout 1) goes into the slide-rail's front slot (callout 2).

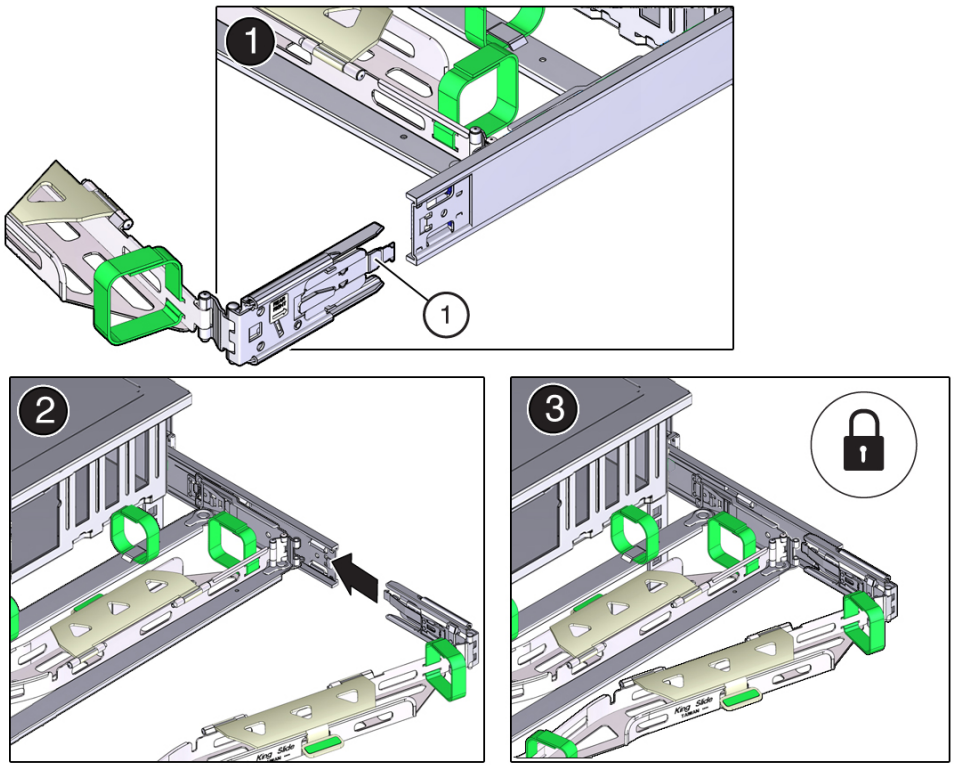
b. **Gently tug on the right side of the front slide bar to verify that connector B is properly seated.**



Callout	Description
1	Connector B tab
2	Right slide-rail front slot

9. **To install the CMA's connector C into the right slide-rail:**

a. **Align connector C with the slide-rail so that the locking spring (callout 1) is positioned inside (server side) of the right slide-rail [frame 1].**



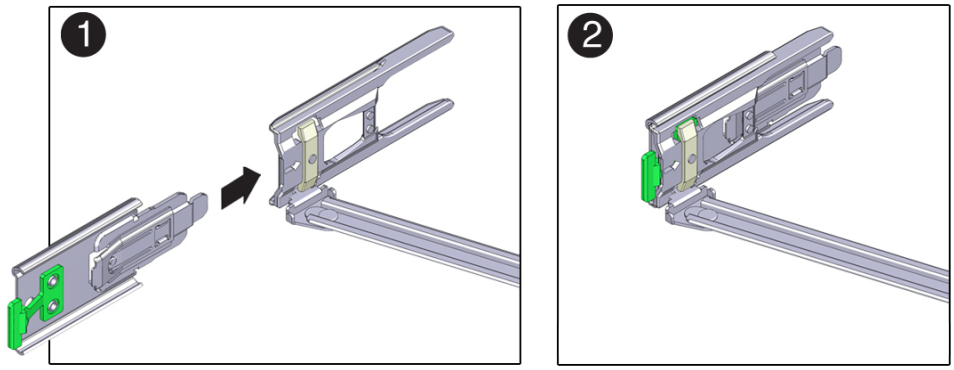
Callout	Description
1	Connector C locking spring

b. **Insert connector C into the right slide-rail until it locks into place with an audible click [frames 2 and 3].**

c. **Gently tug on the right side of the CMA's rear slide bar to verify that connector C is properly seated.**

10. **To prepare the CMA's connector D for installation, remove the tape that secures the slide-rail latching bracket to connector D and ensure that the latching bracket is properly aligned with connector D [frames 1 and 2].**

Note - The CMA is shipped with the slide-rail latching bracket taped to connector D. You must remove the tape before you install this connector.



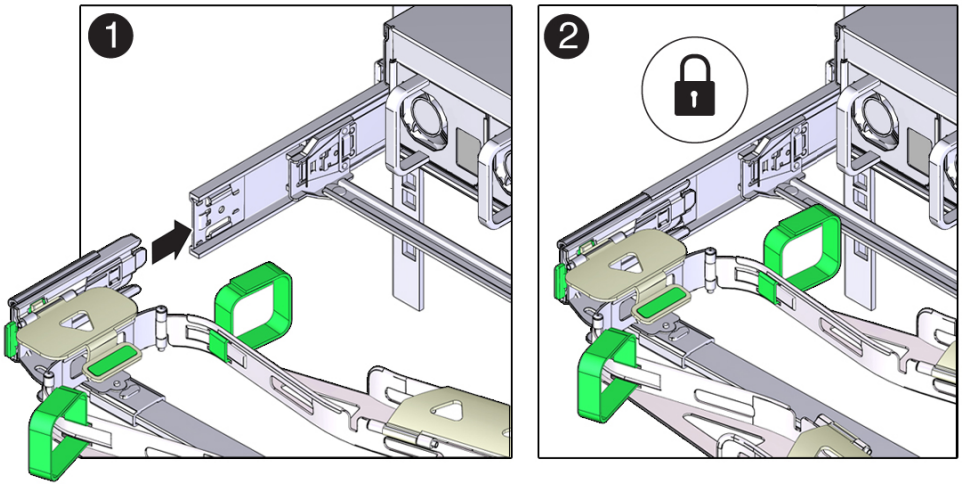
11. **To install the CMA's connector D into the left slide-rail:**

    a. **While holding the slide-rail latching bracket in place, insert connector D and its associated slide-rail latching bracket into the left slide-rail until connector D locks into place with an audible click [frames 1 and 2].**

Note - When inserting connector D into the slide-rail, the preferred and easier method is to install connector D and the latching bracket as one assembly into the slide-rail.

    b. **Gently tug on the left side of the CMA's slide bar to verify that connector D is properly seated.**

Note - The slide-rail latching bracket has a green release tab. This tab is used to release and remove the latching bracket so that you can remove connector D.



12. **Gently tug on the four CMA connection points to ensure that the CMA connectors are fully seated before you allow the CMA to hang by its own weight.**

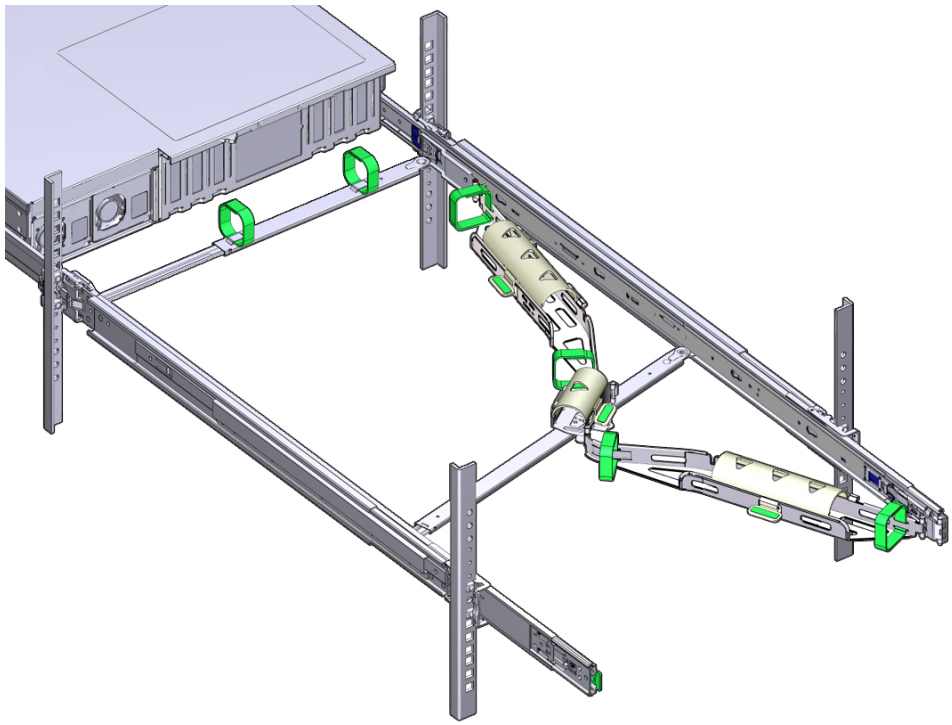
13. **To verify that the slide-rails and the CMA are operating properly before routing cables through the CMA:**

    a. **Extend all rack anti-tilt devices to prevent the rack from tipping forward when the server is extended.**

Caution - To reduce the risk of personal injury, stabilize the rack cabinet and extend all anti-tilt devices before extending the server from the rack.

For instructions to stabilize the rack, see "Stabilize the Rack for Installation" on page 43.

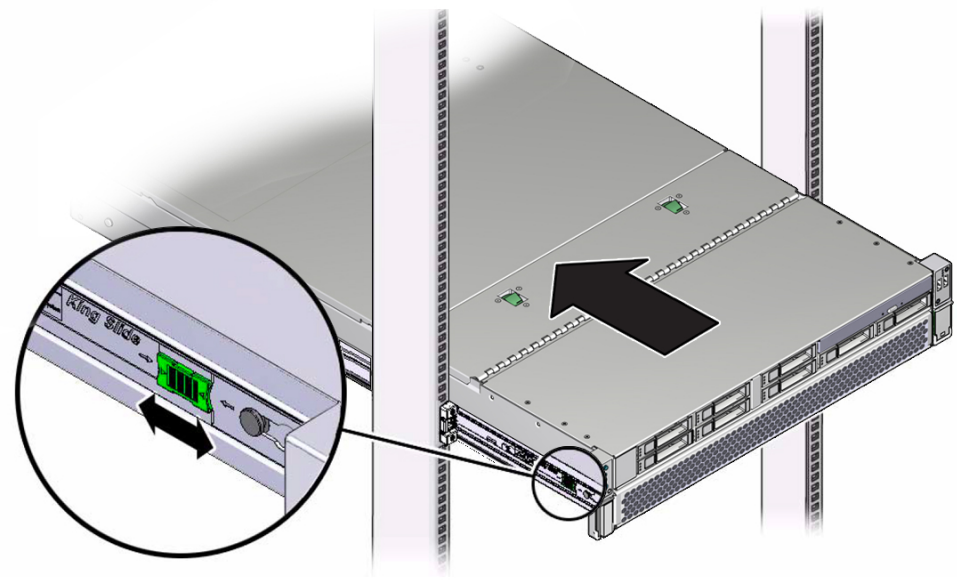
b. **Extend the server from the front of the rack until the CMA is fully extended.**



14. **To return the server to the rack:**

a. **Simultaneously pull and hold the two green release tabs (one on each side of the server) toward the front of the server while you push the server into the rack. As you push the server into the rack, verify that the CMA retracts without binding.**

Note - To pull the green release tabs, place your finger in the center of each tab, not on the end, and apply pressure as you pull the tab toward the front of the server.



b. Continue pushing the server into the rack until the slide-rail locks (on the front of the server) engage the slide-rail assemblies.

You will hear an audible click when the server is in the normal rack position.

15. Connect cables to the server, as required.

Instructions for connecting the server cables are provided in "Cabling the Server and Applying Power" on page 77.

16. Open the CMA cable covers, route server cables through the CMA's cable troughs, close the cable covers, and secure the cables with the six Velcro straps.

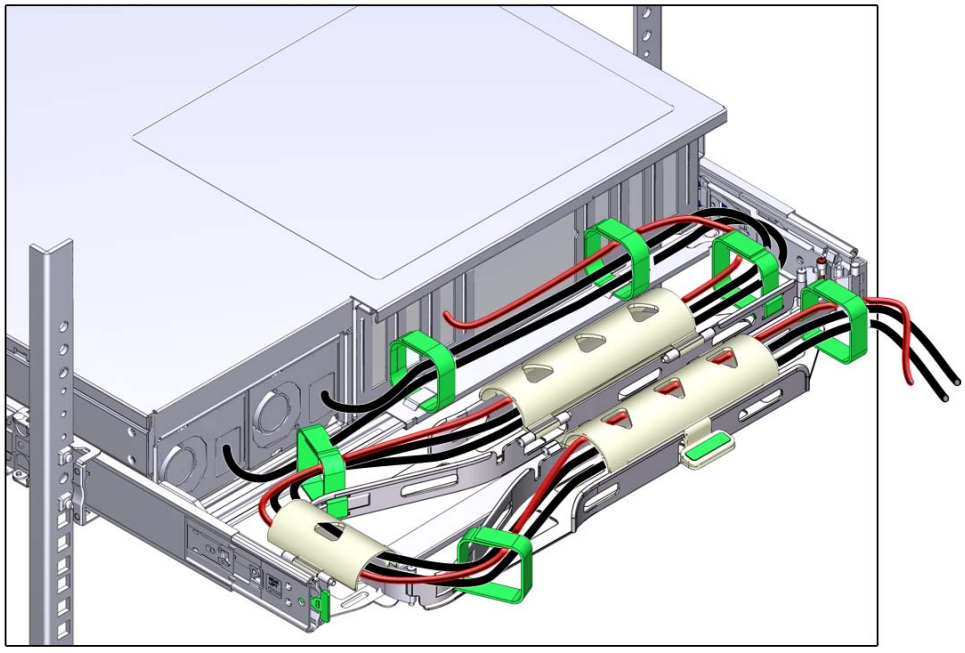
Route the cables through the cable troughs in this order:

a. First through the front-most cable trough

b. Then through the small cable trough

c. Then through the rear-most cable trough

Note - When securing the cables with the Velcro straps located on the front slide bar, ensure that the Velcro straps do not wrap around the bottom of the slide bar; otherwise, expansion and contraction of the slide bar might be hindered when the server is extended from the rack and returned to the rack.



17. Ensure that the secured cables do not extend above the top or below the bottom of the server to which they are attached; otherwise, the cables might snag on other equipment installed in the rack when the server is extended from the rack or returned to the rack.

Note - If necessary, bundle the cables with additional Velcro straps to ensure that they stay clear of other equipment. If you need to install additional Velcro straps, wrap the straps around the cables only, not around any of the CMA components; otherwise, expansion and contraction of the CMA slide bars might be hindered when the server is extended from the rack and returned to the rack.

Related Information

- “Remove the Cable Management Arm” on page 70

▼ Remove the Cable Management Arm

Follow this procedure to remove the cable management arm (CMA).

Before you begin this procedure, refer to the illustration in Step 1 and identify CMA connectors A, B, C, and D. You should disconnect the CMA connectors in the reverse order in which you installed them, that is, disconnect connector D first, then C, then B, and finally A.

Throughout this procedure, once you disconnect any of the CMA's four connectors, do not allow the CMA to hang under its own weight.

Note - References to “left” or “right” in this procedure assume that you are facing the back of the equipment rack.

1. **To prevent the rack from tipping forward when the server is extended, extend all rack anti-tilt devices.**

Caution - To reduce the risk of personal injury, stabilize the rack cabinet and extend all anti-tilt devices before extending the server from the rack.

For instructions to stabilize the rack, see “Stabilize the Rack for Installation” on page 43.

2. **To make it easier to remove the CMA, extend the server approximately 13 cm (5 inches) out of the front of the rack.**

3. **To remove the cables from the CMA:**

   a. **Disconnect all cables from the rear of the server.**

b. **If applicable, remove any additional Velcro straps that were installed to bundle the cables.**

c. **Unwrap the six Velcro straps that are securing the cables.**

d. **Open the three cable covers to the fully opened position.**

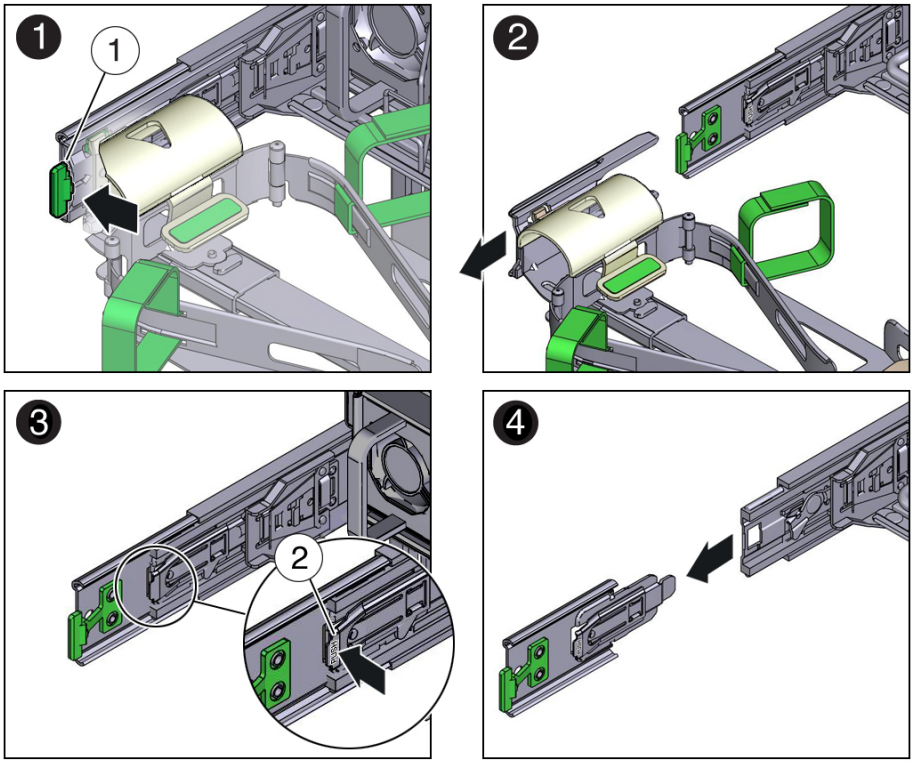
e. **Remove the cables from the CMA and set them aside.**

4. **To disconnect connector D:**

a. **Press the green release tab (callout 1) on the slide-rail latching bracket toward the left and slide the connector D out of the left slide-rail [frames 1 and 2].**

When you slide connector D out of the left slide-rail, the slide-rail latching bracket portion of the connector remains in place. You will disconnect it in the next step.

Note - Once you have disconnected connector D, you must not allow the CMA to hang under its own weight. Throughout the remainder of this procedure, the CMA must be supported until all the remaining connectors are disconnected and the CMA can be placed on a flat surface.



Callout	Description
1	Connector D release tab (green)
2	Slide-rail latching bracket release tab (labeled PUSH)

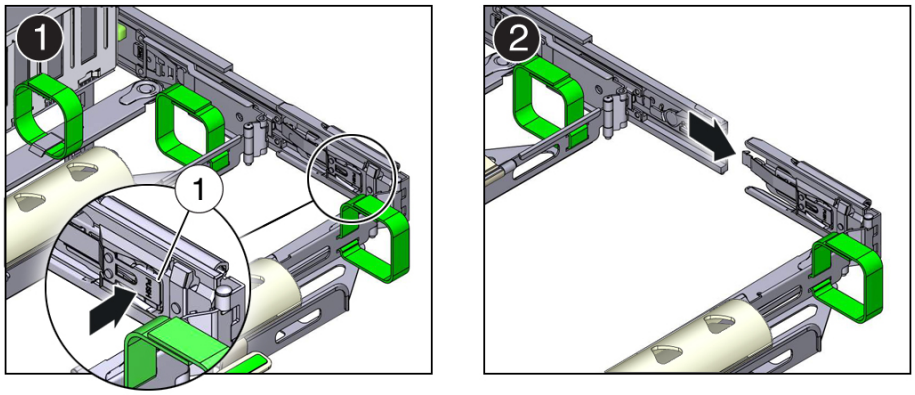
b. Use your right hand to support the CMA and use your left thumb to push in (toward the left) on the connector D latching bracket release tab labeled

PUSH (callout 2), and pull the latching bracket out of the left slide-rail and put it aside [frames 3 and 4].

5. **To disconnect connector C:**

   a. **Place your left arm under the CMA to support it.**

   b. **Use your right thumb to push in (toward the right) on the connector C release tab labeled PUSH (callout 1), and pull connector C out of the right slide-rail [frames 1 and 2].**

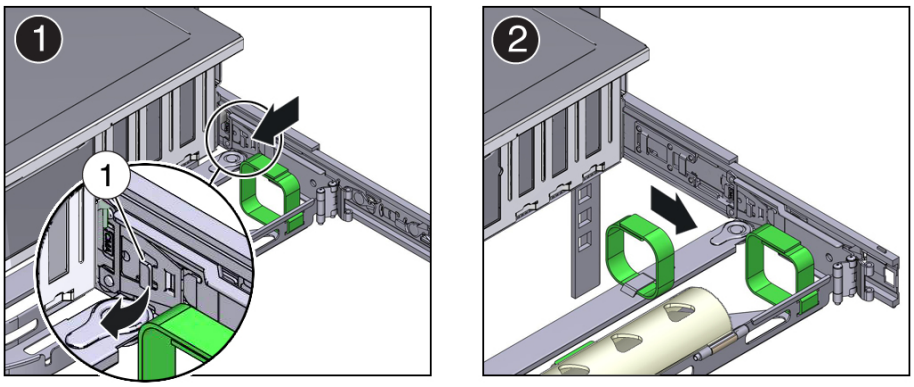


Callout	Description
1	Connector C release tab (labeled PUSH)

6. **To disconnect connector B:**

   a. **Place your right arm under the CMA to support it and grasp the rear end of connector B with your right hand.**

b. **Use your left thumb to pull the connector B release lever to the left away from the right slide-rail (callout 1) and use your right hand to pull the connector out of the slide-rail [frames 1 and 2].**

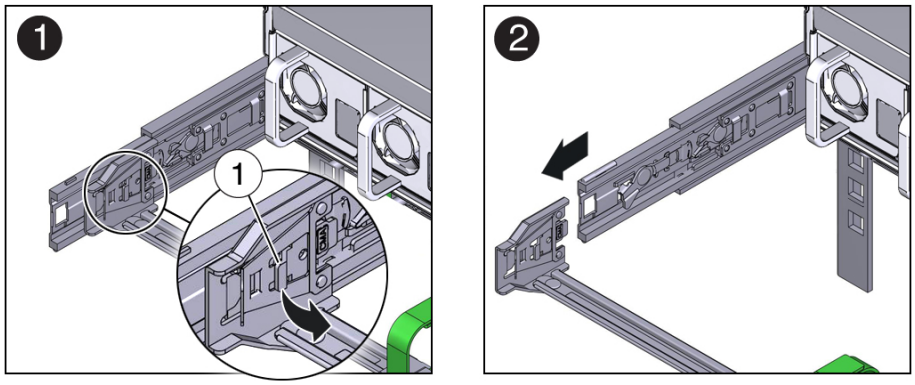


Callout	Description
1	Connector B release lever

7. **To disconnect connector A:**

   a. **Place your left arm under the CMA to support it and grasp the rear end of connector A with your left hand.**

b. **Use your right thumb to pull the connector A release lever to the right away from the left slide-rail (callout 1), and use your left hand to pull the connector out of the slide-rail [frames 1 and 2].**



Callout	Description
1	Connector A release lever

8. **Remove the CMA from the rack and place it on a flat surface.**
9. **Go to the front of the server and push it back into the rack.**

Related Information

- “Install the Cable Management Arm” on page 58

Cabling the Server and Applying Power

This section contains procedures for connecting data and server management cables and power cords to the server.

Description	Links
Review connector port locations.	“Rear Cable Connections and Ports” on page 77
Learn about server Ethernet ports.	“Ethernet Ports” on page 79
Connect data cables and power cords to the server.	“Connecting Cables and Power Cords” on page 80
Power on the server.	“Powering On the Server” on page 82

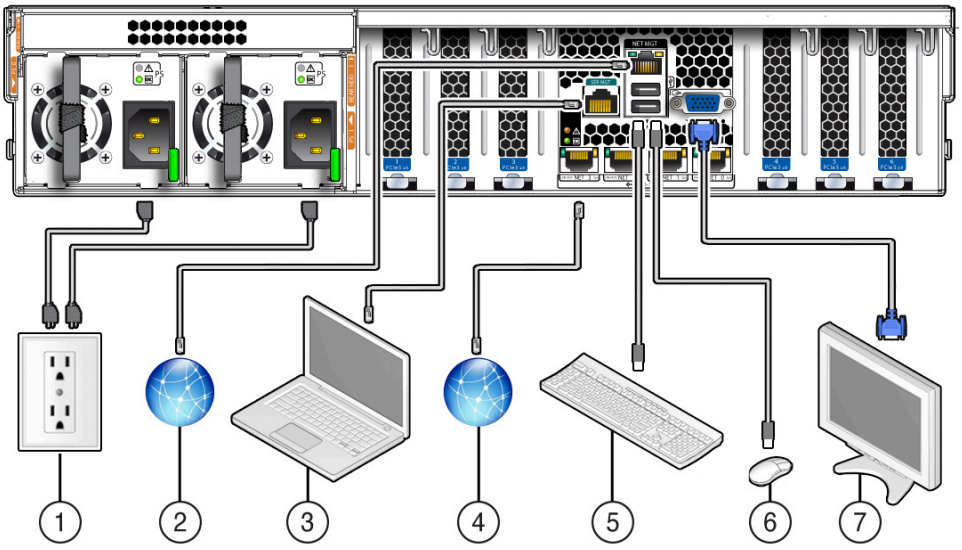
Related Information

- “Installation Procedure Overview” on page 11
- “Install the Cable Management Arm” on page 58
- “Connecting to Oracle ILOM” on page 85

Rear Cable Connections and Ports

The following figure shows the locations of cable connectors and ports on the back of the Oracle Server X6-2L and the cables and devices that you typically connect to them.

FIGURE 1 Rear Panel Cabling Reference



No.	Cable Port or Expansion Slot	Description
1	Power supply 0 input power Power supply 1 input power	The server has two power supply connectors, one for each power supply. Do not attach power cables to the power supplies until you have finished connecting the data cables to the server. The server goes into standby power mode, and the Oracle ILOM service processor initializes when 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. **Note -** Oracle ILOM signals a fault on any installed power supply that is not connected to an AC power source, since it indicates a loss of redundancy.
2	Network management port (NET MGT)	The service processor NET MGT port is the optional connection to the Oracle ILOM service processor. The NET MGT port is configured by default to use Dynamic Host Configuration Protocol (DHCP). The service processor NET MGT port uses an RJ-45 cable for a 10/100/1000BASE-T connection.
3	Serial management port (SER MGT)	The service processor SER MGT port uses an RJ-45 cable and is the default connection to the Oracle ILOM service processor. This port supports local connections to the server and only recognizes Oracle ILOM command-line interface (CLI) commands. Typically you connect a terminal or terminal emulator to this port.

No.	Cable Port or Expansion Slot	Description
		Note - This port does not support network connections.
4	Ethernet ports (NET 3, NET 2, NET 1, NET 0)	The four 10-Gigabit Ethernet ports enable you to connect the system to the network. See "Ethernet Ports" on page 79 for more information. **Note -** Ethernet ports NET2 and NET3 are nonfunctional in single-processor systems.
5, 6	USB ports (USB 0, USB 1)	The two USB ports support hot-plugging. You can connect and disconnect USB cables and peripheral devices while the server is running without affecting system operations.
7	Video port (VGA)	Use a 15-pin video cable to connect a VGA video device to the server. Optionally, you can connect to the VGA port when installing the operating system.

Related Information

- "Ethernet Ports" on page 79
- "Connecting Cables and Power Cords" on page 80
- "Powering On the Server" on page 82

Ethernet Ports

The server has four RJ-45 10-Gigabit Ethernet (10GbE) network connectors, labeled NET3, NET2, NET1, and NET0, from left to right on the server rear panel. Use these ports to connect the server to the network.

Note - Ethernet ports NET2 and NET3 are nonfunctional in single-processor systems.

The LEDs located above each NET port are Link/Activity (left) and Speed (right) indicators for each port. The following table lists the Ethernet transfer rates and the Speed LED color.

Connection Type	IEEE Terminology	Speed LED Color	Transfer Rate
Fast Ethernet	100BASE-TX	Off	100 Mbits/sec
Gigabit Ethernet	1000BASE-T	Amber	1,000 Mbits/sec
10 Gigabit Ethernet	10GBASE-T	Green	10,000 Mbits/sec

Related Information

- "Rear Cable Connections and Ports" on page 77
- "Connecting Cables and Power Cords" on page 80

- "Powering On the Server" on page 82

Preparing for Installation and Power On

Setting up the server for the first time takes about 1 hour. Plan for additional time if you are installing optional components and rackmounting hardware.

Caution - Do not apply full main power until instructed to do so. The server includes a service processor (SP) that is used to configure and boot the host server. To properly configure the host server and to view SP messages, do not apply AC power to the server until the SP and host networking connections are made, as described in this guide.

▼ Prepare to Install the Server

1. **Choose the best way to set up your server environment.**

   The instructions in this guide work for any networking environment and require a terminal device for connecting to the server's serial management port (SER MGT). If you have a networking environment running Dynamic Host Control Protocol (DHCP), you can configure your network using the Ethernet management port (NET MGT).

2. **Obtain a terminal device.**

   To communicate with the SP, you need a terminal device, which can be a terminal, a terminal server, or a laptop running terminal emulation software. Set up the terminal device to communicate using 9600 baud, 8 bit, no parity, and 1 stop bit. For DTE-to-DTE communication, use the supplied RJ-45 crossover adapters with a standard RJ-45 cable to set up a null modem configuration so that transmit and receive signals are crossed over.

Connecting Cables and Power Cords

The following procedure explains how to cable the server for the first time, and then how to connect to the Oracle Integrated Lights Out Manager (ILOM) service processor (SP) using a serial connection.

You can also connect to Oracle ILOM using one of these methods:

- **Dedicated remote network management connection –** For information, see “Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 87.
- **Remote sideband management connnection –** For information, refer to Sideband Network Management Connection in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `https://www.oracle.com/goto/ilom/docs`.
- **Host-to-ILOM interconenct –** For information, refer to Dedicated Interconnect SP Management in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `https://www.oracle.com/goto/ilom/docs`.

Caution - Do not apply full main power to the server until instructed to do so. To properly configure the server and to view SP messages, cable the server as described in this procedure before applying power to the server.

▼ Connect Cables and Power Cords

Refer to Figure 1, “Rear Panel Cabling Reference,” on page 78 to locate the ports and AC inlets on the server back panel.

1. **Connect a serial cable between the server's serial management port (SER MGT) and a terminal device.**

   This connection provides the initial communication to the SP.

2. **(Optional) Connect an Ethernet cable between the network management port (NET MGT) and the network to which connections to the Oracle ILOM SP and host will be made.**

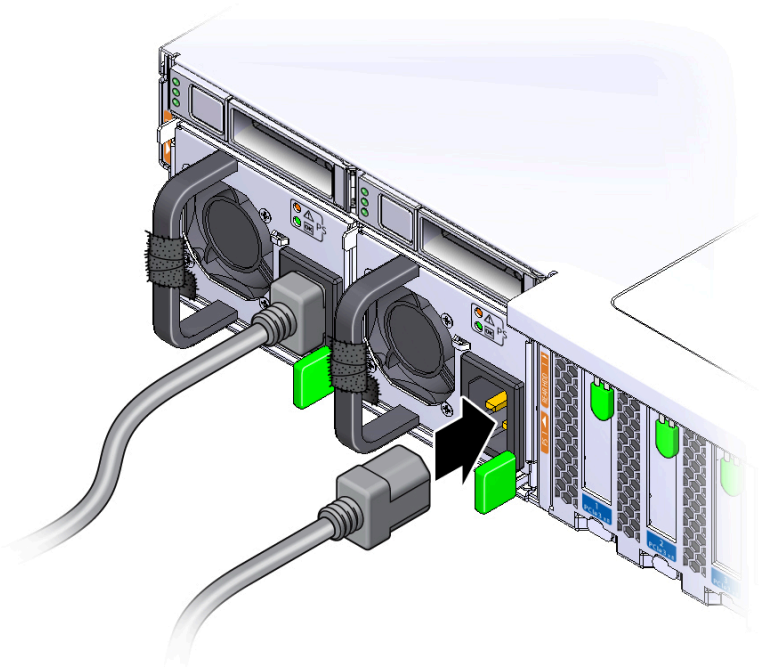
   Configure the server for the first time using the SER MGT port. After initial configuration, you can set up communication between the SP and host through this Ethernet interface.

3. **For network access, connect an Ethernet cable between one of the the server's Ethernet NET ports (NET0-3) and the network to which the server will communicate.**

   Note - Ethernet ports NET2 and NET3 are non-functional in single-processor systems.

4. **Connect the power cords to the two AC inlets on the back panel of the server.**

Use a Velcro strap to secure the power cords to the power supply handle as shown in the following figure.



Caution - Damage to Server Components: Do not operate the server unless all fans, component heak sinks, air baffles, and the top cover are installed.

Related Information

- “Rear Cable Connections and Ports” on page 77
- “Ethernet Ports” on page 79

Powering On the Server

This section explains how to power on the server locally using a serial connection and Oracle ILOM.

If you want to power on the server remotely using an Ethernet connection and Oracle ILOM, see “Log In to Oracle ILOM Using a Local Serial Connection” on page 87 for instructions.

Power On the Server

Use the following procedure to power on the server locally using a serial connection to Oracle ILOM. For more information about powering on the server using other methods, see “Controlling System Power” on page 103.

For the location of the status indicators (LEDs) on the server front panel, see “Front Panel Status Indicators, Connectors, and Drives” on page 27.

1. **Connect the grounded power cords to two separate power sources.**

   The server is equipped with two power supplies. Connect the power supplies to separate power sources to provide power redundancy. The server can operate with one power source; however, using only one power source eliminates redundancy.

   When the power cords are connected to the server's AC inlets and power sources, the following actions occur:

   - The green AC OK power supply LEDs light.
   - While the Oracle ILOM SP initializes, the green SP OK LED flashes rapidly.
   - Once the Oracle ILOM SP has fully initialized, the SP OK LED is steady on and the green Power/OK LED flashes slowly, indicating that the host is in Standby power mode.

   In Standby power mode, the server is not initialized or powered on.

2. **Press Enter on the terminal device to create a connection between the serial console and the Oracle ILOM SP.**

   The Oracle ILOM Login prompt appears.

3. **Log in to Oracle ILOM using the command-line interface (CLI); use the `root` user account and the password `changeme`:**

   ```
   host-name login: root
   Password: changeme
   ```

   The Oracle ILOM CLI prompt (->) appears.

Caution - Do not apply full power to the server until you are ready to perform a fresh installation of an operating system. At this point, power is supplied only to the SP and the power supply fans.

4. **Power on the server to Full power mode:**

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

The host boots and the server enters Full power mode.

When the server boots and goes to Full power mode, the following actions occur:

- The green Power/OK flashes rapidly to indicate that the host is booting.
- The green Power/OK LED lights steady on when the host is booted and the server is in Full power mode.

Connecting to Oracle ILOM

The Oracle Server X6-2L is shipped with Oracle Integrated Lights Out Manager (ILOM) version 3.2.6. Oracle ILOM is system management firmware embedded on the service processor (SP).

For a complete list of Oracle ILOM features, refer to the Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at `https://www.oracle.com/goto/ilom/docs`.

This section describes how to access and get started using Oracle ILOM for your server.

Description	Links
Learn about Oracle ILOM hardware and interfaces.	"Oracle ILOM Service Processor and User Interfaces" on page 85
Log in to Oracle ILOM locally using a terminal connected to the serial port or over the network using an Ethernet connection	"Logging In to or Out of Oracle ILOM" on page 86
View or modify the service processor network settings.	"Modifying the Service Processor Network Settings Using Oracle ILOM" on page 90
Test the network configuration	"Test the IPv4 or IPv6 Network Configuration" on page 93
Troubleshoot the service processor connection.	"Troubleshooting Oracle ILOM" on page 99

Related Information

- "Installation Procedure Overview" on page 11
- "Connecting Cables and Power Cords" on page 80

Oracle ILOM Service Processor and User Interfaces

The following table lists the components and functions of Oracle ILOM.

Component	Function
Hardware	■ Embedded service processor (SP) chipset that monitors the status and configuration of components such as fans, storage drives, and power supplies ■ Two rear panel external connections: NET MGT port Ethernet connection and SER MGT port RJ-45 serial management connection
Interfaces	■ Web browser interface ■ SSH command-line interface (CLI) ■ IPMI v2.0 CLI ■ SNMP v3 interface

Related Information

- Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at: https://www.oracle.com/goto/ilom/docs

Logging In to or Out of Oracle ILOM

You can log in to the Oracle ILOM command-line interface (CLI) locally using the RJ-45 serial management port (SER MGT). You can also log in to the Oracle ILOM web interface or command-line interface remotely using one of the network ports on the server.

To log in to Oracle ILOM, follow these procedures:

- “Logging In to or Out of Oracle ILOM” on page 86
- “Log In to Oracle ILOM Using a Remote Ethernet Connection” on page 87

To log out of Oracle ILOM, follow this procedure:

- “Logging Out of Oracle ILOM” on page 90

Log In to Oracle ILOM Using a Local Serial Connection

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 and enforce user authentication and authorization in Oracle ILOM, 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 since been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.

Note - To prevent unauthorized access to Oracle ILOM, create user accounts for each user. For details, see the Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at: `https://www.oracle.com/goto/ilom/docs`.

1. **Ensure that the server is cabled for a local serial connection to Oracle ILOM.**

   See "Connecting Cables and Power Cords" on page 80.

2. **Press Enter on the terminal device that is connected to the server.**

3. **At the Oracle ILOM login prompt, type your user name, and then press Enter.**

4. **At the password prompt, type the password associated with your user name, and then press Enter.**

   Oracle ILOM displays a default command prompt (->), indicating that you have successfully logged in.

Related Information

- "Connecting Cables and Power Cords" on page 80
- "Troubleshooting Oracle ILOM" on page 99

Log In to Oracle ILOM Using a Remote Ethernet Connection

You can log in to the Oracle ILOM web interface or command-line interface (CLI) remotely using one of the network ports on the server.

You need to know the IP address or host name of the service processor (SP) to log in to Oracle ILOM remotely. If you do not know the IP address of the SP, see “Troubleshooting Oracle ILOM” on page 99.

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 since been changed, contact your system administrator for an Oracle ILOM user account with Administrator privileges.

To improve response times, disable the web browser proxy server (if one is enabled).

1. **Ensure that the server is cabled for a remote network management connection to Oracle ILOM.**

   For instructions for establishing a physical management connection to Oracle ILOM see “Connecting Cables and Power Cords” on page 80.

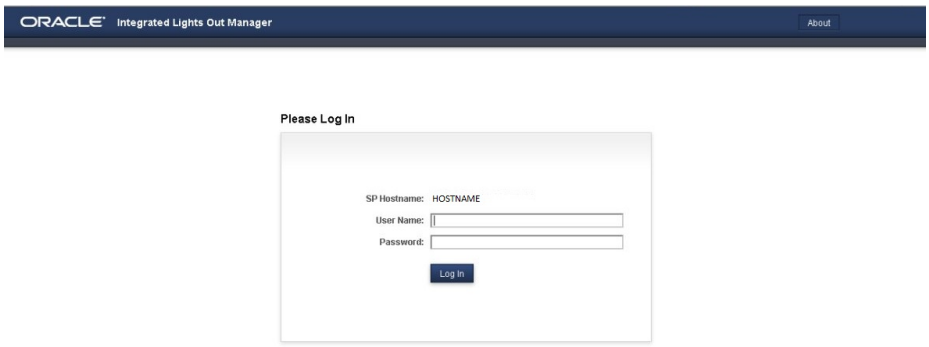
2. **Establish a connection to Oracle ILOM using the web interface or the CLI.**

   - **From the web interface:**

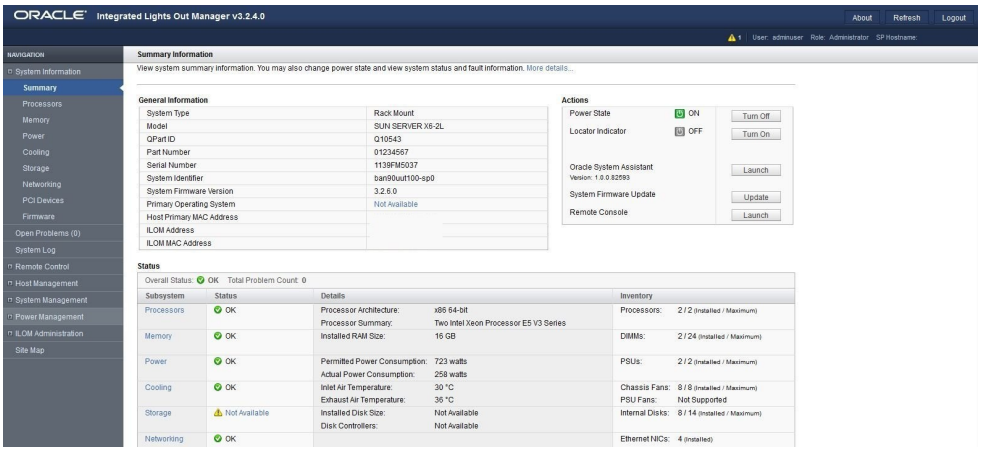
     a. **Type the IP address of the server in the address field of your web browser and press Enter.**

        The Oracle ILOM login screen appears.

b. At the Oracle ILOM login screen, type your user name and password, and then click Log In.



The Summary screen appears, indicating that you have successfully logged in to Oracle ILOM. For example:



- **From the CLI:**

  a. Initiate a secure shell session. Type:

```
ssh username@host
```

Where *username* is the user name of an Oracle ILOM account with Administrator privileges and *host* is either the IP address or hostname (when using DNS) of the server SP.

The Oracle ILOM password prompt appears.

```
Password:
```

b. At the Oracle ILOM password prompt, type your password and press Enter. For example:

```
Password: changeme
```

Oracle ILOM displays the default command prompt (->), indicating that you have successfully logged in to Oracle ILOM.

Related Information

- "Logging In to or Out of Oracle ILOM" on page 86
- "Troubleshooting Oracle ILOM" on page 99

▼ Logging Out of Oracle ILOM

See the following procedure to log out of the Oracle ILOM web interface or CLI.

- **To end an Oracle ILOM session:**
  - **From the Oracle ILOM web interface, click the Log Out button at the top-right corner of the screen.**
  - **From the Oracle ILOM CLI, type `exit` at the CLI prompt.**

Modifying the Service Processor Network Settings Using Oracle ILOM

This section provides information about the default network settings on the service processor (SP), as well as procedures for viewing and modifying those settings in Oracle ILOM:

The Oracle Server X6-2L supports dual-stack IPv4 and IPv6 settings, which enable Oracle ILOM to fully operate in an IPv4 or IPv6 network environment.

- For IPv4 configurations, DHCP is enabled by default, allowing a DHCP server on the network to automatically assign network settings to the service processor.
- For IPv6 configurations, IPv6 stateless auto-configuration is enabled by default, allowing an IPv6 router on the network to assign the network settings.

In a typical configuration, you will accept the default settings. However, if you want to modify the service processor network settings, follow these procedures.

▼ Modify Oracle ILOM SP Network Settings

When you use Oracle ILOM to deploy or manage the server, you can optionally modify the default network settings provided for the service processor (SP).

This procedure provides web and command-line interface (CLI) instructions for viewing and modifying the network settings that are assigned to the SP.

1. **Log in to Oracle ILOM as an Administrator.**
   For instructions to log in to the Oracle ILOM from the web interface or CLI, see "Logging In to or Out of Oracle ILOM" on page 86.

2. **To modify the SP network settings, use either the Oracle ILOM web interface or CLI:**

   - **From the web interface:**

     a. **Click ILOM Administration → Connectivity → Network.**

     b. **Modify the settings on the Network Settings page, as required.**
        For details about how to configure the properties on the Network Setting page, click the *More Details* link.

     c. **Click Save to save your network property changes in Oracle ILOM.**

Note - All user sessions on the SP are terminated upon saving the IP network property changes. To log back in to Oracle ILOM, use the newly assigned service processor IP address.

- **From the CLI:**

  a. **To view the assigned IPv4 and IPv6 network settings on the SP, perform the following:**

     For IPv4, type: `show /SP/network`

     For IPv6, type: `show /SP/network/ipv6`

  b. **To view the descriptions about each IPv4 and IPv6 network property, perform the following:**

     For IPv4, type: `help /SP/network`

     For IPv6, type: `help /SP/network/ipv6`

  c. **To modify the IPv4 and IPv6 network properties on the SP, issue the `set` command.**

     IPv4 Example:

     `set /SP/network state=`*enabled*`|`*disabled* `pendingipdiscovery=`*static*`|`*dhcp* `pendingipaddress=`*value* `pendingipgateway=`*value* `pendingipnetmask=`*value*

     IPv6 Example:

     `set /SP/network/ipv6 state=`*enabled*`|`*disabled* `pending_static_ipaddress=`*value/subnet_mask_value* `pending_static_ipgatewayaddress=` value

---

Note - A dual-stack network connection is enabled when both the IPv4 and IPv6 State properties are set to enabled. By default, Oracle ILOM is factory-configured with network settings enabled for a dual stack (IPv4 and IPv6) network connection. If the IPv4 State property is enabled (`/SP/network state=enabled`) and the IPv6 State property is disabled (`/SP/network/ipv6 state=disabled`), Oracle ILOM will support an IPv4-only network connection.

---

  d. **To commit the IPv4 and IPv6 pending network changes in Oracle ILOM, type:**

     `set /SP/network commitpending=true`

Note - All user sessions on the SP are terminated upon committing the IP network property changes. To log back in to Oracle ILOM, use the newly assigned service processor IP address.

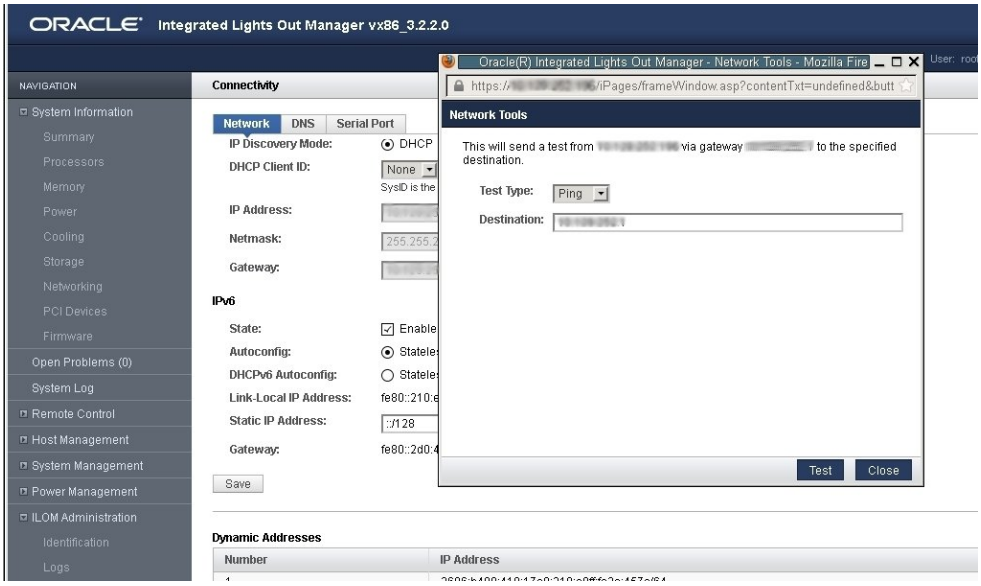
▼ Test the IPv4 or IPv6 Network Configuration

Use either the Oracle ILOM web interface or CLI to test the IPv4 or IPv6 network configuration:

1. **From the Oracle ILOM web interface:**

   a. **From the ILOM Administration → Connectivity screen, click the Tools button at the bottom of the screen.**

   The Network Configuration Test screen appears.



   b. **From the Test Type list box, select Ping (for an IPv4 configuration) or Ping6 (for an IPv6 network configuration).**

   c. **Type the IPv4 or IPv6 test destination address in the Destination field and click Test.**

   If the test was successful, the message `Ping of` *ip_address* `succeeded` message appears below the Destination field in the Network Configuration Test screen.

2. **From the Oracle ILOM CLI:**

a. At the CLI prompt, type the `show` command to view the network `test` targets and properties.

For example, the following output shows the test target properties:

```
-> show
/SP/network/test
Targets:

Properties:
 ping = (Cannot show property)
 ping6 = (Cannot show property)

Commands:
 cd
 set
 show
```

b. Use the `set ping` or `set ping6` command to send a network test from the device to a network destination specified in the following table:

Property	Set Property Value	Description
`ping`	`set ping=`<*IPv4_address*>	Type the `set ping=` command at the command prompt followed by the IPv4 test destination address. For example:`-> set ping=192.168.10.106` `Ping of 192.168.10.106 succeeded`
`ping6`	`set ping6=` <*IPv6_address*>	Type the `set ping6=` command followed by the IPv6 test destination address. For example:`-> set ping6=2001::db8:5dff:febe:5000` `Ping of 2001::db8:5dff:febe:5000 succeeded`

Redirecting the Host Console Using Oracle ILOM

Use Oracle ILOM Remote System Console Plus to remotely redirect a host server desktop or a host server storage device.

Connecting to the host console through Oracle ILOM enables you to perform actions as if you were at the host. Connect to the host to perform the following tasks:

- Access the server BIOS Setup Utility remotely.

- Install an operating system on the server.
- Configure an operating system on the server.
- Configure or install other software on the server.

The Oracle ILOM Remote System Console Plus supports a full-control console video session for a primary user and view-only console video sessions for all other signed-in users. By default, a maximum of four video redirection sessions can be launched from the Oracle ILOM web interface. To prevent other signed-in video session users on the SP from viewing confidential data, you can set the Maximum Client Session Count property to 1 on the KVMS page in the Oracle ILOM web interface.

For instructions, see the following sections:

- “Set the Mouse Mode” on page 95
- “Redirect Host Server Desktop or Storage Devices Using Oracle ILOM” on page 96

▼ Set the Mouse Mode

In Oracle ILOM you can set the Mouse Mode property to optimize mouse movement in the Oracle ILOM Remote System Console Plus. The mouse mode can be set to either Absolute or Relative and should be set according to the requirements of the operating system that you are using to connect to Oracle ILOM. Review the following guidelines to determine the appropriate mouse mode for your system:

- For Windows and Oracle Solaris operating systems, set the mouse mode to Absolute.
- For newer versions of Linux operating systems, such as Oracle Linux 7, Oracle Linux 6.x, Red Hat Enterprise Linux (RHEL) 7, or RHEL 6.x, set the mouse mode to Absolute.
- For older versions of Linux operating systems, such as Oracle Linux 5.x or RHEL 5.x, set the mouse mode to Relative and switch to Absolute if the mouse does not work properly.
- For Oracle VM and VMware ESXi, mouse mode settings do not apply.

For more information about selecting a mouse mode, refer to the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `https://www.oracle.com/goto/ilom/docs`.

To set the mouse mode, perform the following steps:

1. **Log in to the Oracle ILOM web interface.**

   See “Log In to Oracle ILOM Using a Local Serial Connection” on page 87.

2. **Navigate to the Remote Control → KVMS page, and then select a mouse mode from the Mouse Mode drop-down list.**

3. **Click Save.**

▼ Redirect Host Server Desktop or Storage Devices Using Oracle ILOM

Before you begin, ensure that the following requirements are met:

- The following user credentials are required:
  - Console (c) user role privileges are required to use the Oracle ILOM Remote System Console Plus.
  - A user account on the host server is required to log in to the redirected host desktop.
  - To exclusively control the storage media from the Oracle ILOM System Remote Console Plus application, you must have root privileges on a Linux client or root administrator privileges on a Windows client.
- The mouse mode is set correctly (see "Set the Mouse Mode" on page 95).
- Java Runtime Environment (JRE) 1.6 or later is installed. For IPv4 networks, a 32-bit or 64-bit JDK is required. For IPv6 networks, a 32-bit or 64-bit Java Development Kit (JDK) 170636 or higher is required.
- The remote management client is connected to a network that has access to one of the Ethernet management ports on the Oracle Server X6-2L.

To launch the Oracle ILOM Remote System Console Plus application, follow these steps:

1. **Log in to the Oracle ILOM web interface.**

   For instructions, see "Logging In to or Out of Oracle ILOM" on page 86.

2. **To launch Oracle ILOM Remote System Console Plus application, click Remote Control → Redirection, and then click the Launch Remote Console button.**

   After clicking the Launch Redirection Console button, the following events can occur:

   - If this is the first time launching the Oracle ILOM Remote System Console Plus application, a prompt to launch the Java web start program appears. Follow the instructions provided in the prompt to continue launching the Oracle ILOM Remote System Console Plus application.
   - If your system does not meet the Java security requirements for launching Oracle ILOM Remote System Console Plus, a Java error message appears. Follow the instructions provided in the Java error message to launch the Oracle ILOM Remote System Console Plus application.
   - The Oracle ILOM Remote System Console Plus window for video redirection appears.

- The redirected video console displays the remote host server in its present state. For example, if the host server is powering on, a set of boot messages appears in the video console.
- When a prompt for logging in to the host server appears, enter your user credentials for the remote host server.

  For additional details about launching the Oracle ILOM Remote System Console Plus application, click the *More Details* link on the Redirection web page.

Note - Full-control user mode is automatically enabled for the primary user. View-only user mode is automatically enabled for all subsequent signed-in session users.

---

3. **To take full-control or relinquish full-control of the current redirection session, click either Take Full-Control or Relinquish Full-Control in the KVMS menu.**

   A view-only user can choose to take full-control of the redirection session and force the existing primary user to view-only mode.

   The primary user can relinquish full-control privileges for the current redirection session and switch to view-only mode.

4. **To redirect storage media, perform the following actions:**

   a. **Verify you have full-control privileges for the redirection session. If not, click Take Full-Control in the KVMS menu.**

      If you are the primary user with full-control privileges, the option for Take Full-Control is disabled in the KVMS menu.

   b. **Click Storage in the KVMS menu.**

      The Storage Device dialog box appears.

   c. **To add a storage image (such as a DVD image) to the Storage Device dialog box, click Add.**

      Browse to the image file that you want to add, and then click Select.

   d. **To redirect storage media, select a storage media entry in the Storage Device dialog box, and then click Connect.**

      The Oracle ILOM Remote System Console Plus application must have exclusive control of the storage device in order to establish a redirection connection to the storage device.

      After establishing a connection to the device, the label on the Connect button in the Storage Device dialog box changes to Disconnect.

e. **To stop a storage media redirection session, select the storage media entry in the Storage Device dialog box and click Disconnect.**

f. **To remove storage media entries listed in the Storage Device dialog box, click the storage media entry and click Remove.**

5. **To exit the Oracle ILOM Remote System Console Plus, click Exit in the KVMS menu.**

   For more information about using the Oracle ILOM Remote System Console Plus, refer to the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `https://www.oracle.com/goto/ilom/docs`.

Access Serial Remote Host Console (CLI)

Before you begin, you can configure properties in Oracle ILOM to make the serial host console easier to view and to enable logging. For more information, refer to the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `https://www.oracle.com/goto/ilom/docs`.

This procedure describes how to access the host console remotely. To connect to the host console locally, see "Log In to Oracle ILOM Using a Local Serial Connection" on page 87.

1. **Log in to the Oracle ILOM command-line interface (CLI) using an account with Administrator privileges.**

   For instructions, see "Log In to Oracle ILOM Using a Local Serial Connection" on page 87.

2. **At the Oracle ILOM prompt (->), type `start /HOST/console`.**

   The serial console output appears on the screen.

   Note - If the serial console is in use, stop and restart it using the `stop /HOST/console` command followed by the `start /HOST/console` command.

3. **To return to the Oracle ILOM console, press Esc followed by the open parenthesis (character (press Shift-9).**

Troubleshooting Oracle ILOM

This section addresses two issues that might occur regarding the Oracle ILOM service processor (SP):

- You need to reset the Oracle ILOM SP to complete an upgrade or to clear an error.

  Resetting the power on the server SP automatically disconnects any current Oracle ILOM sessions and renders the SP unmanageable until the reset process is complete.
- As the system administrator, you have forgotten the `root` account password and you need to recover it.

For instructions to address each issue, see the following sections:

- "Reset the Service Processor Using Oracle ILOM" on page 99
- "Reset the Service Processor From the Server Back Panel" on page 100
- "Recover the Root Account Password" on page 100

▼ Reset the Service Processor Using Oracle ILOM

- **If the Oracle ILOM service processor (SP) becomes unresponsive, use one of the following methods to reset it:**

  - **From the Oracle ILOM web interface, click Administration → Maintenance → Reset SP.**

  - **From the Oracle ILOM command-line interface (CLI), type the command:**
    `reset /SP`

Note - Resetting the Oracle ILOM SP disconnects your current Oracle ILOM session. You must log in again to resume working in Oracle ILOM.

Reset the Service Processor From the Server Back Panel

If the Oracle ILOM SP is unresponsive and you cannot reset it using the Oracle ILOM web interface or the Oracle ILOM CLI command, use the following procedure to reset the SP from the server back panel.

- **Using a non-conducting stylus, press the Reset SP pinhole button located on the server back panel.**

  The stylus should be non-conductive with a diameter no more than 1.5 mm. To depress the pinhole button, the stylus should reach 6.5 mm into the chassis. Care should be taken to not over penetrate into the chassis, or probe the sensitive electrical components near the button.

Caution - Using a conductive tool, such as a metal paper clip or graphite pencil, can cause a short that can cause an immediate host power off, and/or circuit damage.

The Reset SP pinhole is located on the server back panel beneath the USB ports. For more information, refer to "Rear Panel Pinhole Switches" in *Oracle Server X6-2L Service Manual*.

The SP reboots. You must log in again to continue working in Oracle ILOM.

Recover the Root Account Password

System administrators can recover the preconfigured Oracle ILOM local `root` account or the password for the local `root` account by using the preconfigured Oracle ILOM default password.

To recover the `root` account password you need a local serial management port (SER MGT) connection to Oracle ILOM. In addition, if the Physical Presence State is enabled (the default) in Oracle ILOM, you must prove that you are physically present at the server.

To recover the `root` account password, perform these steps:

1. **Establish a local serial management connection to Oracle ILOM and log in to Oracle ILOM using the `default` user account.**

   For example: `hostname login:` **`default`**

   ```
   Press and release the physical presence button

   Press return when this is completed...
   ```

2. **Prove physical presence at the server.**

   To prove physical presence at the server, press the Locator button on the front of the server.

3. **Return to your serial console and press Enter.**

   The Oracle ILOM password prompt appears.

4. **Type the password for the `default` user account: `defaultpassword`.**

5. **Reset the account password or re-create the `root` account.**

   For more information, refer to "Configuring Local User Accounts" in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `https://www.oracle.com/goto/ilom/docs`.

Controlling System Power

This section describes how to power off and on, and reset, the server.

Description	Links
Power off the server if an error occurs, then back on when a problem is fixed.	“Powering the Host On and Off” on page 103
Reset the server.	“Resetting the Server” on page 106

Related Information

- “Installation Procedure Overview” on page 11
- Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at: `https://www.oracle.com/goto/ilom/docs`

Powering the Host On and Off

Your server has three power modes (states): power off, standby power, and full power.

Power State	Description	Indicators	Action
Power off	The server is completely powered off when the AC power cords are disconnected.	All indicators are off. The server is disconnected from all power sources.	Disconnect power cords to completely remove power. **Caution -** Equipment damage. Do not disconnect power cords when system is in full power mode.
Standby power	When the server is in standby power mode, the service processor is powered on but the host is powered off.	The green system Power/OK indicator flashes slowly. The green SP OK indicator is steady on.	If the server is completely powered off, plug in the power cords to apply standby power. If the server is in full power mode, use Oracle ILOM or the Power button to remove host power.

Power State	Description	Indicators	Action
			You can power the host off gracefully, or immediately. **Caution -** Data loss. To prevent data loss, prepare the operating system for shutdown before performing an immediate power off.
Full power	When you power on the host, the server enters full power mode.	In full power mode, the green system Power/OK indicator is steady on.	Use Oracle ILOM or the Power button to apply host power.

For instructions on powering the host off and on, see the following procedures:

- “Power Off the Host Using the Power Button” on page 104
- “Power On the Host Using the Power Button” on page 105
- “Power the Host On and Off Using Oracle ILOM” on page 105

▼ Power Off the Host Using the Power Button

1. **Locate the Power button on the server front panel.**
2. **Press the Power button.**

   - **To perform a graceful shutdown, press and release the Power button.**

     ACPI-enabled operating systems perform an orderly shutdown. Non-ACPI-enabled operating systems might ignore this event and fail to shut down the host.

     The system Power/OK indicator flashes. The service processor SP OK indicator is steady on.

   - **To perform an immediate shutdown, press and hold the Power button for at least 5 seconds.**

     The system Power/OK indicator flashes. The service processor SP OK indicator is steady on.

Caution - Data loss. An immediate shutdown abruptly closes all applications and files without saving changes.

   - **To completely power off the server, you must disconnect the power cords from the back panel of the server.**

▼ Power On the Host Using the Power Button

1. **Verify that the server is in standby power mode.**

   See "Preparing for Installation and Power On" on page 80.

   In Standby power mode, the host is powered off but the SP is powered on. The power supplies are connected to a power source, the AC OK power supply indicator lights, the SP OK indicator is steady on, and the Power/OK status indicator flashes slowly.

2. **Locate the Power button on the front panel.**

3. **Press the Power button.**

   The host boots and the server enters full power mode. The system Power/OK indicator goes steady on when the host is fully booted.

▼ Power the Host On and Off Using Oracle ILOM

This procedure provides Oracle ILOM web and command-line interface (CLI) instructions to remotely power on or power off the host.

Caution - Data loss. An immediate shutdown abruptly closes all applications and files without saving changes.

- **Control power using the Oracle ILOM web interface or the CLI.**

  You must be logged on with administrator privileges. For details, see "Connecting to Oracle ILOM" on page 85.

  - **From the web interface:**

Note - These commands affect power to the host but not to the SP. To completely power off the server, you must disconnect the power cords from the back panel of the server.

a. **In the left pane, click Host Management → Power Control.**

b. **From the Select Action list box, select one of the following:**

   - **Reset** — Assert a power-cycle to a managed server, while keeping power applied to system components such as disk drives.

- **Graceful Reset** — Gracefully shut down the host operating system prior to power-cycling the managed server.
- **Immediate Power Off** — Directly shut down the power to the managed device.
- **Graceful Shutdown and Power Off** — Gracefully shut down the host operating system prior to shutting down the power to the managed device.
- **Power On** — Apply full power to the managed device.
- **Power Cycle** — Turn off system power to all system components, and then apply full power to all system components.

c. **Click Save, and then click OK.**

- **From the CLI, enter one of the following commands:**
  - `reset /SYSTEM`
  - `stop /SYSTEM`
  - `stop -f /SYSTEM`
  - `start /SYSTEM`

For more information, refer to Controlling Host Power, in the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at `https://www.oracle.com/goto/ilom/docs`.

Resetting the Server

It is not necessary to power the server off and on to reset the server. A reset maintains host power but causes the processors to reinitialize. In the process, some register information is retained. This is important in case of a system host panic, as error information might be available upon system recovery. Use the procedures in one of the following sections to reset the server.

Caution - Possible Data Loss. Resetting the server will cause any unsaved data on the server to be lost.

- "Reset the Server Using Oracle ILOM" on page 106

▼ Reset the Server Using Oracle ILOM

1. **Log in to the Oracle ILOM web interface or CLI.**

Use an account with admin (a) role privileges.

2. **To reset the server:**

   - **From the web interface:**

     a. **In the left pane, click Host Management → Power Control, and select Reset from the Select Action list box.**

     b. **Click Save, and then click OK.**

        The server resets.

   - **From the CLI :**

     a. **Type the following command:**

        ```
        → reset /System
        ```

     b. **When prompted, type `y` to confirm:**

        ```
        Are you sure you want to reset /System (y/n)? y

        Performing hard reset /System
        ```

Configuring Storage Drives for Operating System Installation

This section describes how to prepare a server boot disk for operating system installation.

Description	Links
Learn about storage drive configuration options and requirements.	"Storage Drive Configuration" on page 109
Configure server storage drives into RAID volumes using the BIOS RAID configuration utilities.	"Configuring RAID Using the BIOS RAID Configuration Utilities" on page 110

Related Information

- "Installation Procedure Overview" on page 11
- Host Bus Adapter (HBA) Documentation Collection at: `http://www.oracle.com/technetwork/documentation/oracle-storage-networking-190061.html`

Storage Drive Configuration

Your server is equipped with an Oracle Storage 12 Gb/s SAS PCIe RAID HBA, internal (7110116, 7110117). This HBA requires a RAID volume to install and boot an operating system (OS). To learn more about the HBA, see the *Oracle Storage 12 Gb/s SAS PCIE RAID HBA, Internal Installation Guide* at `http://docs.oracle.com/cd/E52363_01/html/E52364/index.html` .

To install an OS, you must ensure that the drive where you will install the OS is visible to the system. This requires that a RAID volume be created on the drive.

If you do not wish to use a RAID array, configure a drive as a RAID 0 volume.

To check the RAID configuration and to configure the drive, see "Configuring RAID Using the BIOS RAID Configuration Utilities" on page 110

Note - Drives shipped from Oracle might have a RAID 0 volume preinstalled, however it might not be bootable. Before installing an OS on it, ensure that a drive has a volume, and if you are using Legacy Boot Mode, ensure that it is bootable.

The following table lists the requirements for each supported RAID level:

RAID Level	Number of Disks Required
0	1
1	2
5	3
6	3
10	4
50	4
60	6

Once you have created a bootable RAID volume, install the OS. For details, refer to the corresponding operating system installation guide in https://www.oracle.com/goto/X6-2l/docs.

Configuring RAID Using the BIOS RAID Configuration Utilities

The BIOS RAID configuration utilities support configuring RAID with the server set to UEFI boot mode and legacy boot mode. A separate utility is provided for each boot mode.

Use one of the following procedures to configure RAID:

- “Configure RAID in UEFI Boot Mode” on page 110
- “Configure RAID in Legacy Boot Mode” on page 118

▼ Configure RAID in UEFI Boot Mode

This procedure configures a RAID volume where you can install an operating system.

Note - Unlike in Legacy Boot Mode, in UEFI Boot Mode, you do not need to make the drive bootable. In UEFI boot mode, the operating system installation procedure makes the drive bootable.

1. **Configure the server for a one-time boot to BIOS.**

   a. **Access the Oracle ILOM web interface.**

   b. **Navigate to Host Management → Host Control.**

   c. **Select BIOS from the drop-down list, and then select Save.**

      The server is configured to boot to BIOS on the next boot.

2. **From the Summary window, select Remote Console → Launch and answer the dialogs.**

   The remote console screen appears.

3. **Power on or reset the server.**

   For example, to reset the server:

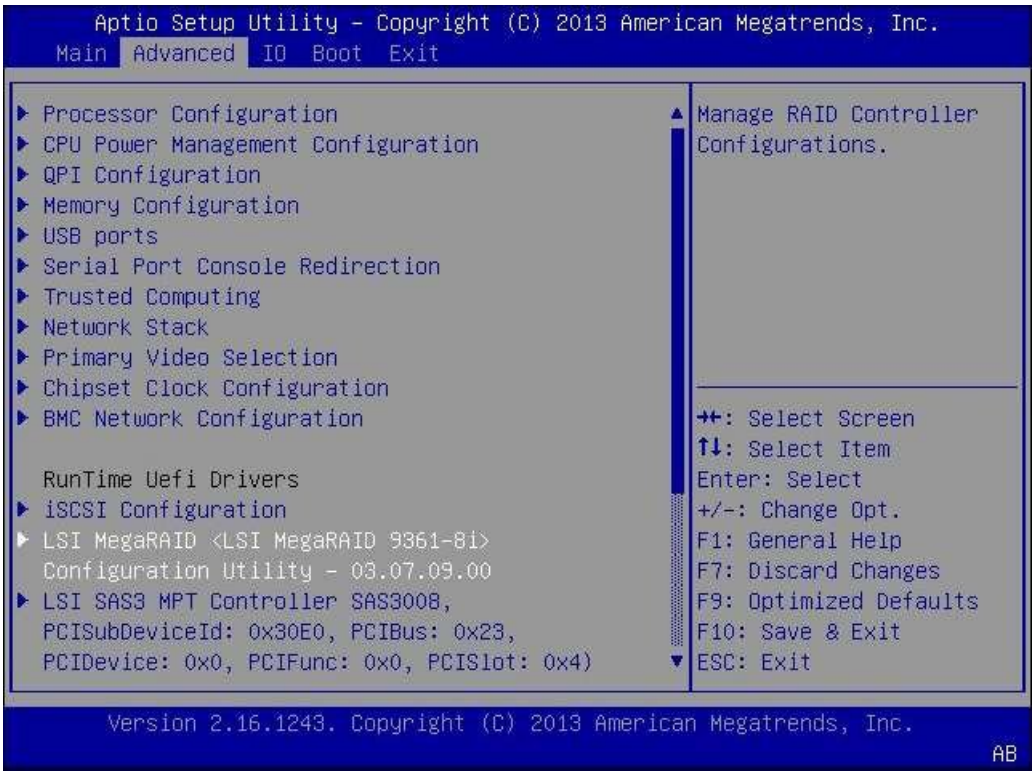
   - **From the local server,** press the Power button (approximately 1 second) on the front panel of the server to power off the server, and then press the Power button again to power on the server.
   - **From the Oracle ILOM web interface,** select Host Management → Power Control, and then select Reset from the Select Action list box. Click Save, and then click OK.
   - **From the Oracle ILOM CLI,** type: `reset /System`

4. **When prompted in the BIOS screen, press the F2 function key (Ctrl+E from a serial connection) to launch the BIOS Setup Utility.**

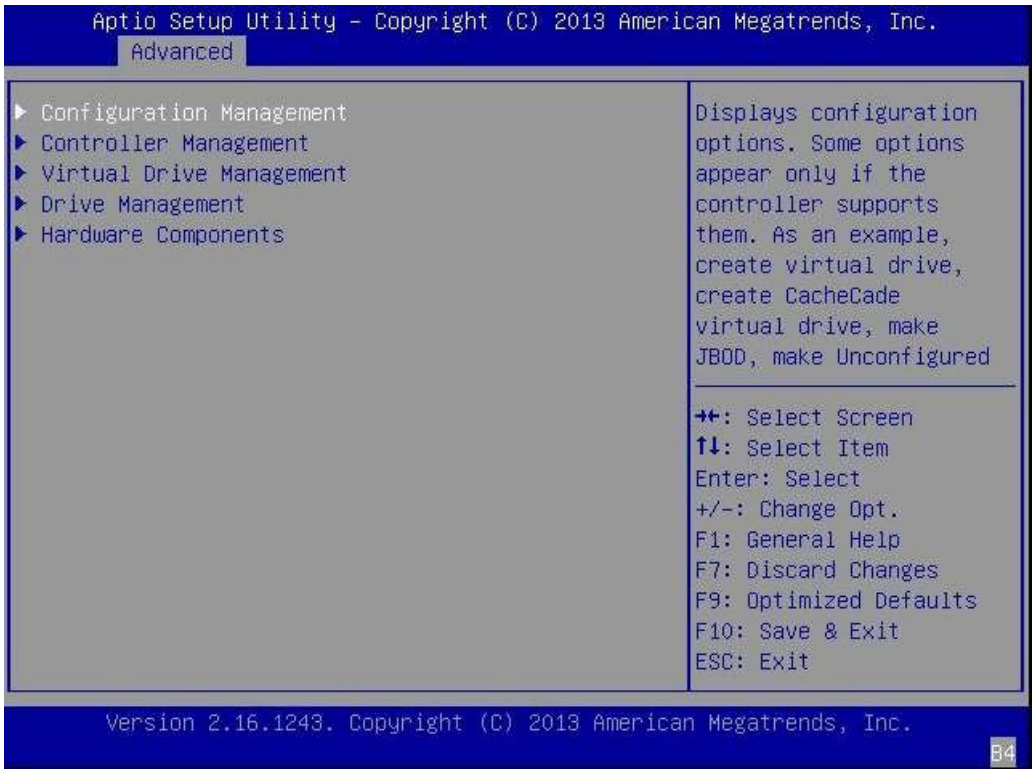
   The BIOS Setup Utility appears.

Note - The steps and screens in this procedure are examples. What you actually see might differ depending on your system's equipment and configuration.

5. **Navigate to the Advanced tab, select LSI MegaRAID Configuration Utility <LSI MegaRAID 9361-8i>, and then press Enter.**



The following screen appears:

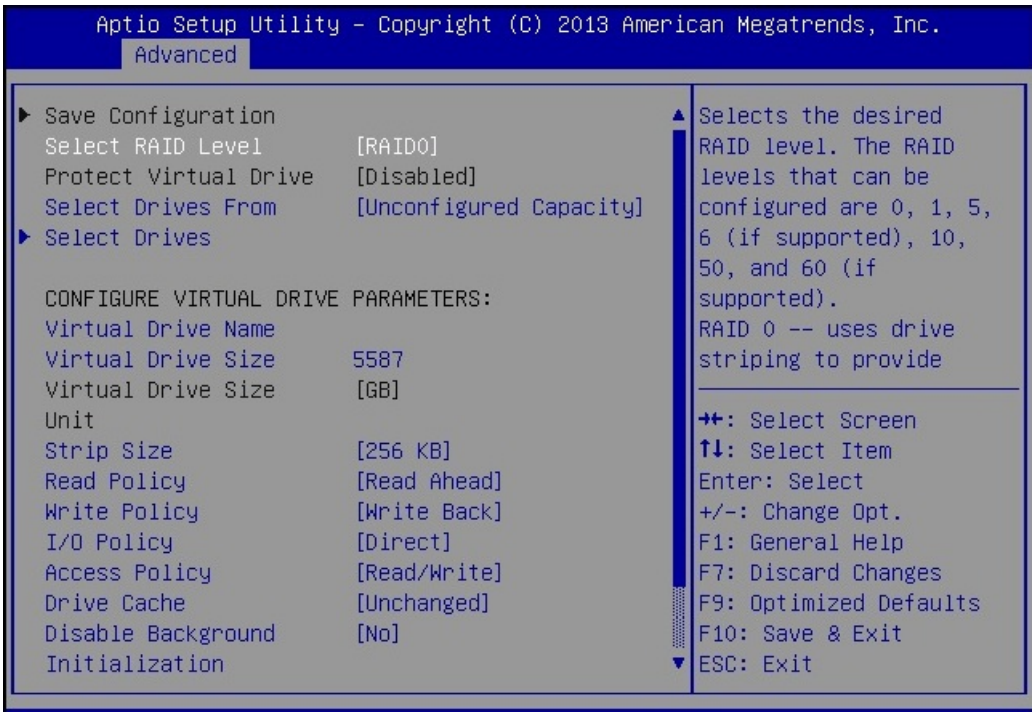


6. **Select Configuration Management, and then press Enter.**

7. **Select Create Virtual Drive – Advanced, and then press Enter.**

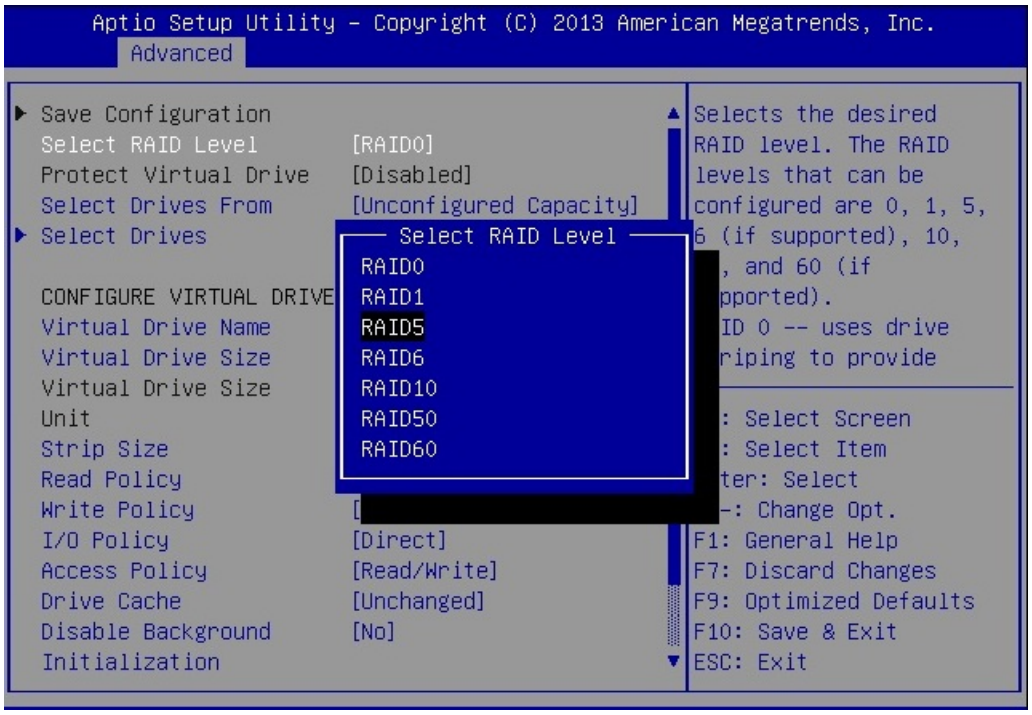
Note - Alternatively, you can select the Create Virtual Drive option, which provides a RAID configuration wizard with no advanced settings.

The Create Virtual Drive – Advanced menu screen appears.



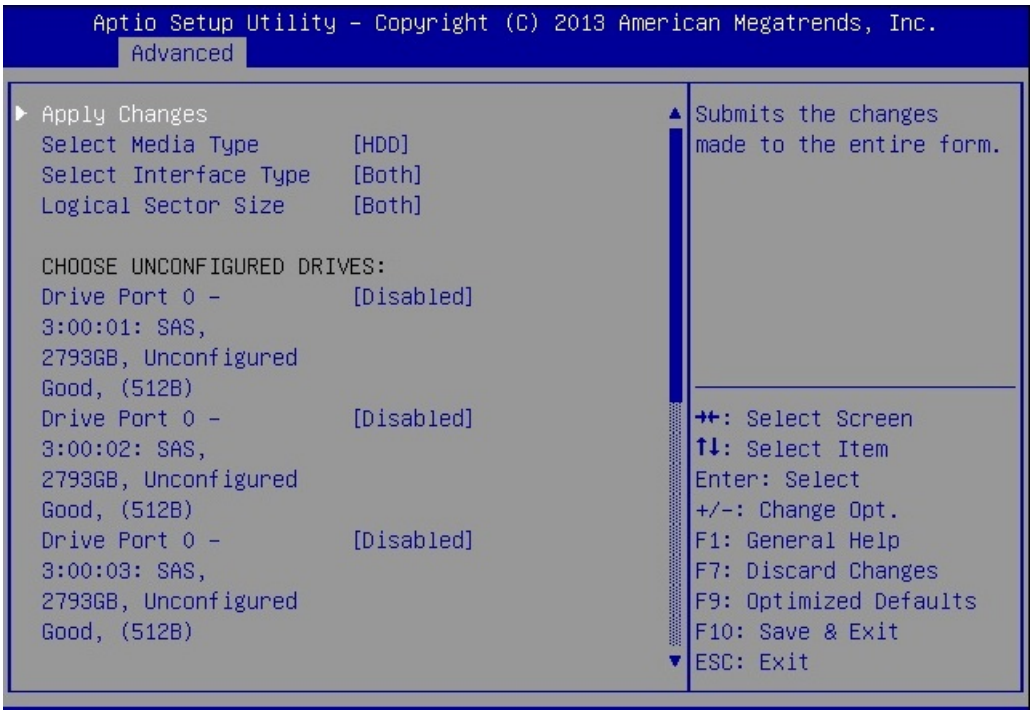
8. **Select the Select RAID Level option, and then press Enter.**

9. **Select the desired RAID level, and then press Enter.**



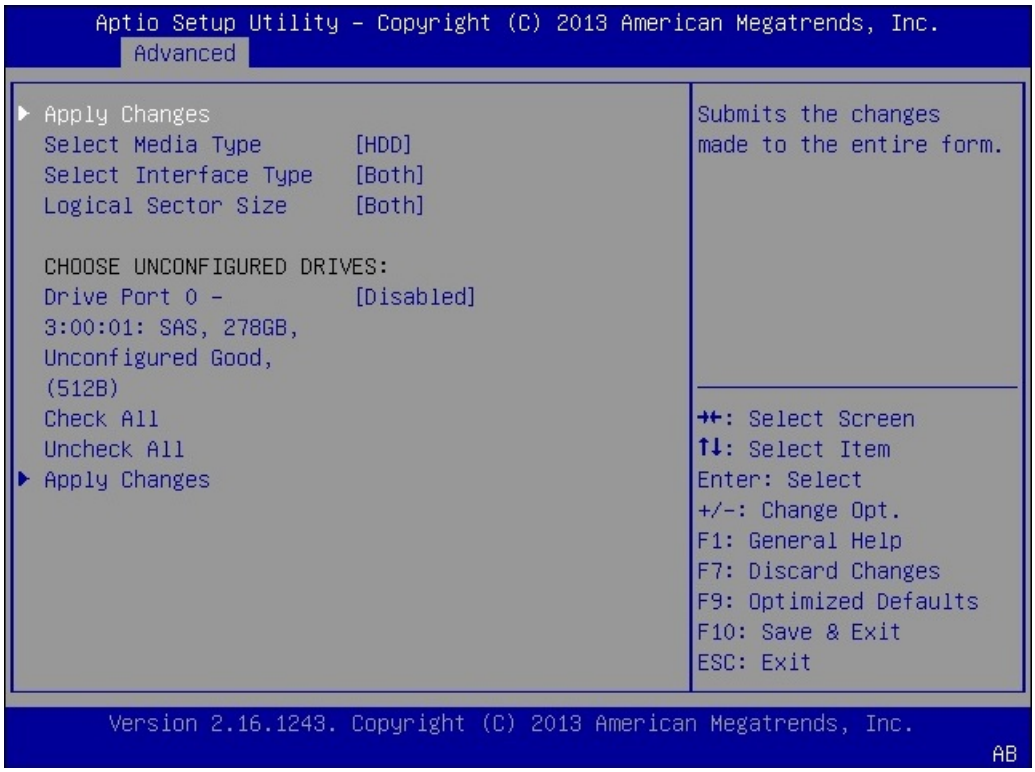
10. **Select the Select Drives option, and then press Enter.**

The Drive Selection screen appears.

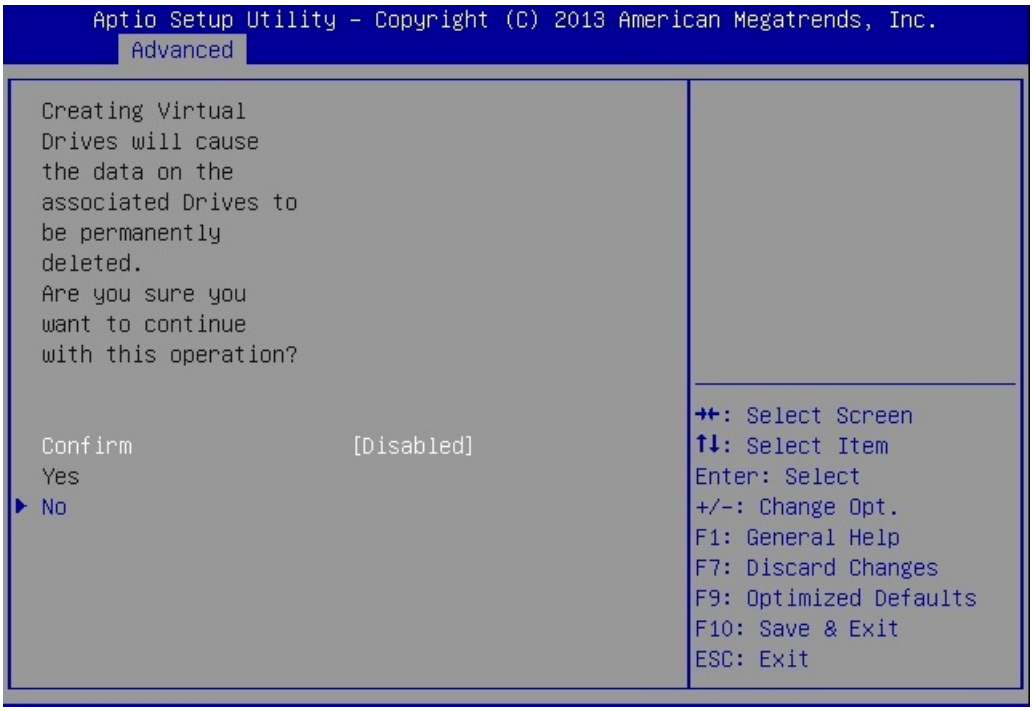


11. In the Drive Selection screen, select the media type, the interface type, and the drives to be enabled in the RAID configuration.

12. Select Apply Changes, and then press Enter.



The RAID Configuration Confirmation screen appears.



13. **To confirm your RAID configuration, select Confirm and then select Yes.**
The Confirmation screen appears.

14. **Select OK to continue.**

15. **Press F10 to save your changes and exit.**
This completes the RAID configuration. You can now install an operating system on the volume that you have created.

▼ Configure RAID in Legacy Boot Mode

Use this task to create a logical drive on an x86 system in Legacy Boot Mode, and to define it as bootable. This prepares the drive so that you can install an operating system onto it.

Note - To learn more about the RAID controller card referenced in this procedure, see https://docs.broadcom.com/docs/pub-005110.

In the following procedure, drives 2 and 3 are used to create a RAID 1 volume.

1. **Power on or reset the host.**

   For example, to reset the host, do one of the following:

   - From the local server, press the Power button (approximately 1 second) on the front panel of the server to power off the host, then press the Power button again to power it back on.
   - From the Oracle ILOM web interface, select Host Management > Power Control, then select Reset from the Select Action list box.
   - From the Oracle ILOM CLI, type: **`reset /System`**

   The boot messages appear.

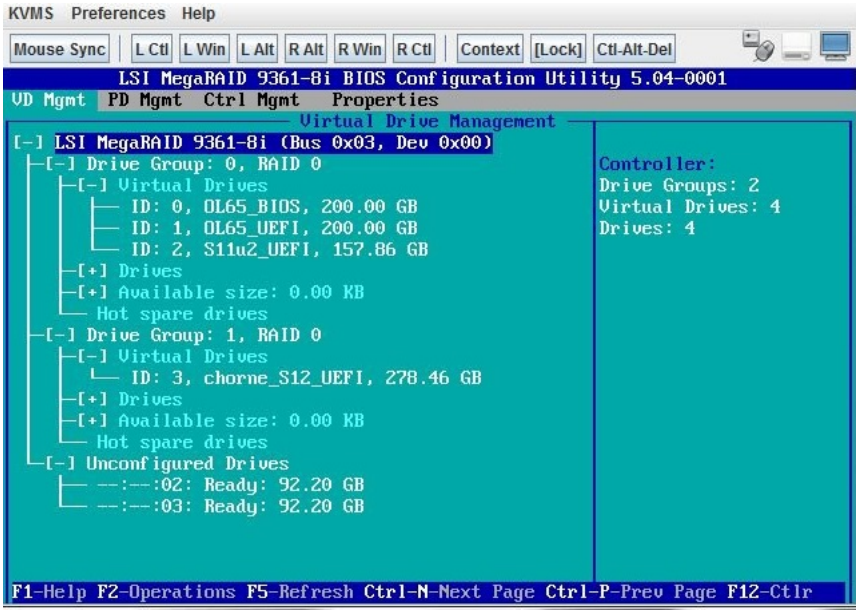
2. **Type `CTRL+R` during the boot process to launch the BIOS Configuration Utility.**

   The LSI MegaRAID BIOS Configuration Utility appears.

3. **Review the listed drives to determine which drives are available for logical drive creation.**

   If this page includes a drive group where you want to install an OS, skip to Step 12. Otherwise continue.

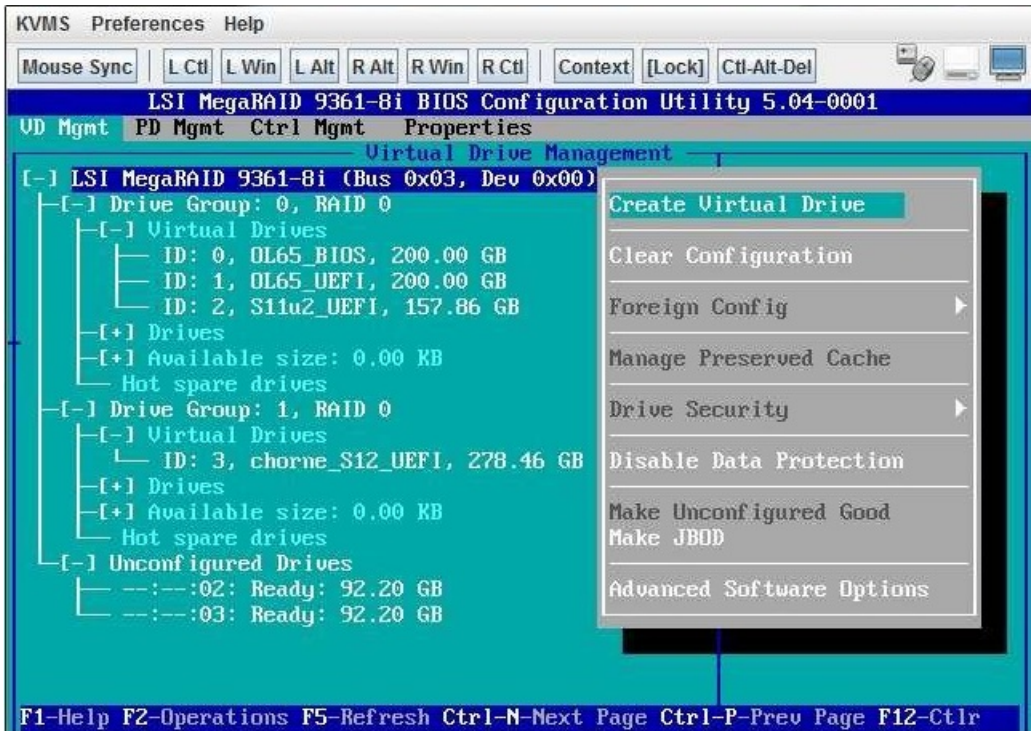
The following figure shows two unconfigured drives, drives 02 and 03. These can be used to create a virtual drive.



4. **Use the arrow keys to navigate to the HBA, and then press F2.**

   The Operations menu appears.

5. **Use the arrow keys to navigate to the Create Virtual Drive menu option, and then press Enter.**

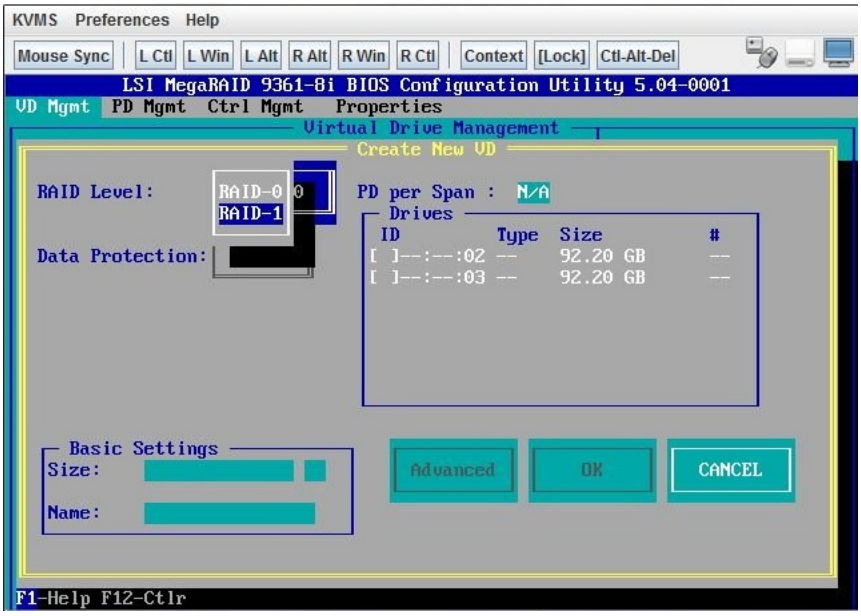


6. **From the page that is displayed:**

   a. **Press Enter on the RAID Level field.**

      A popup appears.

b. **Use the arrow keys to select a RAID level.**



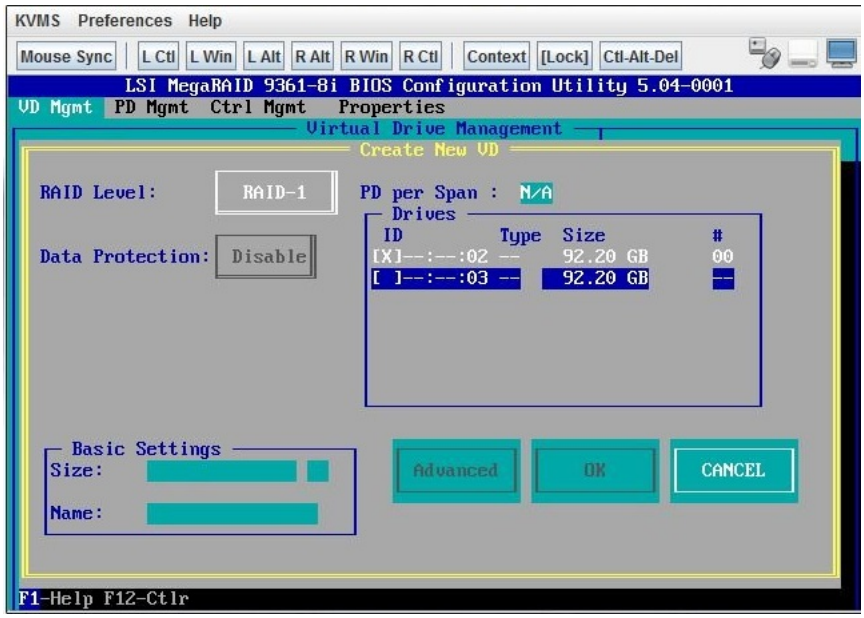
c. **Press Enter to exit the popup window.**

7. **Use the arrow keys to navigate to the Drives box.**

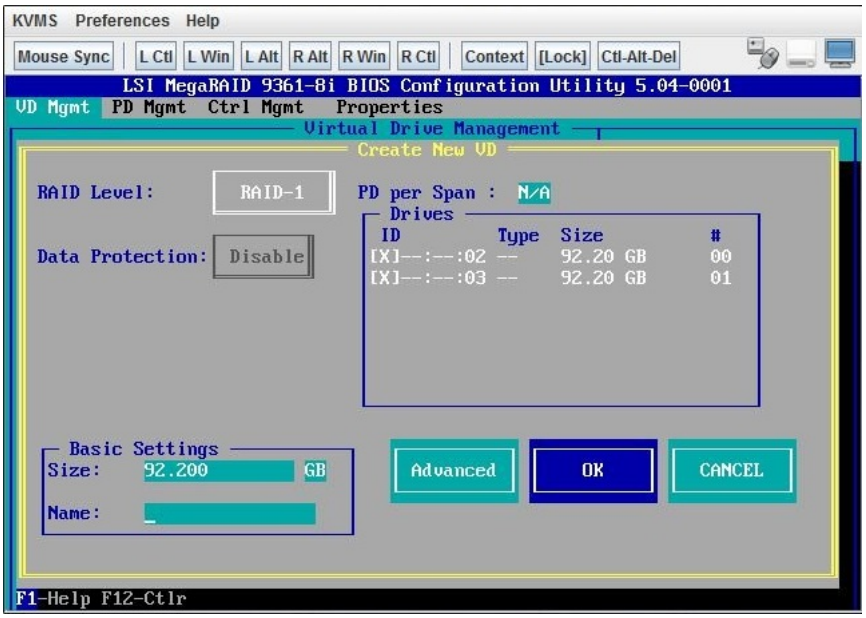
   The Drives box displays a list of drives that are available to be configured in a logical drive.

8. **For each drive that you want in the logical drive, navigate to the drive and press Enter in its ID field to produce an X in the field.**

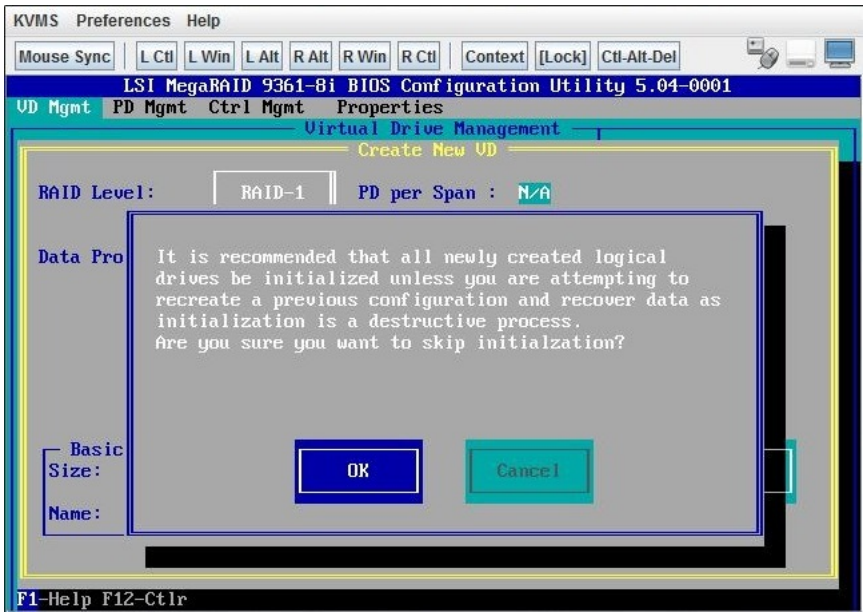
This selects the drive to be included in the logical drive configuration.



9. **After you select all the drives that you want to include in the logical drive, use the arrow keys to navigate to the OK button, and then press Enter.**



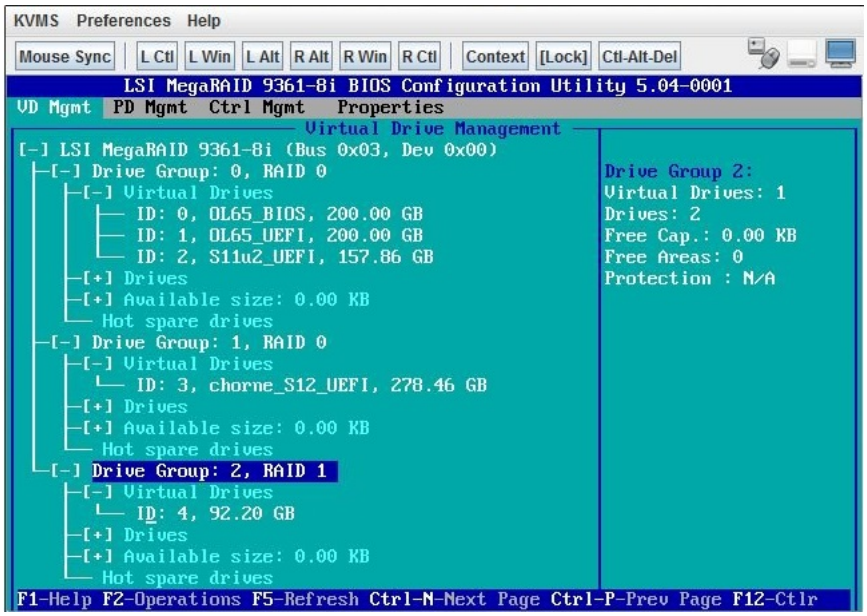
10. **On the next page that is displayed, use the arrow key to move to the OK button, and press Enter.**



The logical drive is now created.

11. **To verify the logical drive creation, review the drive groups on the main page of the BIOS Configuration Utility and note the new drive group that is now displayed on the page.**

In this example, Drive Group 2, RAID 1 is created.



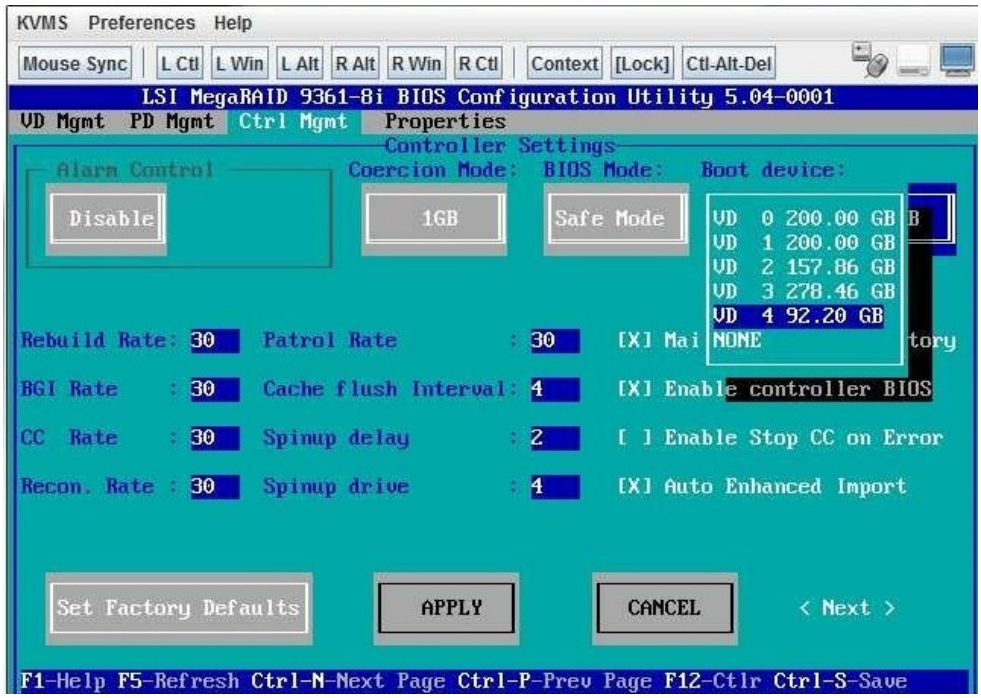
12. Use the following steps to make a drive bootable.

This places a boot sector on the drive so that you can install an operating system on it.

a. Select Ctrl Mgmt to open the Control Management page.

b. From the Ctrl Mgmt page, use the arrow keys to navigate to the Boot device field, and press Enter.

A boot device popup window appears.



c. Use the arrow keys to navigate to the logical drive you wish to make bootable, and then press Enter.

d. Use the arrow keys to navigate to the Apply button, and then press Enter.

e. Type CTRL+S to save the configuration.

The creation of a bootable logical drive is complete.

Getting Firmware and Software Updates

This section explains the options for accessing server firmware and software updates using My Oracle Support (MOS). It also describes how to use the Oracle Software Delivery Cloud to download complete software applications.

Customers are required to install the latest available operating system (OS), patches, and firmware versions for optimal system performance, security, and stability.

Description	Links
Learn about server firmware and software updates.	“Firmware and Software Updates” on page 129
Learn how to get firmware and software updates using My Oracle Support.	“Options for Accessing Firmware and Software Updates” on page 130
Review available firmware and software releases.	“Software Releases” on page 130
Learn about options for accessing firmware and software.	“Getting Updates From My Oracle Support” on page 131
Learn how to install firmware and software updates using other methods.	“Installing Updates Using Other Methods” on page 132
Learn how to get support from Oracle.	“Oracle Support” on page 133

Firmware and Software Updates

Firmware and software for your server are updated periodically. These updates are made available as software releases. The software releases are a set of downloadable files (patches) that include all available firmware, software, hardware drivers, tools, and utilities for the server. All of these files have been tested together and verified to work with your server.

You must update your server firmware and software as soon as possible after a new software release becomes available. Software releases often include bug fixes, and updating your server ensures that your server has the latest firmware and software. These updates will increase your system performance, security, and stability.

The server Product Notes list the curent server software release and firmware version that are available. To determine which firmware version is installed on your server, you can use either the Oracle ILOM web interface or the command-line interface (CLI).

- For the web interface, click System Information → Summary, then view the property value for System Firmware Version in the General Information table.
- For the CLI, at the command prompt, type: `show /System`

The ReadMe document that is included with each patch in a software release contains information about the patch, such as what has changed or not changed from the prior software release, as well as bugs that are fixed with the current release.

The Product Notes that are part of the server documentation identify which server software release is the latest release supported on your server.

Options for Accessing Firmware and Software Updates

Use one of the following options to obtain the latest firmware and software updates for your server:

- **My Oracle Support** – All system software releases are available from the My Oracle Support web site at `https://support.oracle.com`.

  For information about what is available on the My Oracle Support web site, see "Software Releases" on page 130.
- **Other Methods** – You can use Oracle Enterprise Manager Ops Center, Oracle Hardware Management Pack, or Oracle ILOM to update your server software and firmware.

  For information, see "Installing Updates Using Other Methods" on page 132.

Software Releases

Software releases on My Oracle Support are grouped by product family (such as Oracle Server), then the product (the specific server or blade), and finally the software release version. A software release contains all the updated software and firmware for your server or blade as a set of downloadable files (patches), including firmware, drivers, tools, or utilities, all tested together to be compatible with your server.

Each patch is a zip file that contains a ReadMe file and a set of subdirectories containing firmware or software files. The ReadMe file contains details on the components that have changed since the prior software release and the bugs that have been fixed.

My Oracle Support provides the set of software releases for your server as described in the following table. You can obtain these software releases by downloading the files from My Oracle Support.

TABLE 9 Software Release Packages

Package Name	Description	When to Download This Package
X6-2L SW *release* – Firmware Pack	Contains all system firmware, including Oracle ILOM, BIOS, and option card firmware.	You need the latest firmware.
X6-2L SW *release* – OS Pack	Includes a package of all tools, drivers, and utilities for a specific OS. An OS Pack is available for each supported operating system version. Software includes Oracle Hardware Management Pack, LSI MegaRAID software, and any other optional software that Oracle recommends. For the Windows OS, the OS Pack also includes Intel Network Teaming and Install Pack.	You need to update OS-specific tools, drivers, or utilities.
X6-2L SW *release* – All Packs	Includes the Firmware Pack, all OS Packs, and all documents. This pack does not include Oracle VTS image.	You need to update a combination of system firmware and OS-specific software.
X6-2L SW *release* – Diagnostics	Includes Oracle VTS diagnostics image.	You need the Oracle VTS diagnostics image.

Getting Updates From My Oracle Support

You can obtain updated firmware and software from the My Oracle Support web site. For information, see “Download Firmware and Software Updates From My Oracle Support” on page 131.

▼ Download Firmware and Software Updates From My Oracle Support

1. **Go to the My Oracle Support web site: `https://support.oracle.com`.**
2. **Sign in to My Oracle Support.**

3. **At the top of the page, click the Patches & Updates tab.**

   The Patch Search pane appears at the right of the screen.

4. **Within the Search tab area, click Product or Family (Advanced).**

   The Search tab area appears with search fields.

5. **In the Product field, select the product from the drop-down list.**

   Alternatively, type a full or partial product name (for example, Oracle Server X6-2L) until a match appears.

6. **In the Release field, select a software release from the drop-down list.**

   Expand the list to see all available software releases.

7. **Click Search.**

   The Patch Advanced Search Results screen appears, listing the patches for the software release.

   See "Software Releases" on page 130 for a description of the available software releases.

8. **To select a patch for a software release, click the patch number next to the software release version.**

   You can use the Shift key to select more than one patch.

   A pop-up action panel appears. The panel contains several action options, including the ReadMe, Download, and Add to Plan options. For information about the Add to Plan option, click the associated button and select "Why use a plan?".

9. **To review the ReadMe file for this patch, click ReadMe.**

10. **To download the patch for the software release, click Download.**

11. **In the File Download dialog box, click the patch zip file name.**

    The patch for the software release downloads.

Installing Updates Using Other Methods

In addition to using My Oracle Support, you can install firmware and software updates using one of the following methods:

- Oracle Enterprise Manager Ops Center, available software to manage multiple systems in a data center. For information, refer to the product information page at: https://www.

oracle.com/enterprise-manager/technologies/. For documentation, refer to the Oracle Enterprise Manager Cloud Control Documentation Library at: https://docs.oracle.com/en/enterprise-manager/related-products.html

- Oracle Hardware Management Pack. For information, refer to the product information page at: https://www.oracle.com/servers/technologies/hardware-management-pack.html. For documentation and OS support matrix, refer to the Oracle Hardware Management Pack Documentation Library at: https://www.oracle.com/goto/ohmp/docs
- Oracle Integrated Lights Out Management (ILOM). For information, refer to the product information page at: https://www.oracle.com/servers/technologies/integrated-lights-out-manager.html. For documentation, refer to the Oracle Integrated Lights Out Manager (ILOM) 5.0 Documentation Library at: https://www.oracle.com/goto/ilom/docs

Oracle Support

If you need help getting firmware or software updates, you can call Oracle Support. Use the appropriate number from the Oracle Global Customer Support Contacts Directory at:

http://www.oracle.com/us/support/contact-068555.html

Troubleshooting Installation Issues

This section provides troubleshooting resources, a technical support worksheet, and information about how to locate the system serial number.

Description	Links
Review troubleshooting and diagnostic resources.	"Resources for Troubleshooting and Diagnostics" on page 135
Gather information and contact technical support.	"Technical Support Information Worksheet" on page 136
Locate the system serial number.	"Locating the System Serial Number" on page 137

Resources for Troubleshooting and Diagnostics

For server-specific information about troubleshooting hardware faults, refer to "Troubleshooting and Diagnostics" in *Oracle Server X6-2L Service Manual*.

You can access knowledge articles, white papers, and product updates from the My Oracle Support web site at `https://support.oracle.com`.

The following table lists diagnostic and troubleshooting-related procedures and references that can assist you with resolving server issues.

Description	Reference Link
Diagnostic information for the x86 servers, including procedures for performing runtime and firmware-based tests, using Oracle ILOM, and running U-Boot and UEFI diagnostics tests to exercise the system and isolate subtle and intermittent hardware-related problems.	*Oracle x86 Servers Diagnostics, Applications, and Utilities Guide* at `https://www.oracle.com/goto/x86admindiag/docs`
Administrative information for the Oracle X6 series servers, including information about how to use the Oracle ILOM system event log (SEL) to identify a problem's possible source.	*Oracle X6 Series Servers Administration Guide* at `https://www.oracle.com/goto/x86admindiag/docs`
Information about troubleshooting front and rear panel status indicators.	"Troubleshooting and Diagnostics" in *Oracle Server X6-2L Service Manual*

Description	Reference Link
Information about how to manage server hardware faults using the Oracle ILOM Fault Management Shell.	"Managing Server Hardware Faults Through the Oracle ILOM Fault Management Shell" in *Oracle Server X6-2L Service Manual*

Technical Support Information Worksheet

If the troubleshooting information fails to solve your problem, use the following table to collect information that you might need to communicate to Oracle Service personnel.

System Configuration Information Needed	Your Information
Service contract number	
System model	
Operating system	
System serial number (For instructions for locating this number, see "Locating the System Serial Number" on page 137.)	
Peripherals attached to the system	
Email address and phone number for you and a secondary contact	
Street address where the system is located	
Superuser password	
Summary of the problem and the work being done when the problem occurred	
IP address	
Server name (system host name)	
Network or Internet domain name	
Proxy server configuration	

Related Information

- "About System Components" in *Oracle Server X6-2L Service Manual*
- *Oracle x86 Servers Diagnostics, Applications, and Utilities Guide* at: `https://www.oracle.com/goto/x86admindiag/docs`

Locating the System Serial Number

You might need to have your server's serial number when you ask for service on your system. Record this number for future use. Use one of the following methods to locate your server's serial number:

- On the front panel of the server, look to the left side of the chassis and below the status LEDs.
- Locate the Customer Information Sheet (CIS) attached to your server packaging. This sheet includes the serial number.
- From the Oracle ILOM web interface, go to the System Information → Summary Information page in the Oracle ILOM web interface.
- From the Oracle ILOM CLI, type the `show /System` command.

Related Information

- “Front Panel Status Indicators, Connectors, and Drives” on page 27

Site Planning Checklists

This section provides reference checklists for site preparation. The following topics are covered.

Preparation Checklists

The following checklists will help you plan for and address the physical, electrical, and environmental requirements of the Oracle Server X6-2L prior to receiving the server at your site.

Access Route and Data Center Checklist

Review the following facility requirements before installing the server.

TABLE 10 Access Route and Data Center Room Checklist

Data Center Room Considerations	Yes	No	N/A	Comment
Has the access route been checked for clearances of the packaged equipment?				
Do all the doors and entry ways conform to the width and height requirements for transportation, including the width of the unpacked unit?				

Data Center Room Considerations	Yes	No	N/A	Comment
Are there any ramps, stairs, or thresholds that are in the moving path for the new hardware?				
Have you confirmed that the access route is free of any obstacles that would expose the device to shock?				
If there are stairs, then is a loading elevator accessible for moving the equipment?				
Has the rack location been allocated?				
Is there a vacant space in the rack for the new server?				
Does the floor layout meet the equipment maintenance access requirements?				
Is there adequate space available for server maintenance?				
Have cabinet stabilization measures been considered?				
Will the hardware location require any non-standard cable lengths?				
Is the floor to ceiling height a minimum of 2914 mm or 2.9 m (9.6 feet)?				
Is the depth of the raised floor a minimum of 460 mm (18 inches)?				

Related Information

- “Rack Requirements” on page 40

Data Center Environment Checklist

Complete the following checklist to ensure that the data center environment requirements are met for the server.

TABLE 11 Data Center Environment Checklist

Data Center Environment Considerations	Yes	No	N/A	Comment
Does the computer room air handling meet temperature and humidity requirements?				
Does the installation floor layout satisfy the ventilation requirements?				
Will the equipment be positioned so that the exhaust air of one rack does not enter the air intake of another rack?				
Are the perforated floor tiles each rated at 400 CFM or greater?				

Data Center Environment Considerations	Yes	No	N/A	Comment
Do the data center air conditioners provide sufficient front to back airflow?				
Is airflow adequate to prevent hot spots?				
Can the data center continuously satisfy environmental requirements?				
Can more vented floor tiles be obtained if required?				

Related Information

- “Ventilation Guidelines” on page 20

Facility Power Checklist

Complete the following checklist to ensure that the facility power requirements are met for the data center in which the server will be installed.

TABLE 12 Facility Power Checklist

Facility Power Considerations	Yes	No	N/A	Comment
Do you know the required operating voltage and electric current level of the device and peripherals?				
Are enough power outlets provided within 2 meters (6.5 feet) for each rack?				
Do the power outlets have appropriate socket receptacles?				
Will optional ground cables be attached to the rack?				
Are the circuit breakers for the equipment suitable in terms of voltage and current-carrying capacities?				
Does the power frequency meet the equipment specifications?				
Will system power be delivered from two separate grids?				
Is there a UPS to power the equipment?				

Related Information

- “Electrical Power Requirements” on page 16

Rackmount Checklist

Complete the following checklist prior to installing the server into a rack or cabinet.

TABLE 13 Rackmount Checklist

Rackmount Considerations	Yes	No	N/A	Comment
Is the distance between the front and rear mounting planes between the minimum of 610 mm and the maximum 915 mm (24 inches to 36 inches)?				
Is the clearance depth in the front of the front mounting plane (distance to the front cabinet door) at least 25.4 mm (1 inch)?				
Does the target rack meet the following minimum load capacity? ■ 19 kg/RU ■ 785 kg total				
Is the rack a four-post rack (mounting at both front and rear)? Two-post racks are not compatible.				
Does the rack's horizontal opening and unit vertical pitch conform to ANSI/EIA 310-D-1992 or IEC 60927 standards?				
Does the rack have RETMA rail support?				
Does the rack support Oracle cable management arms (CMAs)?				
Does the rack support installation of Oracle vented and solid filler panels?				
Can the rack provide tie-downs for the Ethernet wiring harness?				
Is there sufficient space for the cable harnesses and the power distribution units (PDUs) in the rack?				
Can a label with the serial number be printed and attached to the target rack?				
Does the rack support installation of standard Oracle PDUs? If not, then complete this checklist.				
Can the customer provide an equivalent pair of PDUs?				
Can the customer provide two PDUs with capacity of 110kVA per PDU?				
Can the customer provide a single PDU and its circuits to support the power requirements in case one PDU fails?				

Rackmount Considerations	Yes	No	N/A	Comment
Can the customer ensure power loads are evenly distributed across all circuits of a single PDU?				
Can the customer provide appropriate power drops for the PDUs?				

Related Information

- “Installing the Server Into a Rack” on page 39

Safety Checklist

Complete the following checklist to ensure that the safety requirements are met for the data center in which the server will be installed.

TABLE 14 Safety Checklist

Safety Considerations	Yes	No	N/A	Comment
Is there an emergency power shut off?				
Is there a fire protection system in the data center room?				
Is the computer room adequately equipped to extinguish a fire?				
Is antistatic flooring installed?				
Is the floor below the raised floor free of obstacles and blockage?				

Related Information

- *Oracle Server X6-2L Safety and Compliance Manual*

Auto Service Request Checklist

Complete the following checklist if you are planning to use Auto Service Request with the server.

TABLE 15 Auto Service Request Checklist

Auto Service Request Considerations	Yes	No	N/A	Comment
Do you have an Oracle Online Account to register Auto Service Request?				
Do you have your My Oracle Support Customer Support Identifier (CSI) number?				
Do you have the host name and IP address for the server that will have Auto Service Request Manager?				
Will the system need a proxy server? If so, what is the host name and IP address for the proxy server?				
Do you have the Technical Contact information for Auto Service Request? This information should include the first name, last name, and e-mail address of the contact.				

Logistics Checklist

Complete the following checklist to ensure that the logistics requirements are met for the data center in which the server will be installed.

TABLE 16 Logistics Checklist

Logistics Considerations	Yes	No	N/A	Comment
Do you have contact information for the data center personnel?				
Is there security or access control for the data center?				
Are there any security background checks or security clearances required for vendor personnel to access the data center? If yes, then do you have a recommended agency?				
How many days in advance must background checks be completed?				
Are there any additional security access issues?				
Is computer room access available for installation personnel?				
Are laptops, cell phones, and cameras allowed in the data center?				
Does the building have a delivery dock?				
Is there a delivery/unpacking/staging area?				
Is the delivery inside?				

Logistics Considerations	Yes	No	N/A	Comment
If the delivery is not inside, then is the site prepared for uncrating?				
Is the unpacking/staging area protected from the elements?				
Does the building have adequate receiving space?				
Is the unpacking area air-conditioned to avoid thermal shock for various hardware components?				
Will sufficient moving personnel be available to install the hardware?				
Are you prepared for uncrating and trash removal?				
Are there any restrictions on delivery and trash removal?				
Are there any restrictions on delivery truck length, width or height?				
Does the customer allow cardboard boxes and other packing material in the computer room?				
Is there a time constraint on dock access? If yes, then provide time constraints.				
Is tail lift required on delivery carrier to unload the equipment at the delivery dock?				

Related Information

- “Server Physical Specifications” on page 13
- *Oracle Server X6-2L Safety and Compliance Guide*

Index

U

V

W