Sun Fire X4800 Server Installation Guide for Oracle VM

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Using This Documentation

This section describes related documentation, submitting feedback, and a document change history.

- "Product Information Web Site" on page 5
- "Documentation and Feedback" on page 5
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Product Information Web Site

For information about the Sun x86 servers, go to `http://www.oracle.com/technetwork/server-storage/sun-x86/overview/index.html`.

For software and firmware downloads for your x86 server product, go to `http://www.oracle.com/technetwork/server-storage/sun-x86/downloads/index.html` page and click on your server model.

Documentation and Feedback

Documentation	Link
All Oracle products	`http://www.oracle.com/documentation`
Sun Fire X4800 server	`http://download.oracle.com/docs/cd/E19140-01/index.html`
Oracle ILOM 3.0	`http://www.oracle.com/technetwork/documentation/sys-mgmt-networking-190072.html#ilom`

Provide feedback on this documentation at: `http://www.oracle.com/goto/docfeedback`.

About This Documentation (PDF and HTML)

This documentation set is available in both PDF and HTML. The information is presented in topic-based format (similar to online help) and therefore does not include chapters, appendixes, or section numbering.

A PDF that includes all information on a particular topic subject (such as hardware installation or product notes) can be downloaded by clicking on the PDF button in the upper left corner of the page.

Contributors

Primary Authors: Michael Bechler, Ralph Woodley, Ray Angelo, Cynthia Chin-Lee.

Change History

The following changes have been made to the documentation set.

- April 2010 – Installation Guide released.
- June 2010 – Installation Guide and Getting Started Guide re-released.
- July 2010 – Initial release of other documents.
- August 2010 – Product Notes and Service Manual re-released. ESX Installation Guide added.
- October 2010 – Product Notes re-released.
- December 2010 – Product Notes re-released.
- March 2011 – Documents re-released for SW1.2 including the Installation Guide, the Product Notes, the Linux Installation Guide, the Oracle Solaris Installation Guide, the Windows Installation Guide, and the Service Manual.
- July 2011 – Product Notes and Service Manual re-released.
- January 2012 – Product Notes updated for SW1.4.
- June 2012 – Product Notes, Oracle VM Installation Guide, Oracle Solaris Installation Guide, Oracle ILOM 3.0 Supplement, and the Diagnostics Manual re-released.

Introduction to Oracle VM Installation

This document provides information on installing the Oracle VM server and points to the Oracle Solaris documentation for installation. It provides the following topics.

Description	Link
Describes how to erase an existing hard disk partition and create a virtual disk on which to install an operating system.	"Preliminary Tasks Before Installing an OS" on page 9
Describes how to install Oracle VM.	"Installing Oracle VM" on page 25

Preliminary Tasks Before Installing an OS

Certain tasks must be done before you can install an operating system, depending on whether there is an OS already on your boot drive, or your drives are new with no previous partitions.

These tasks include:

- "How to Erase Your Boot Hard Disk" on page 9
- "How to Create a Virtual Disk" on page 10
- "How to Set the Boot Drive" on page 23

▼ How to Erase Your Boot Hard Disk

Your server might have the Solaris OS preinstalled on the hard drive. If so, you must erase it before installing Linux.

Before You Begin Obtain a copy of the Tools and Drivers CD before starting this procedure.

Caution – This procedure erases all data from the hard drive. Back up any data you wish to save before starting this procedure.

1. **Back up any data on the hard drive that you want to save.**

2. **Insert the Tools and Drivers CD into the server's CD/DVD drive.**

   If your server does not have a CD/DVD drive, use the remote console (JavaRConsole). See "How to Connect Remotely Using the ILOM Web Interface" in *Sun Fire X4800 Server Installation Guide*.

3. **Boot the system from the Tools and Drivers CD.**

   The tools and drivers main menu appears.

4. **Select Erase Primary Boot Hard Disk from the main menu.**

   This erases all partitions currently on the primary hard drive except for the diagnostic partition. If the diagnostic partition is present, it is not erased.

Next Steps
- "How to Create a Virtual Disk" on page 10
- "How to Set the Boot Drive" on page 23

How to Create a Virtual Disk

Before attempting to install the operating system, you must create a virtual disk on your server to make available space accessible for the image download. The download erases the contents of the disk.

Virtual disks can be created from the LSI firmware for downloading the operating system. The LSI firmware can only be reached during boot-up of the server. Before Windows is launched and when the LSI banner is shown, you can enter the Control-H key combination to access the LSI interface.

Note – Virtual disks can also be created from the MegaRAID software (which is installed through the supplemental drivers on the Tools and Drivers DVD), but should not be used for installing the operating system.

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1. **Log in to the server using the IP address of the service processor (SP) module.**
2. **In the GUI window, click the Remote Control tab to launch ILOM Remote Control.**
3. **Select the KVMS tab.**
4. **Under Mouse Mode, select Relative, then click Save.**

Note – The Relative option enables the mouse to move from window to window while you are in Remote Console. At the end of this procedure, you are asked to change this mouse setting to Absolute.

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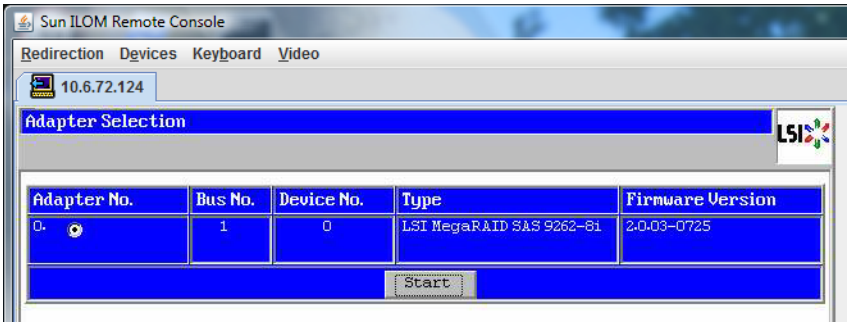
5. **Click the Redirection tab. In the Redirection screen, click on Launch Remote Console.**

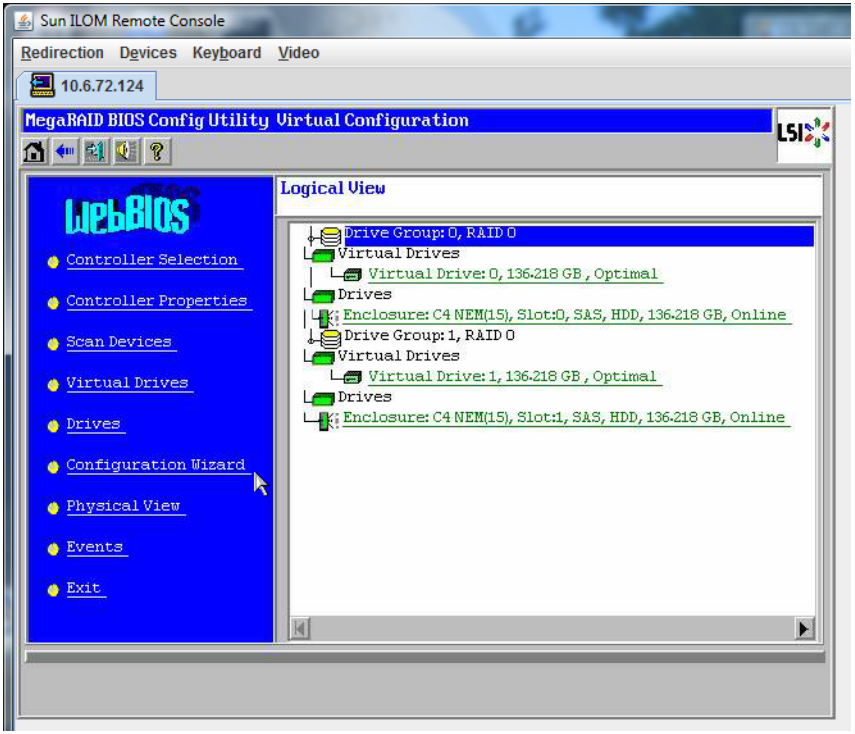
   This launches the ILOM 3.0 remote console window.
6. **From the Devices menu, select Mouse to enable the mouse.**
7. **Reboot your system and wait for the LSI banner. When the devices appear in the banner page, use the Control-H key combination.**

8 In the Adapter Selection screen, click Start.



The MegaRaid BIOS Config Utility Virtual Configuration screen opens.

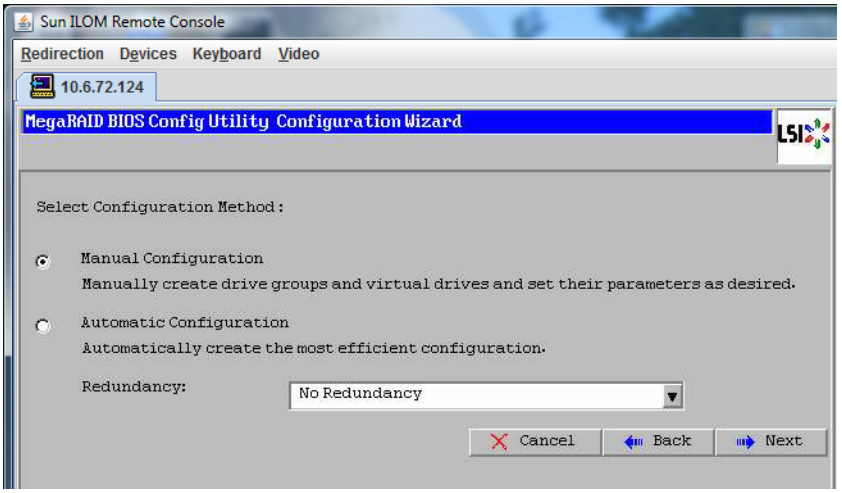
9 In the MegaRaid BIOS Config Utility Virtual Configuration screen, select Configuration Wizard.



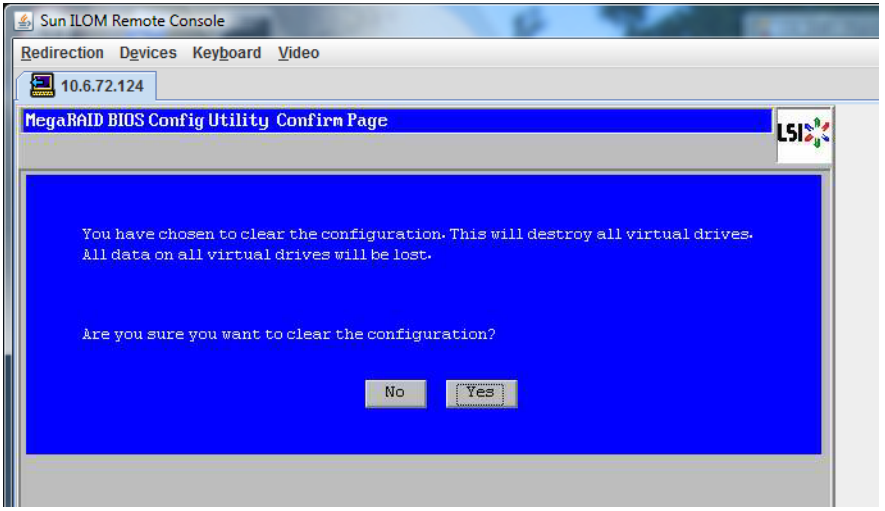
10 In the Configuration Wizard screen, select New Configuration, then click Next.

11 Select Manual Configuration.

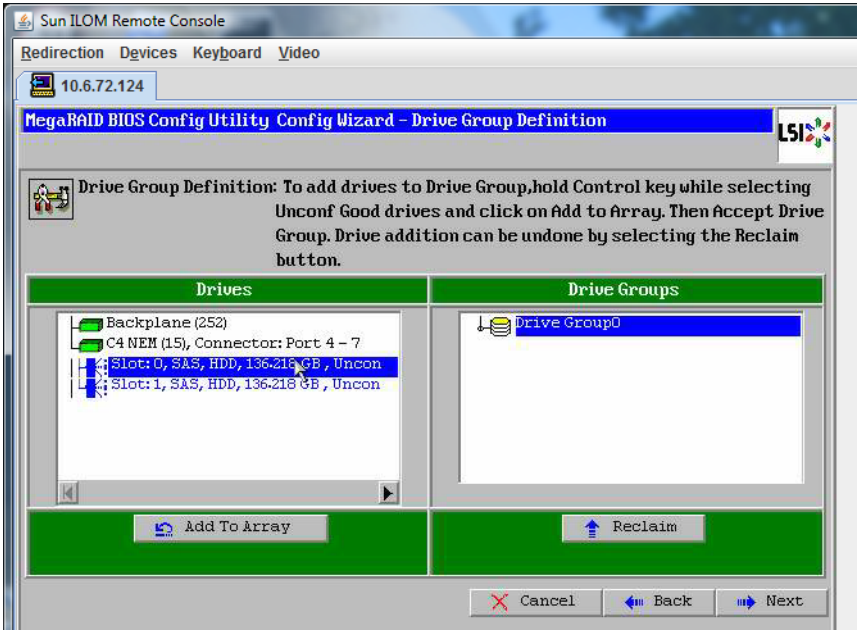
Automatic Configuration creates a single virtual drive that includes all the hard drives on your system. More than one drive is configured as a striped set (RAID0) and appears as a single virtual drive of combined storage space. This might not be desirable as there can be multiple points of failure. That is, if one drive fails, then the system does not boot. You must remove all the drives except one. Alternatively, you can use Manual Configuration to create the virtual drive using only one hard drive.



12 If a confirmation window appears, click Yes.

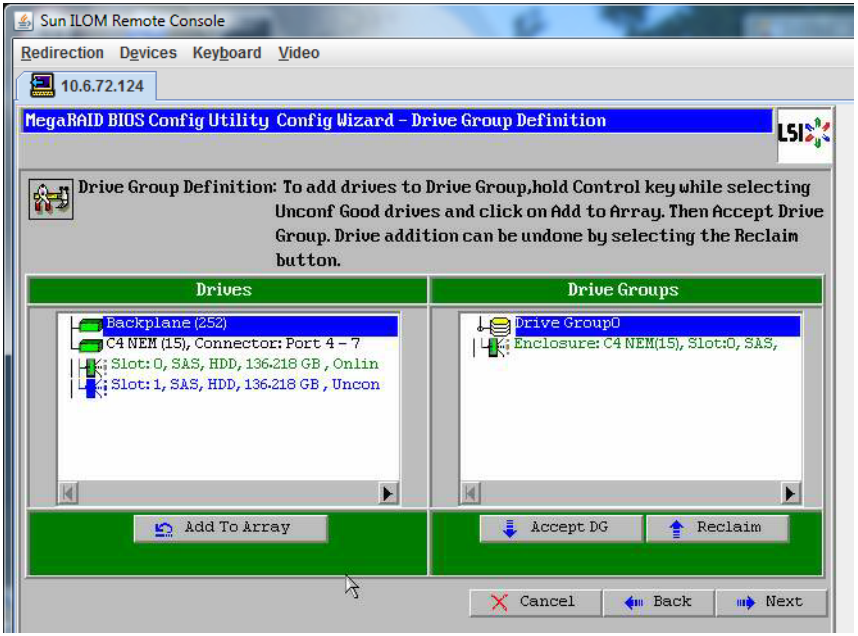


13 **When the MegaRAID BIOS Config Utility Config Wizard – Drive Group Definition screen appears, you see the drives in the system and the drive groups. Select the drive you want and click Add To Array.**



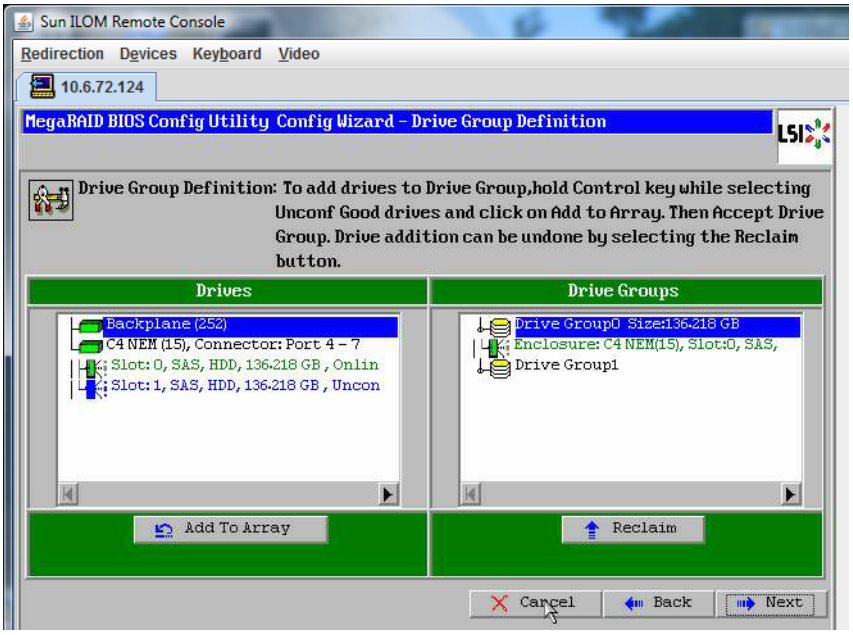
14 Click Accept DG to create the drive group.

You can now view Drive Group0.

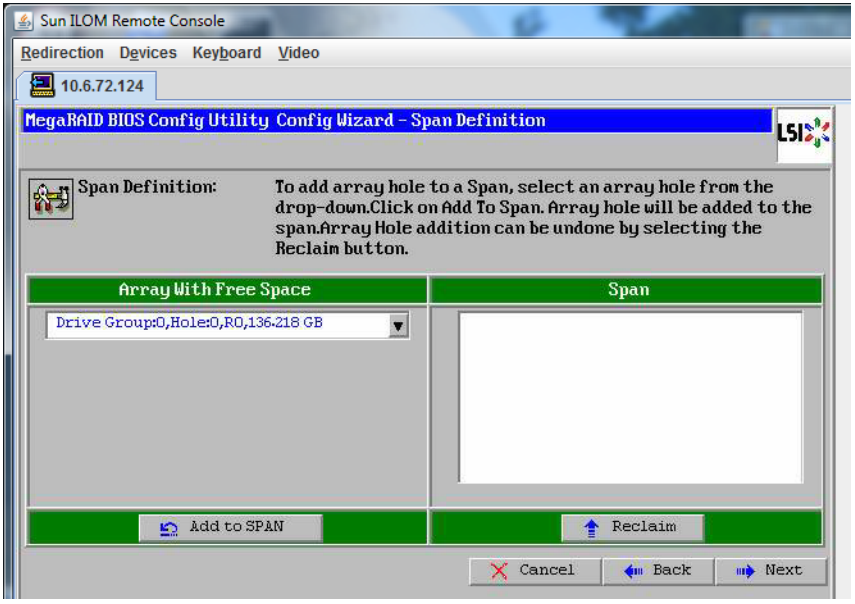


15 Click Next.

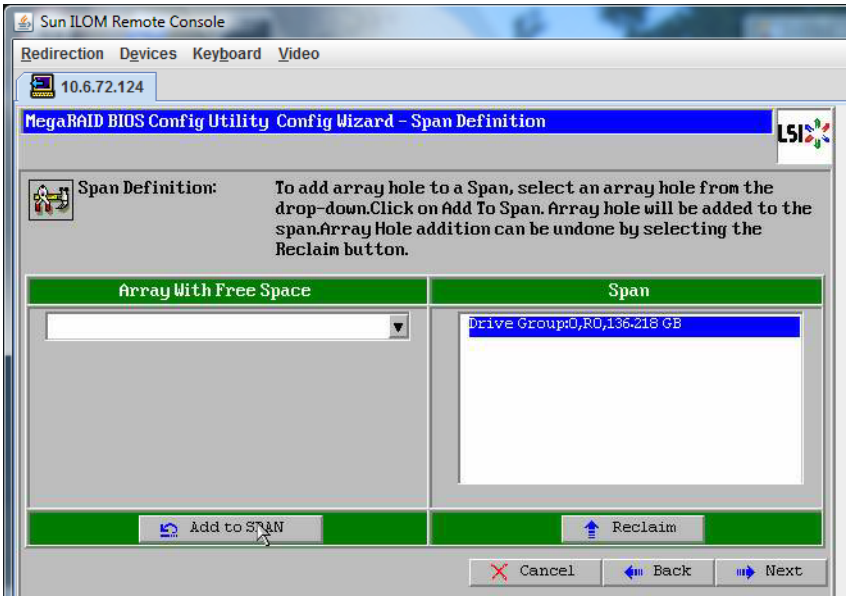
Note – You can undo the drive group selection by clicking the Reclaim button.



16 The drive group appears in the Span Definition window. Click Add to SPAN.

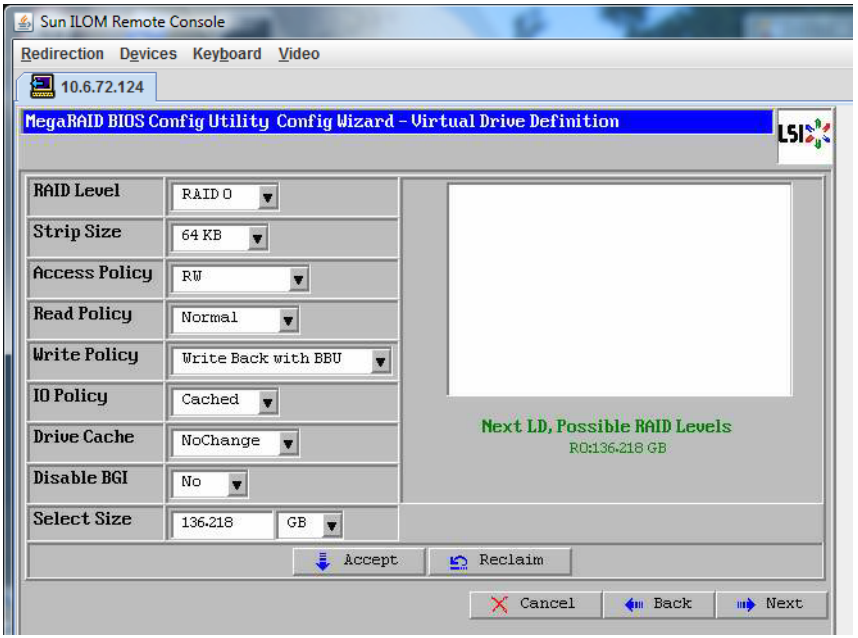


17 The drive group appears in the span. Click Next.

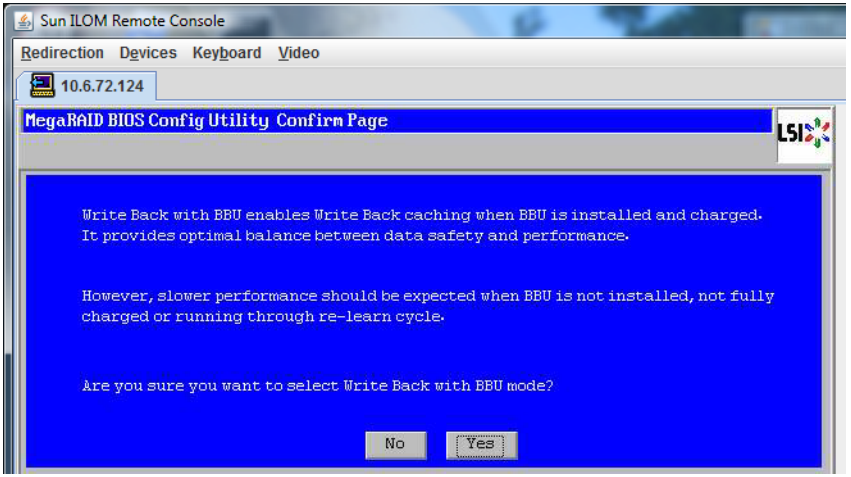


18 The Virtual Drive Definition screen appears. Set the RAID level and configurations you want for your virtual drive and click Accept.

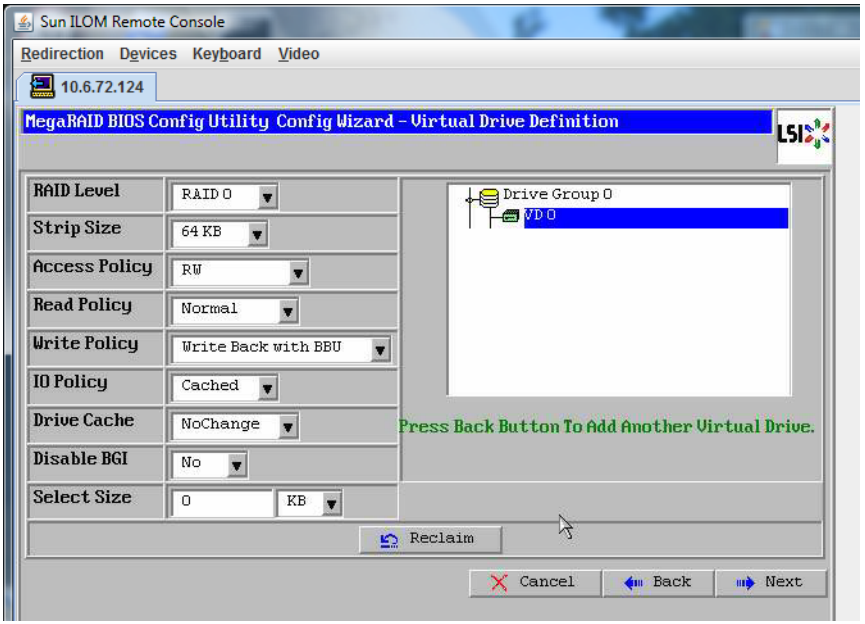
For more information about configuring RAID, refer to your server's Disk Management documentation.



19 When system prompts you to confirm Write Back with BBU mode, click Yes.

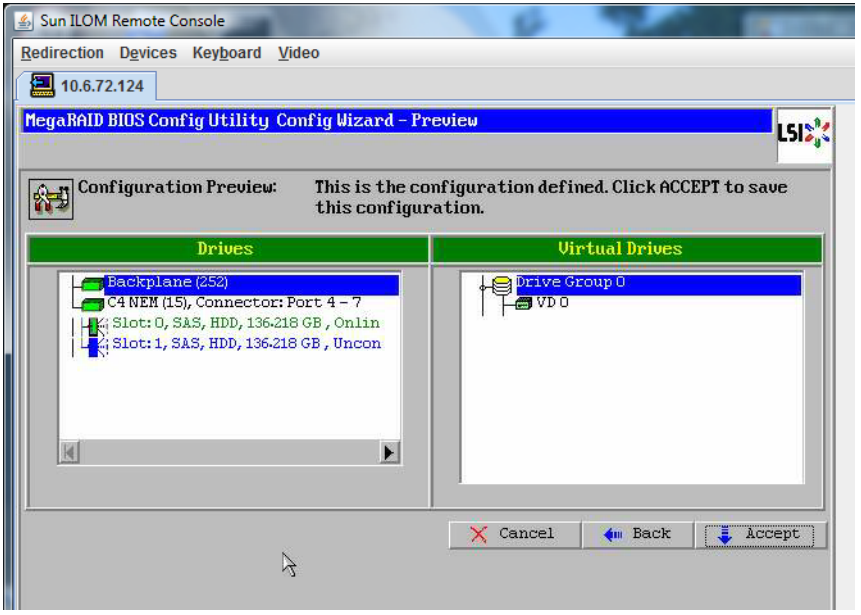


20 At the Config Wizard window, click Next.

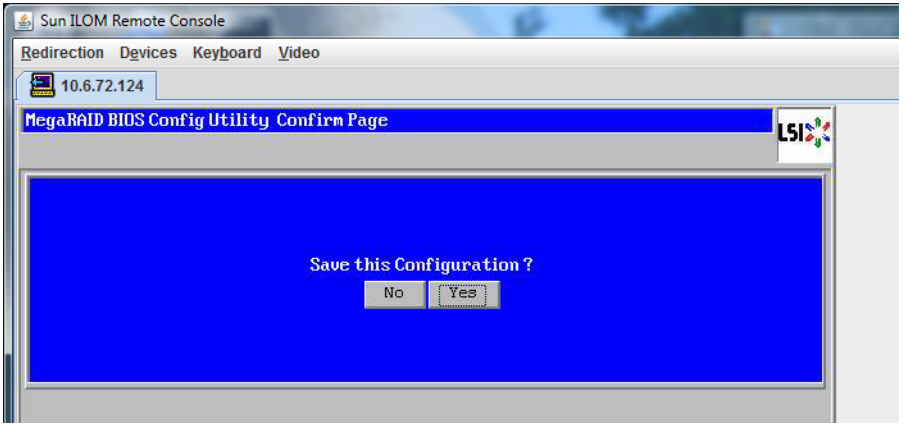


21 The Preview screen appears. Note that the virtual drive includes Drive Group 0.

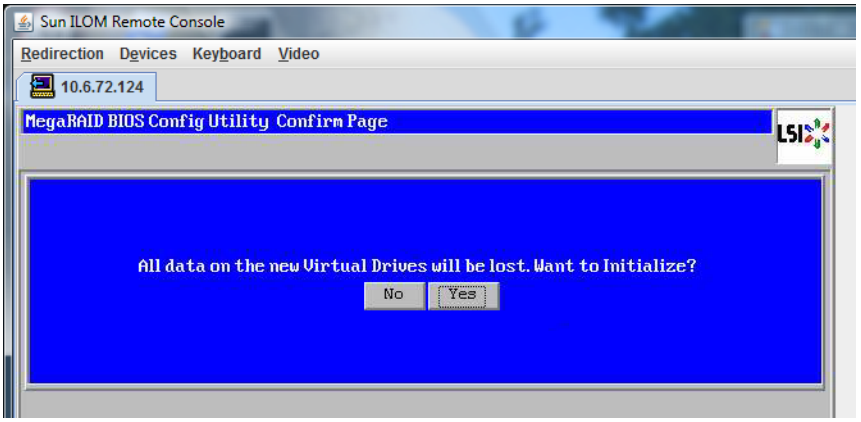
This graphic shows a single virtual drive using the Manual Configuration option:



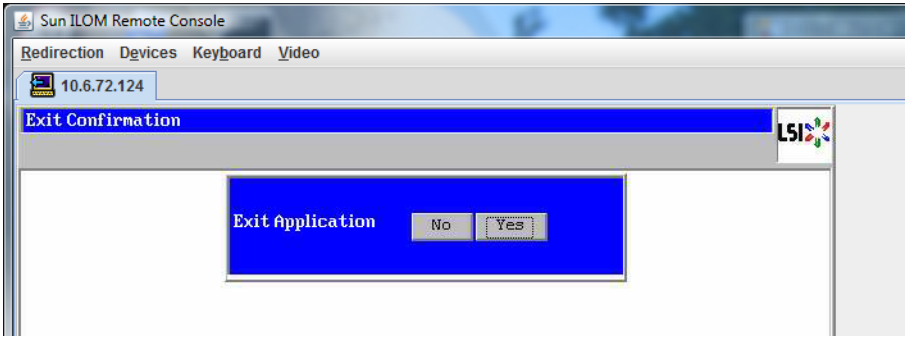
22 Save the Configuration.



23 Select Yes to the prompt: All data on Virtual Drivers will be lost. Want to Initialize?

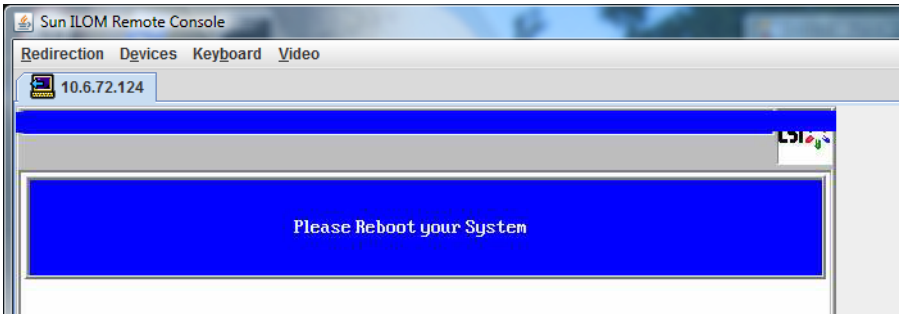


24 Click Yes to exit.

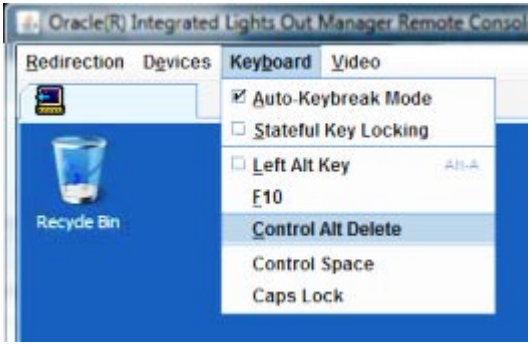


25 When you see Please Reboot Your System, use the Alt-B key combination to view the keyboard pull-down menu.

Caution – You must do this step; otherwise, the next step using Control Alt Delete reboots your local machine.



26 **Use the arrow keys to select Control Alt Delete in the menu to reboot the remote system. Press Enter.**



27 **Go back and set the mouse mode to Absolute:**

a. **In the Remote Control screen, select the KVMS tab.**

b. **Under Mouse Mode, select the Absolute.**

c. **Click Save.**

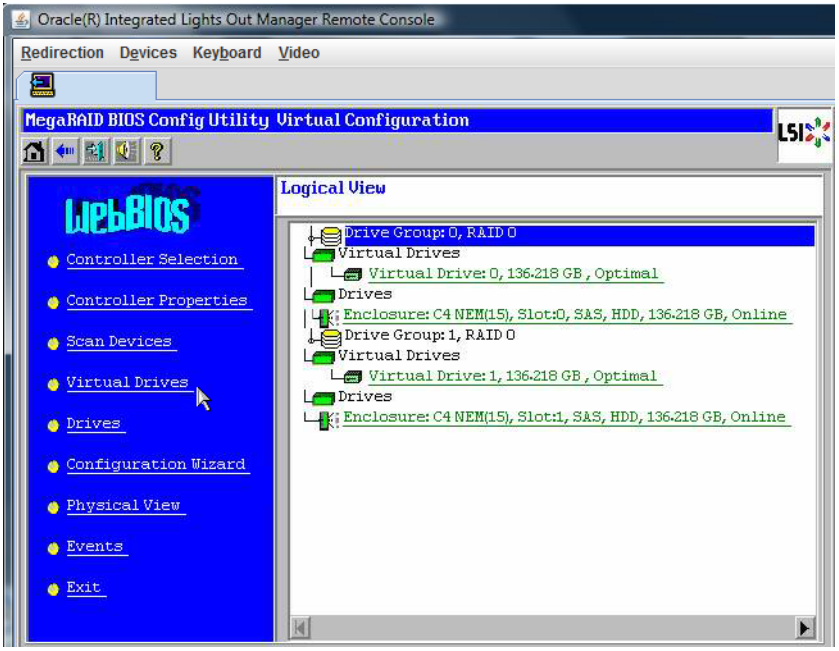
Next Steps

- "How to Set the Boot Drive" on page 23

How to Set the Boot Drive

After creating a virtual drive you need to set the drive to be the boot drive if you are going to install your operating system on it.

1 Go to the Configuration Wizard screen and select Virtual Drives.



The MegaRAID BIOS Config Utility Virtual Drives Configuration screen appears.

2 **Check to see if the Set_Boot Drive (current=none) is listed as one of the options:**

If the Set_Boot Drive (current=none) option is listed, then the boot drive has not been set.

3 **Click Set_Boot Drive (current=none), then click Go.**

Next Steps

- "Installing Oracle VM" on page 25

Installing Oracle VM

Your server is compatible for use with Oracle VM 2.2.1. Oracle VM is a virtualization environment platform that enables users to create and manage Virtual Machines (VMs). These virtual machines exist on the same physical server but behave like independent physical servers. Each virtual machine created with Oracle VM has its own virtual CPUs, operating system, network interfaces, and storage.

Oracle VM is comprised of the following components:

- **Oracle VM Manager:** A web application which acts as the user interface for creating and managing your virtual machines. This includes virtual machine creation (including templates), life cycle management (deploying, migrating and deleting), and resource management (ISO files, templates and shared storage resources).
- **Oracle VM Server:** A lightweight, secure virtualization environment based on Xen hypervisor used to run virtual machines and the Oracle VM agent.
- **Oracle VM Agent:** Installed on Oracle VM Server, it communicates with Oracle VM Manager and includes a Web Services API for managing the Oracle VM Server, server pools, and resources.

The following topics describing the installation of Oracle VM are included in this section:

Step	Description	Link
1	Obtain an overview of Oracle VM installation.	"Installing Oracle VM" on page 25
2	Check system requirements.	"System Requirements" on page 26
3	Obtain the installation image and burn it to a DVD or copy it onto a server.	"How to Obtain Oracle VM Software" on page 26
4	Install Oracle VM Server.	"How to Install Oracle VM Server" on page 27
5	Install Oracle VM Manager.	"How to Install Oracle VM Manager" on page 29
6	Create shared storage, a server pool, and virtual machines.	"Creating and Managing VM Resources" on page 30

System Requirements

- Two systems with static IP addresses are required to install Oracle VM: one system to run Oracle VM Server, and one to run Oracle VM Manager.
- For the system that will be running Oracle VM Server, you must start out with a clean installation (no preinstalled OS or firmware-level RAID volumes).
- The system that will be running Oracle VM Manager must have one of the following OSes installed:
  - Oracle Enterprise Linux Release 4.5 or later
  - Red Hat Enterprise Linux Release 4 or later
- Oracle VM media set or an equivalent ISO image. The ISO image can be used for remote installation or for creating an installation CD/DVD.
- Review the release notes for the Oracle VM software. The documentation set can be found at: `http://download.oracle.com/docs/cd/E15458_01/index.htm`
- DVD-ROM drive.

Note – If you are installing remotely, the DVD-ROM drive, keyboard, mouse, and monitor are connected to the local system instead of the server. Also, you can use an ISO image instead of an actual CD/DVD.

- USB keyboard and mouse.
- Monitor.
- While configuring an operating system for a networked server, it might be necessary to provide the logical names (assigned by the OS) and the physical name (MAC address) of each network interface being used on the Oracle VM Server. See"Identifying Logical and Physical Network Interface Names for Linux OS Configuration" in *Sun Fire X4800 Server Installation Guide for Linux Operating Systems* for details.

▼ How to Obtain Oracle VM Software

1 **Download the Oracle VM software from the web at:**

`http://www.oracle.com/virtualization`

2 **If you plan on installing the software at the system, burn the ISO images to CD/DVDs.**

You should have a Oracle VM Manager CD/DVD, and a bootable Oracle VM Server CD/DVD.

How to Install Oracle VM Server

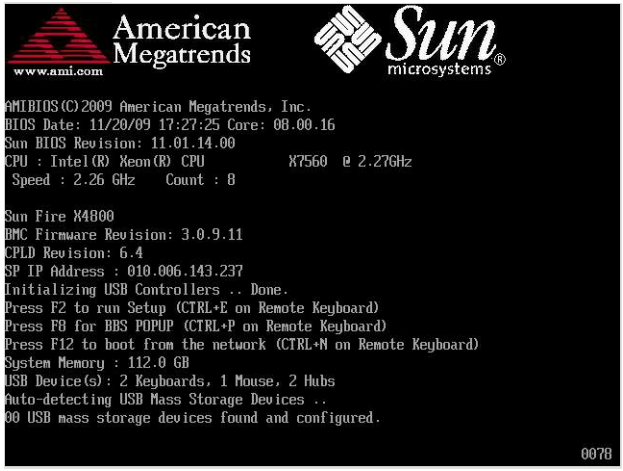
Before You Begin Refer to the "System Requirements" on page 26.

1. **Connect to your server console. For more information, see "Connecting to the System Console" in *Sun Fire X4800 Server Installation Guide***

2. **If not done already, insert your Oracle VM Server distribution CD/DVD or access the ISO image distribution media for the method you chose in step 1.**

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

   BIOS messages appear on the console.



4. **When you see a message offering a series of selections, press F8.**

   After a delay, a menu offers a selection of boot devices (see the following example).

5 **Select a boot device from the list.**

To boot from a physical CD/DVD or from an ISO image, select CD/DVD.

Control passes to the OS installation program on the media. The Oracle VM Server screen is displayed.

6 **At the prompt, press F2 to pass additional boot options.**

This is required to allow the megaraid_sas driver to load correctly.

7 **Provide the following additional parameters:**

```
mboot.c32 xen.gz extra_guest_irqs=64,2048 nr_irqs=2048 --- vmlinuz ---
initrd.img
```

Note – If using a kickstart installation, add the additional kernel parameters to the PXE configuration file. If you want to make these changes permanent, edit the `/boot/grub/grub.conf` file in your Oracle VM Server after the installation has completed.

8 **Enter the following command at the boot prompt: `Enter`**

9 **Follow the prompts to install the software.**

Oracle VM Server and Oracle VM Agent software are installed.

For additional information refer to the Oracle VM Server installation documentation at:

`http://download.oracle.com/docs/cd/E15458_01/index.htm`

▼ How to Install Oracle VM Manager

Before You Begin If you are installing Oracle VM Server on a Sun server, you can use the *Integrated Lights Out Manager* (ILOM) to install software using either a CD/ DVD or an ISO image mounted on a remote system. The remote console feature allows you to use the keyboard, mouse, video, and storage of the remote system as if it were connected to the server where you are installing the operating system. Once the remote console session is configured, the server can boot from the remotely mounted distribution media (either a CD/DVD or equivalent ISO file).

1 **On a server running a supported operating system, insert and mount the Oracle VM Manager CD.**

2 **Navigate to the root of the CD and run the following script:**

```
# sh runInstaller.sh
```

Note – If you are not already the root user, use the `su` command and enter the root password to give yourself the necessary privileges to launch the install script.

3 **Follow the prompts to install the software.**

For additional information refer to the Oracle VM Manager installation documentation at:

`http://download.oracle.com/docs/cd/E15458_01/index.htm`

Creating and Managing VM Resources

After installing Oracle VM Server (with Oracle VM Agent) and Oracle VM Manager, you can create and manage virtual resources.

- Create a shared storage repository. For fault tolerance, multiple virtual machines using this storage can be setup in a clustered configuration. Options for your shared storage:
  - OCFS2 (Oracle Cluster File System) using the iSCSI (Internet SCSI) network protocol
  - OCFS2 using SAN (Storage Area Network)
  - NFS (Network File System)
  - Partition with multipath failover
- Create a server pool for your virtual machines.
- Create your virtual machines in the server pool.

For detailed information, refer to the Oracle VM installation documentation at:

`http://download.oracle.com/docs/cd/E15458_01/index.htm`