Sun Fire X4800 Server Installation Guide for Oracle® Solaris Operating System



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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
- "About This Documentation (PDF and HTML)" on page 6
- "Contributors" on page 6
- "Change History" on page 6

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

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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 Solaris OS Installation

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

Your server supports the 64–bit versions of Solaris 10 10/09, Solaris 10 8/11, and Solaris 11 Express.

Description	Link
Preliminary tasks to be done before installing the Solaris OS.	"Preliminary Tasks Before Installing An OS" on page 9
How to erase an existing volume on the boot disk.	"How to Erase Your Boot Hard Disk" on page 9
How to create a required virtual drive volume on the boot disk.	"Creating a Virtual Disk" on page 11
Obtain an overview of OS installation tasks.	"Solaris OS Installation Tasks" on page 27
Decide on an installation method.	"Choosing an Installation Method" on page 28
Find out where to get Solaris OS installation documentation.	"Obtaining Solaris 10 Documentation" on page 31
Identify your logical and physical network ports.	"Identifying Logical and Physical Network Interface Names for Solaris 10 OS Installation" on page 32

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.

- If your server's boot hard disk has an operating system installed other than Solaris, you might need to erase it in order to prepare it for Solaris. See "How to Erase Your Boot Hard Disk" on page 9.
- If your server did not come with preinstalled Solaris, you need to create a logical drive using the server HBA software, otherwise, the Solaris installation program will not be able to see the server's disk drives. See "Creating a Virtual Disk" on page 11
- If you are going to install your OS on a disk that is part of a RAID array, you must configure
 the RAID array before installing your OS. See your server's disk management
 documentation collection for details. See "Creating a Virtual Disk" on page 11.

How to Erase Your Boot Hard Disk

If your server's boot disk has a pre-existing operating system you no longer want, you can erase it as described in this section.

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 "Connecting to the System Console" 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 Proceed to "Creating a Virtual Disk" on page 11.

Creating 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.

See "How to Create a Virtual Disk" on page 11.

How to Create a Virtual Disk

- 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.

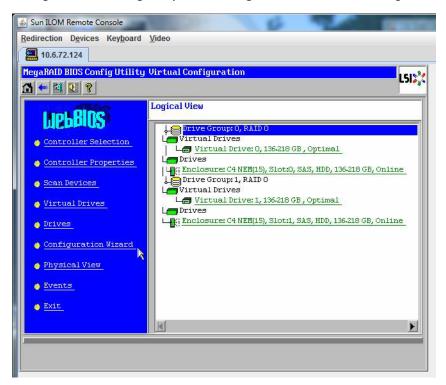
5 Click the Redirection tab. In the Redirection screen, click on Launch Remote Console.
This launches the ILOM 3.0 remote console window.

- 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.

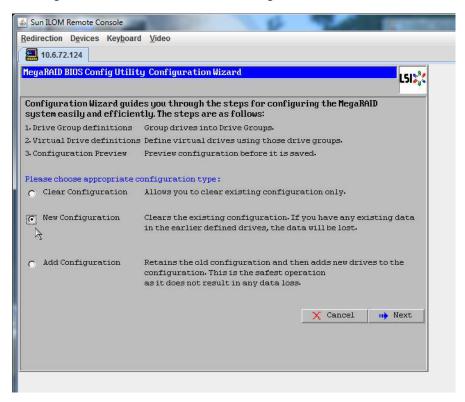


The MegaRaid BIOS Config Utility Virtual Configuration screen opens.

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

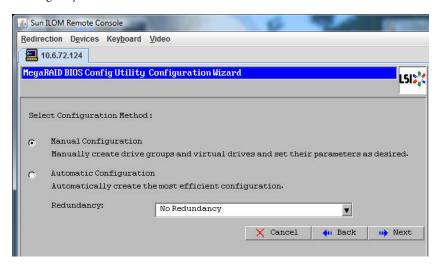


10 In the Configuration Wizard screen, select New Configuration, then click Next.

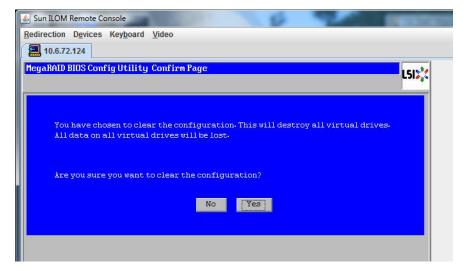


11 Select Manual Configuration.

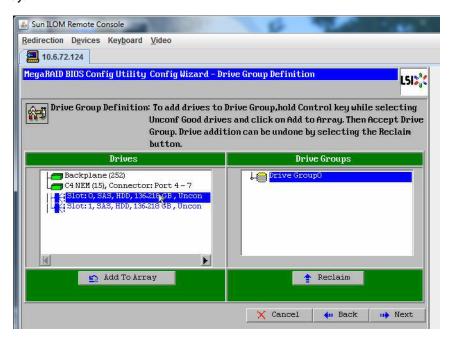
Automatic Configuration creates a single virtual drive that includes all the hard drives on your system. More than one drive is configured as a striped set (RAID0) and appears as a single virtual drive of combined storage space. This might not be desirable as there can be multiple points of failure. 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.

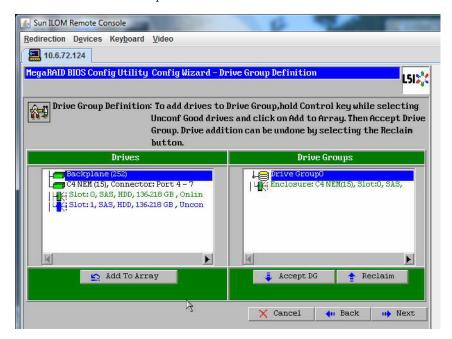


When the MegaRAID BIOS Config Utility Config Wizard – Drive Group Definition screen appears, you see the drives in the system and the drive groups. Select the drive you want and click Add To Array.



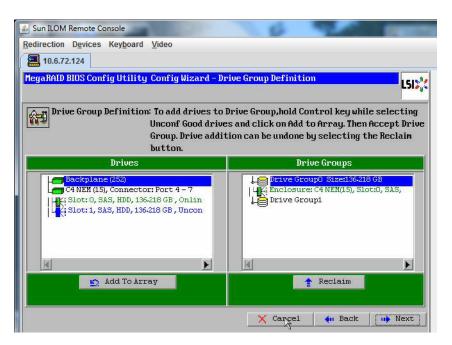
14 Click Accept DG to create the drive group.

You can now view Drive Group0.

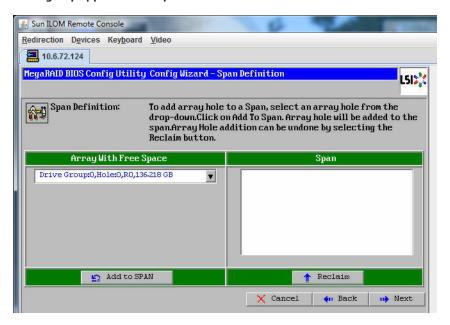


15 Click Next.

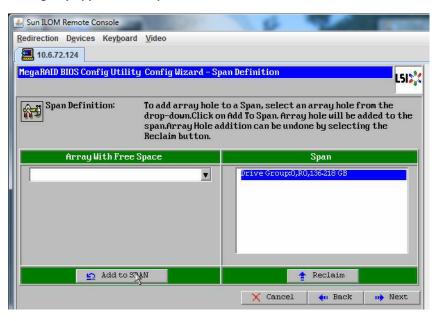
Note – You can undo the drive group selection by clicking the Reclaim button.



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

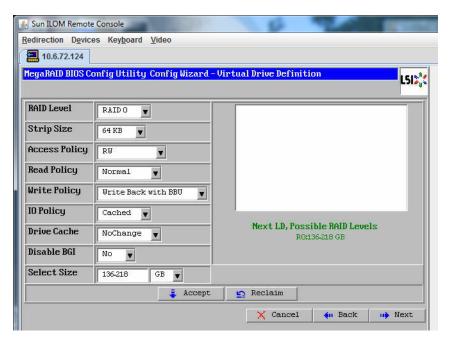


17 The drive group appears in the span. Click Next.

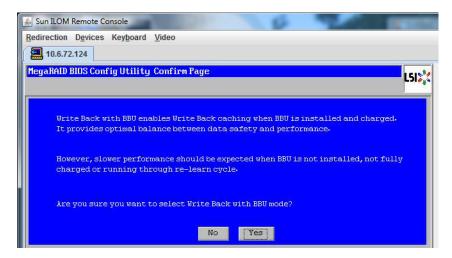


18 The Virtual Drive Definition screen appears. Set the RAID level and configurations you want for your virtual drive and click Accept.

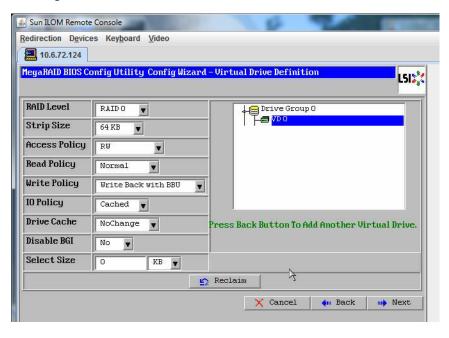
For more information about configuring RAID, refer to your server's Disk Management documentation.



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

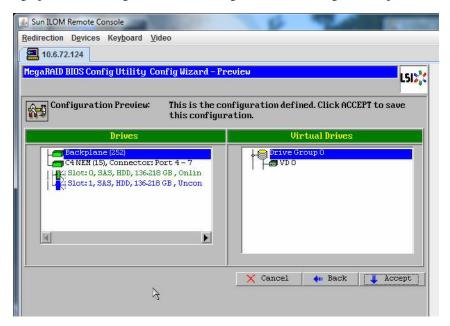


20 At the Config Wizard window, click Next.



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

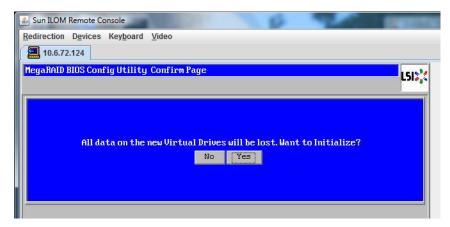
This graphic shows a single virtual drive using the Manual Configuration option:



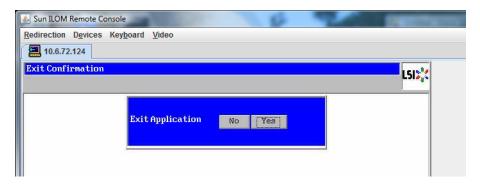
22 Save the Configuration.



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



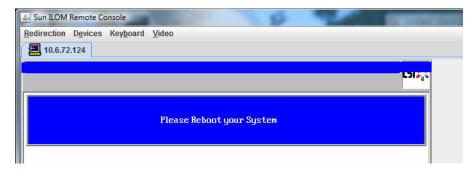
24 Click Yes to exit.



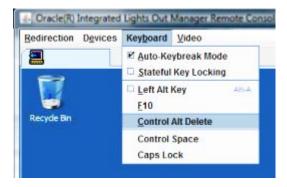
When you see Please Reboot Your System, use the Alt-B key combination to view the keyboard pull-down menu.



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.

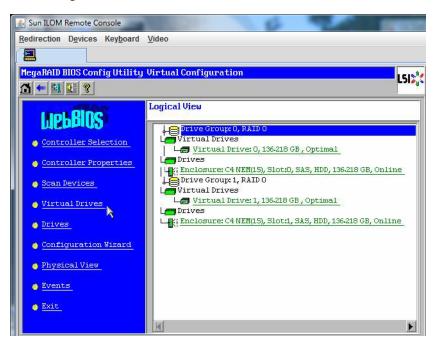


- 27 Go back and set the mouse mode to Absolute:
 - a. In the Remote Control screen, select the KVMS tab.
 - b. Under Mouse Mode, select the Absolute.
 - c. Click Save.

▼ 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.

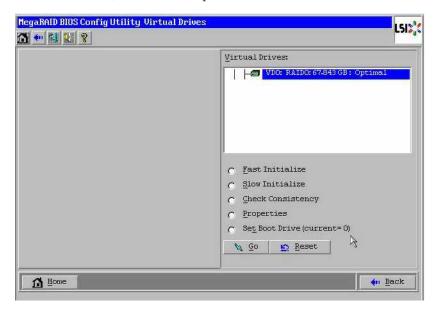
1 Go to the Configuration Wizard screen and select Virtual Drives.



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.

Solaris OS Installation Tasks

The following table provides a task map for installing Solaris.

Task	Description	Instructions
Set up your server.	Install your server hardware and configure the service processor.	Sun Fire X4800 Server Installation Guide
Review the Sun Fire X4800 Server Product Notes.	The Product Notes contain late-breaking news about the Solaris OS software and patches.	Sun Fire X4800 Server Product Notes
Choose an installation method.	Choose an installation method and locate the installation instructions.	"Choosing an Installation Method" on page 28
Locate the Solaris OS installation documentation.	The Solaris OS documentation included with your software contains most of what you need to know about installation.	Refer to "Obtaining Solaris 10 Documentation" on page 31 or "Obtaining Solaris 11 Express Documentation" on page 31
Identify the logical names and the physical names of each network interface.	During the OS installation, you need to provide the logical names (assigned by the OS) and the physical name (MAC address) of each network interface.	"Identifying Logical and Physical Network Interface Names for Solaris 10 OS Installation" on page 32
Install any required OS patches.	Check Sunsolve for the latest patches for your OS.	http://support.oracle.com
	Note – In order to use Solaris FMA (Fault Management Architecture) with Solaris 10 10/09 OS, you must install patch 142901–09 (or later) after the installation of the OS.	

Choosing an Installation Method



Caution – The Sun Fire X4800 server supports only 64–bit Solaris installations. 32–bit installations are not supported.

Your server supports the following Solaris OS installation methods:

 Boot from the preinstalled Solaris 10 10/09 OS image on the hard drive as described in "Setting Up the Preinstalled Solaris Operating System" in Sun Fire X4800 Server Installation Guide.

There is no preinstalled image for Solaris 11 Express.

 Install on one server from DVD or CD-ROM media interactively with the Solaris installation program. Solaris 11 Express can also be installed from a USB device.

For Solaris 10, the Solaris installation program on the Solaris 10 OS DVD or CD can be run with a graphical user interface (GUI) or as an interactive text installer. The Solaris Device Configuration Assistant is included in the Solaris Installation Program.

For Solaris 11 Express, use the Solaris installation program on the LiveCD or a LiveUSB media. These can be run with a GUI or with an interactive user interface.

 Install on one server or several servers over the network with Preboot Execution Environment (PXE) technology and the following installation methods:

For Solaris 10:

- Solaris installation program over the network from remote DVD or CD images
- JumpStart installation
- Installation using a serial console

For Solaris 11 Express:

- Automated install
- Automated install using a custom manifest
- Serial console

Note – The Solaris OS provides additional programs for installation, such as booting over a wide area network (WAN), but your server supports only those methods listed in this document.

The following table describes installation methods available for installing the Solaris OS.

Method	Description	Instructions
Boot from the preinstalled image.	Depending on your configuration, a Solaris OS image might be preinstalled on a hard drive.	Sun Fire X4800 Server Installation Guide
Install from DVD or CD-ROM media. Solaris 11 Express can also be installed from USB media using a special .usb image file.	all from DVD or CD-ROM Use the Solaris Installation Program on the CD or DVD media to install one server interactively. aris 11 Express can also be alled from USB media using a	Follow the instructions for x86 installation. For Solaris 10, refer to the Solaris 10 10/09 Installation Guide: Basic Installations or the Solaris 10 9/10 Installation Guide: Basic Installations in the the Solaris 10 Operating System collection.
		For Solaris 11 Express, refer to Getting Started With Oracle Solaris 11 Express in the Oracle Solaris 11 Express Information Library.
Install from the network by using PXE. Caution - When you install the Solaris 10 OS from a PXE server, the netboot environment must be configured to use the 64-bit kernel. You can do this by changing the PXE boot menu to include amd64 on the kernel and module lines. For details, refer to the Solaris 10 10/09 Installation Guide: Custom JumpStart and Advanced Installations or the Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations in the Solaris 10 Operating System documentation collection.	You need to use PXE to install the Solaris OS over the network when there is a need for automated installation. To boot over the network by using PXE, you need to set up an installation server and a DHCP server, and configure the BIOS on each server to boot from the network.	Follow the instructions for an x86 PXE installation. For Solaris 10, refer to the Solaris 10 (9/10 or 10/09) Installation Guide: Custom JumpStart and Advanced Installations in the Solaris 10 Operating System documentation collection. For Solaris 11 Express, refer to the Oracle Solaris 11 Express Automated Installer Guide in the Oracle Solaris 11 Express Information Library.

Method	Description	Instructions
	Use a serial console to install the Solaris OS in a PXE-based network installation.	Follow the instructions for an x86 PXE installation. For Solaris 10, refer to the Solaris 10 10/09 Installation Guide: Network-Based Installations or the Solaris 10 9/10 Installation Guide: Network-Based Installations in the Solaris 10 Operating System documentation collection.
		■ For Solaris 11 Express, refer to the Oracle Solaris 11 Express Automated Installer Guide in the Oracle Solaris 11 Express Information Library.
	Boot the Solaris OS on your server without a hard drive. Use this method with a PXE-based network installation.	Follow the instructions for an x86 PXE installation. For Solaris 10, refer to the Solaris 10 10/09 Installation Guide: Network-Based Installations or the Solaris 10 9/10 Installation Guide: Network-Based Installationsin the Solaris 10 Operating System documentation collection.
		■ For Solaris 11 Express, refer to the <i>Oracle Solaris 11 Express Automated Installer Guide</i> in the Oracle Solaris 11 Express Information Library.

Also see:

- "Obtaining Solaris 10 Documentation" on page 31
- "Obtaining Solaris 11 Express Documentation" on page 31
- "Identifying Logical and Physical Network Interface Names for Solaris 10 OS Installation" on page 32

Obtaining Solaris 10 Documentation

Use the following links to obtain Solaris 10 documentation. Make sure to follow instructions specific to x86 systems where they are specified.

- For the Solaris 10 installation guides, refer to the Solaris 10 10/09 Release and Installation Collection or the Oracle Solaris 10 9/10 Release and Installation Collection.
- For the Solaris 10 administration guides, refer to the Oracle Solaris 10 System Administrator Collection.
- For information about upgrading your Solaris system, refer to the Solaris 10 10/09
 Installation Guide: Solaris Live Upgrade and Upgrade Planning or the Oracle Solaris 10 9/10
 Installation Guide: Solaris Live Upgrade and Upgrade Planning.
- For troubleshooting information, refer to Appendix A of the Solaris 10 10/09 Installation Guide: Custom JumpStart and Advanced Installations or of the Oracle Solaris 10 9/10 Installation Guide: Custom JumpStart and Advanced Installations.
- Refer to the Sun Fire X4800 Server Product Notes for patch and other late-breaking information. Patches and instructions are available from the SunSolve Patch Portal at http://support.oracle.com.

Solaris 10 documentation is also available on the Solaris Documentation DVD included with your Solaris OS software.

Obtaining Solaris 11 Express Documentation

Use the following links to obtain Solaris 11 Express documentation. Make sure to follow instructions specific to x86 systems where they are specified.

- For a list of new features in Solaris 11 Express 2010.11, refer to Oracle Solaris 11 Express 2010.11 What's New.
- Solaris 11 Express general documentation refer to the Oracle Solaris 11 Express Information Library.
- For information on obtaining Solaris 11 Express media, refer to Oracle Solaris 11 Express 2010.11 Downloads.
- For information on installing Solaris 11 Express refer to Getting Started With Oracle Solaris 11 Express.
- For information on setting up the PXE installer refer to the Oracle Solaris 11 Express Automated Installer Guide.

Identifying Logical and Physical Network Interface Names for Solaris 10 OS Installation

When you are configuring an operating system for a networked server, you might need to provide the logical name (assigned by the OS) and the physical name (MAC address) of each network interface. This topic shows you how to get this information.

"How to Identify Logical and Physical Network Interface Names" on page 32

▼ How to Identify Logical and Physical Network Interface Names

Use this procedure to display information about MAC addresses and network interfaces, including their logical and physical names (MAC addresses).

1 In the Install Type menu, select Option (6) Single User Shell and press Enter.

Note – Alternatively, you can run these commands from a command shell.

If a message appears about mounting an OS instance, select \mathbf{q} . You should not mount any OS instance.

The message "Starting Shell" appears. See the following figure.

```
Solaris Interactive (default)
          Custom JumpStart
          Solaris Interactive Text (Desktop session)
          Solaris Interactive Text (Console session)
          Apply driver updates
          Single user shell
Enter the number of your choice.
Selected: 6
Single user shell
Searching for installed OS instances...
Multiple OS instances were found. To check and mount one of them
read-write under /a, select it from the following list. To not mount
any, select 'q'.
 1 /dev/dsk/c2t0d0s0
                          Solaris 10 6/06 s10x_u2wos_08 X86
   /dev/dsk/c2t1d0s0
                          Solaris 10 6/06 s10uZ_08-DN-WOS X86
Please select a device to be mounted (q for none) [?,??,q]: q
Starting shell.
```

- 2 At the command prompt (#), type the following command to plumb all network interfaces.
 - # ifconfig -a plumb

Note – The plumb process might take some time.

3 At the command prompt, type the following command.

ifconfig -a

The output of Solaris named interfaces and MAC addresses appears. For example:

```
ifconfig -a |more
e1000g0: flags=1000802<BROADCAST,MULTICAST,IPv4> mtu 1500 index 2
       inet 0.0.0.0 netmask 0
       ether 0:14:4f:c:a1:ee
e1000g1: flags=1000802<BROADCAST,MULTICAST,IPv4> mtu 1500 index 3
       inet 0.0.0.0 netmask 0
       ether 0:14:4f:c:a1:ef
e1000g2: flags=1000802<BROADCAST,MULTICAST,IPv4> mtu 1500 index 4
       inet 0.0.0.0 netmask 0
       ether 0:14:4f:c:a5:d6
e1000g3: flags=1000802<BROADCAST,MULTICAST,IPv4> mtu 1500 index 5
       inet 0.0.0.0 netmask 0
       ether 0:14:4f:c:a5:d7
e1000g4: flags=1000802<BROADCAST, MULTICAST, IPv4> mtu 1500 index 6
       inet 0.0.0.0 netmask 0
       ether 0:14:4f:c:a1:4e
e1000g5: flags=1000842 BROADCAST, RUNNING, MULTICAST, IPv4> mtu 1500 index 1
       inet 0.0.0.0 netmask 0
       ether 0:14:4f:c:a1:4f
e1000g6: flags=1000802<BROADCAST,MULTICAST,IPv4> mtu 1500 index 7
       inet 0.0.0.0 netmask 0
       ether 8:0:20:b6:ce:94
e1000g7: flags=1000802<BROADCAST,MULTICAST,IPv4> mtu 1500 index 8
       inet 0.0.0.0 netmask 0
```

In the sample output above:

- The el000g# entry in the first column refers to the Solaris logical named interface. This first
 column in the output identifies the logical names assigned by Solaris to the network
 interfaces.
- The ether #:#:#:#:# entry in second column (third row) refers to the physical MAC address name of the network port.

For example:

The physical MAC address for the Solaris named network interface is e1000g0 is 0:14:4f:c:a1:ee.

- 4 Save this information to a file, or write it down.
- 5 When you are done, to start the system configuration script, type sys-unconfig(1M) at the command line.

This command restores the system configuration to the factory defaults.



Caution – The sys-unconfig(1M) command halts the system and restores the factory settings. Do not run this command unless you are ready to reconfigure your system.

For example:

sys-unconfig

WARNING

This program will unconfigure your system. It will cause it to revert to a "blank" system - it will not have a name or know about other systems or networks. This program will also halt the system. Do you want to continue (y/n)?

The system reboots and the configuration script starts.