

# Installing Sun Solaris Operating System for x86 Platforms on HP ProLiant Servers



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# Introduction

The purpose of this white paper is to educate readers on how to install Solaris on HP ProLiant servers. Additionally, it describes how to obtain and install different Solaris software components and provides a list of known issues and work-arounds.

## Objectives

After reading this document, readers should be able to describe how to configure, install, and resolve known issues with the Solaris operating system on an HP ProLiant server.

## Prerequisite configuration steps

Before you install Solaris OS 8 x86 or Solaris 9 OS x86 on ProLiant servers, you will need to perform these configuration steps using the ROM-Based Setup Utility (RBSU). RBSU replaces the BIOS setup utility to let you make server configuration changes before the operating system boots.

Using RBSU:

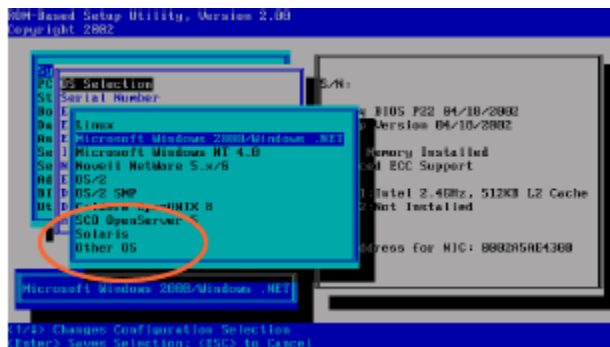
1. Access RBSU by pressing the *F9* key when prompted during startup.
2. Use the arrow keys to navigate through the menu system.
3. Make selections by pressing the *Enter* key.
4. Cancel selections by pressing the *Esc* key.
5. Save selections and changes by pressing the *F10* key.

## Select Solaris to be the operating system

ProLiant servers ship with the default setting of Windows 2000 Server for the operating system, so the first step is to change this setting.

1. Start up system and press *F9* to access RBSU.
2. Select *System Options* → *OS Selection*
3. Choose *Solaris*.

Figure 1 RBSU Screen



4. Press *F10* to save selections and changes.

## Set up the Boot controller

1. From the Main Menu, select *Boot Controller Order*.

This displays a list of controllers.

2. Select the required controller from this menu.

## Set up the IRQ

1. From the Main Menu, select *PCI Devices*.

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**NOTE:** By default the correct IRQ value should be assigned. However, as described in the current limitations and common issues section, the Solaris installation and subsequent reboots may hang if the boot controller shares IRQ with the Compaq 64 bit/66 MHz SCSI controller.

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2. Change the assigned IRQ value so that it is not shared.

## Configure Smart Array RAID Volume

If the ProLiant server has a (supported) Smart Array controller installed, you will need to configure the logical volumes on the attached SCSI hard drives.

Do this with either of these utilities:

- The Option ROM Configuration for Arrays which is an on-board configuration utility which prompts you to configure the controller during the controller initialization phase. Press F8 as instructed to use this utility

OR

- The Array Configuration Utility (ACU) which ships with all ProLiant servers as part of the ProLiant Essentials CDs and documentation. Locate ACU on the SmartStart CD.

## Check the ProLiant system ROM and Option firmware

Be sure that the ProLiant system ROM and firmware for Smart Array controllers and SCSI devices are the current revision level and that all available bug fixes have been applied. Do this from the Web by linking to [www.hp.com](http://www.hp.com) and selecting *support and drivers*.

## Obtaining the software

The next step is to obtain the software, all necessary drivers, and utilize the ProLiant Essentials tools for setup and configuration.

- Obtain the Solaris OS 8 x86 or Solaris 9 OS x86 software from [www.sun.com](http://www.sun.com).
- Obtain the device drivers for the supported storage and network controllers that comprise your Solaris on ProLiant installation. Link to [www.hp.com](http://www.hp.com) and select support and drivers. From there you will follow steps to search and locate the appropriate drivers. All support software is delivered as a SoftPaq which is a collection of device drivers, configuration programs, flashable ROM images, utilities, and more. SoftPaqs come in two different formats. You can identify the format by the last three characters of the filename (EXE or ZIP) . When you download a SoftPaq, note the ending of filename and follow the instructions for handling that SoftPaq type. HP strongly recommends that you read all documentation related to any SoftPaqs you download.

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**NOTE:** All HP ProLiant servers ship with the ProLiant Essentials Foundation pack. Included in this pack is the SmartStart CD. SmartStart is a setup utility. You can boot the server from the SmartStart CD and also select the Maintenance option to view a list of server option configuration and management utilities

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## Installing Solaris and other components

### Installation methods

The Solaris operating system supports multiple installation methods:

- Webstart
- Interactive
- Pre-Boot eXecution Environment (PXE)
- Jumpstart

Only the Interactive installation method is supported on ProLiant servers. You can run the interactive installation either from a CD on the local server or deploy the Solaris operating system image from the network.

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#### NOTES:

With some Network Interface Card (NIC) controllers, the network-based installation is not supported. If this is the situation, then the Net option on the Boot Solaris screen will not be available.

The Solaris OS 8 x86 boot diskette (referred to as the Device Configuration Assistant, or DCA) can be downloaded from the Sun web site: [www.sun.com](http://www.sun.com). The Solaris 9 OS x86 installation CD comes with a boot diskette (DCA) image which can be copied to a diskette to contain a boot diskette.

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## Driver Update (DU) diskettes and Install Time Updates (ITUs)

HP device drivers are packaged in Driver Update (DU) diskette format and are then delivered in Softpaq format.

To use a DU diskette during the Solaris installation, you can create one from a SoftPaq as follows:

1. Download the correct Softpaq from [www.hp.com](http://www.hp.com)
2. Execute or unzip it depending on the format in a Microsoft Windows environment.
3. Create DU diskettes from the SoftPaq files.

The DU diskette can then be used as an ITU during the Solaris installation when prompted especially if the DU contains the driver for the boot controller.

On an installed system, DU diskettes can be mounted and the components can be applied to the systems.

Documentation with details of the installation instructions is available as part of the DU diskette. Sun Microsystems may also provide some of the Operating System patches in ITU format for which the installation procedure is the same as the installation of a DU.

### Applying patches

You may need to apply patches to the operating system. Get up-to-date operating system and other patches from the Sun Microsystems website and use the "patchadd" command to install.

# Current limitations and known issues

## Solaris Operating System hangs

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### **Advanced Configuration and Power Interface (ACPI) issue**

The Solaris installation will hang on some of the ProLiant systems with device timeout messages. Sun Microsystems fixed this issue in Solaris and a patch is expected to be released.

Until the patch is available, disable the ACPI during Solaris installations and reboot subsequently to work around this issue.

A Customer Advisory is available with more details about the issue and work-around from [www.hp.com](http://www.hp.com). See the For More Information section in this document for the link.

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### **IRQ sharing issue**

The Solaris installation and subsequent reboots may hang if the boot controller shares IRQ with the Compaq 64 bit/66 MHz SCSI controller.

To resolve the issue, power-cycle the system and set the IRQ of the boot controller to a different IRQ using RBSU.

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## Boot controller and boot disk selection

The boot controller should be selected at the installation time in order for the operating system to build the correct bootpath. Also, when prompted by Solaris installer, the correct installation disk should be selected. If these steps are not performed correctly, Solaris will not be able to auto-reboot successfully.

### Incorrect bootpath issue

If the boot controller does not have an associated Solaris realmode driver, Solaris may not be able to auto-reboot successfully. This happens with non-boot controllers present in the system at the time of Solaris installation.

All add-on non-boot controllers should be removed from the system at the time of Solaris installation, to minimize occurrence of this issue.

Also, all SCSI disks connected to the non-boot embedded controller ports should be unplugged. To address this issue, the Solaris bootpath parameter should be edited to reflect the correct boot controller.

A Customer Advisory is available with more details about the issue and work around on the HP website [www.hp.com](http://www.hp.com).

### ACPI warning messages

On some of the ProLiant servers, ACPI warning messages related to resource conflicts are displayed on the console and logged into the messages file. While stepping thru the Solaris Device Configuration Assistant screens, the messages are displayed and user input is requested.

The messages are harmless and users are advised to ignore them.

## “Error: Missing Primary Disk” message

During the Solaris installation, sometimes the DCA displays the warning message “Error: Missing Primary Disk”.

This happens if the boot controller does not have a corresponding Solaris realmode driver. All of the existing HP Smart Array controllers do not have Solaris realmode driver support.

So, with these controllers configured as boot devices, the above mentioned error message will be displayed by DCA. The user is advised to ignore this message and continue with the installation.

## For more information

- Solaris Administration documentation from <http://docs.sun.com>.
- HP Customer Advisory list and other support documentation for Solaris on ProLiant servers available at [\*\*http://h71025.www7.hp.com/support/reference library\*\*](http://h71025.www7.hp.com/support/reference_library)  
Click on the words click here to select the category from the reference library.  
Select Operating System→Sun→ Sun Solaris
- The OS Support matrix available from <ftp://ftp.compaq.com/pub/products/servers/os-support-matrix-310.pdf>
- Other links to respective ProLiant server web pages are available at [\*\*http://h18004.www1.hp.com/products/servers/platforms/index-dl-ml.html\*\*](http://h18004.www1.hp.com/products/servers/platforms/index-dl-ml.html)

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