HP Integrity Server Essentials Foundation Pack HP Smart Setup Installation Poster for Microsoft® Windows®

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Start off right! With the new Smart Setup, server setup is easier and faster than ever.

- **Streamline the creation of disk partitions** through our easy to use EFI-based utilities.
- **Navigate easily** with the new browser-based user interface and online help information.
- **Access the latest server software** either directly from the Web or through the Smart Setup menu.
- **Perform firmware updates and server maintenance** operations efficiently with the utilities integrated on the Smart Setup media.

For more information, visit the HP Integrity Server site at

http://www.hp.com/support/itaniumservers

Getting Started on the HP Integrity Server

FOR CELL-BASED SYSTEMS: Text set off in this manner provides information for cell-based systems such as the HP Integrity rx8620, rx7620, and the HP Integrity Superdome.

Customers with IA-32 system experience should be aware of the following before initially powering on the HP Integrity server:

- **Video output:** When the server boots there is a delay in the video output. This delay can be anywhere from 1 to 3 minutes depending on how much memory is installed in the server. This is normal behavior.
- **Removable Media:** When using a CD-ROM or DVD-ROM in the HP Integrity server at the Extensible Firmware Interface (EFI) shell, you may need to map the drive in order to access the removable media. This can be done by inserting the media in the DVD-ROM drive, and typing **map -r** at the EFI shell prompt. This must be performed each time the removable media is inserted, after the server boots. Mapping is required only at the EFI shell and is not required when accessing the removable media through the OS.
- **BLK vs. FS:** A block device, which is recognized by the EFI is listed as blk#. Block devices represent data storage such as hard disk drives, hard disk partitions and DVD-ROM drives. A valid file system may or may not be located on a block device at any given time (for example: an unpartitioned disk). If the EFI does detect a valid file system and it is mounted using the **map -r** command, it appears as an fs# device. These devices can be used in file manipulation commands and operations.
- **Mouse Support:** Mouse support is not enabled at the EFI shell. The EFI shell commands are valid at the EFI shell prompt. The *Configuring Microsoft® Windows® Server 2003 on the HP Integrity Server* document lists EFI commands available at the EFI shell. This document is provided on the HP Smart Setup media. You can also type **help** at the EFI shell to access the built-in help pages.
- **Usage of HP Smart Setup:** HP Smart Setup is useful both before and after the OS has been installed. Boot the server with the Smart Setup media to the EFI-Based Setup Utility (EBSU) before OS installation in order to create hard drive partitions, manage firmware, and access documentation. After the OS installation, use HP Smart Setup to install drivers, utilities, and important fixes that will ensure the stability and performance of the system. Smart Setup can be used from a HP Integrity server, or through an IA-32 Windows workstation or server with a CD/DVD-ROM drive at any time to access documentation.

FOR CELL-BASED SYSTEMS: Before configuring your cell-based server, verify that the partition resources are allocated correctly by using the HP Par Commands Wizard and Partition Command Line Interface (ParCLI). This is performed through the SMS PC when partitioning HP Integrity Superdome, and from an IA-32 management console PC when partitioning the HP Integrity rx8620 and rx7620. See Smart Setup for additional documentation.

Disk Partitions

The following disk partitions are made by the EBSU and are already created in the software preload configuration:

ESP—The EFI System Partition contains the loader and other files necessary to boot the OS. It is 100 MB in size.

HPSP—The HP Service Partition is created to hold the diagnostic tools that are provided on the Offline Diagnostics and Utilities CD-ROM. The diagnostic tools and user files can be copied to this partition. You may launch these tools in order to troubleshoot the server. The HPSP is 400 MB in size. Refer to the help page in the "Create Partitions Wizard" section of the EBSU for more details.

MSR—The Microsoft Reserved Partition reserves space on each disk drive for subsequent use by the OS software. The size of the MSR depends on the size of the disk drive. On drives less than 16 GB in size, the MSR is 32 MB and on drives greater than or equal to 16 GB, the MSR is 128 MB.

Accessing the ESP from Windows—For file transfer between Windows and the ESP do the following:

1. From the Windows OS, use the **mountvol** command.
2. Use a command prompt by clicking on **start>run**, and typing **command**.
3. At the prompt, type: **mountvol x: /s** where **x** is any free drive letter. This will map the x: drive as your ESP.

NOTE: Space in ESP is limited and is needed for successful OS boot. Do not store non-essential files on this partition.

Smart Array Configuration

Use the steps in this section to configure your HP Smart Array as the boot controller. After the OS installation is complete, the HP Array Configuration Utility (ACU) can be used to configure the rest of your logical drives.

1. If you are using an HP Smart Array controller as your boot controller, use the Option Rom Configuration for Arrays (ORCA) utility to configure your logical boot drive. The ORCA utility can only be accessed when the system is booting. Press the **F8** key (see the note below) when the prompt appears on the screen during boot to start ORCA and configure your logical boot drive. Refer to the appropriate HP Smart Array controller user guide (available on the HP Smart Setup media) for details on using the ORCA utility.

FOR CELL-BASED SYSTEMS: The Smart Array Option ROM must be loaded manually the first time for cell-based systems during both manual or software preload installations. This can be done at the EFI shell by executing a **search all** command at the EFI prompt. The **F8** prompt will appear. Continue with the configuration without resetting the system.

2. After you have finished configuring the logical boot drive, exit ORCA, select the **EFI Shell [Built-in]** from the EFI Boot Manager, then type **reset**. The OS installation can proceed after the reset is complete.

If you are performing a manual installation and using the **Smart Array 6400** as your boot controller, you must load an **OEM boot driver**: Launch the EBSU (follow the steps given in the next section *Manual OS Installation*). Select **Load OEM Boot Driver** by pressing the **b** key. Select the appropriate card at the prompt to load the boot driver, then exit EBSU.

NOTE: For remote access, the Telnet and Hyperterminal applications on Windows NT4 and Windows 2000 do not correctly map the ASCII string for the function keys. To enter the configuration utility during POST, press the **Esc** key immediately followed by pressing the **8** key after the Smart Array banner is displayed on the remote console.

An alternative to using built-in Windows tools for remote access is to use Putty, a utility provided on Smart Setup.

Manual OS Installation

Use this section if the server was not preloaded with the Windows OS from HP.

IMPORTANT: Disconnect all mass storage devices from all controllers **except** for the controller device that you intend to use as the boot controller. Make a note of where these devices were connected for reconnection later. Doing this makes it much easier to install to the correct device.

Preparing for the OS Installation

1. Enable Remote Access (if required):
   a. Configure the IP address for the MP port from the local connection at the rear of the system. Use a null modem serial cable connection to a terminal emulator. The default settings are 9600, 8, none, 1, xoff/xon.
   b. Verify that the IPMI LAN ACCESS is enabled.

FOR CELL-BASED SYSTEMS: Step 2 is critical.

2. Set the Windows ACPI settings:
   a. After software or hardware changes and at initial boot, verify that the ACPICONFIG is set for Windows.
   b. At the EFI shell, type ACPICONFIG to view the configuration. This will display **acpiconfig settings: windows** if Windows mode is enabled.
   c. To enable this mode, type ACPICONFIG WINDOWS.
   d. Type ACPICONFIG to verify that the configuration is enabled.
   e. Reset the system with the EFI **reset** command.

3. If using a local video/keyboard verify that the local video output and keyboard input are set in the boot manager. Please refer to the *Configuring Microsoft® Windows® Server 2003, Datacenter Edition and Enterprise Edition on the HP Integrity Server* for detailed instructions.

4. Configure RAID, if required (see the Smart Array Configuration section).

5. Insert the Smart Setup media.

6. At the EFI boot manager menu, select **Internal Bootable DVD**.

   If the Internal Bootable DVD is not an option, follow these steps:
   a. When the EFI Boot Manager menu displays, use the arrow keys to highlight the entry **EFI Shell [Built-in]**, then press the **Enter** key to select it.
   b. The Device mapping table is displayed. Locate the fsx entry that contains the word **CDROM**. This file system maps to the DVD drive. For example:

   `fs0:Acpi(HWP0002,0)/Pci(2|0)/Ata(Primary,Master)/CDROM(EntryO)`

   c. Type **fs0:** (or use the entry you located above if it was not fs0) at the shell prompt, then press the **Enter** key.
   d. Type **\efi\boot\bootia64** at the shell prompt and press the **Enter** key. This launches the EFI-Based Setup Utility (EBSU) and adds "Internal Bootable DVD" to the menu.

7. From the EBSU main menu, use the arrow keys to select **Express Setup** and follow the prompts.
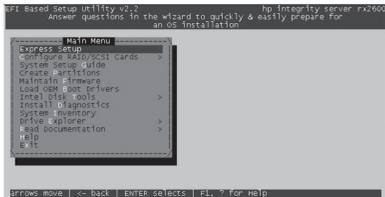
After completion of EBSU setup, operating system installation may begin.

At this point, RAID has been configured (if booting from a RAID controller). The following hard drive partitions have been created from the EBSU: EFI System Partition (ESP), HP Service Partition (HPSP), and the Microsoft Reserved Partition (MSR).

NOTE: Verify that you have the most current versions of firmware on the server and accessory cards at this time. New software may be found on the HP website at

http://www.hp.com/support/itaniumservers

8. If you selected **Launch OS installer** during the Express Setup, EBSU will ask for the Windows OS CD and will start the installer automatically, otherwise exit the EBSU. Use the arrow keys to highlight **Exit** then press the **Enter** key. In either case, proceed to the next section.

Installing Microsoft Windows

1. The procedure for installing Microsoft Windows is included in the *Microsoft Windows Server 2003 Installation Guide for HP Integrity Servers Enterprise Edition*. This document is provided on the HP Smart Setup media. You can read or print this document at a Windows workstation with a DVD-ROM or a CD-ROM drive by inserting the media and clicking on the document link.

2. After installing the OS, shut down the server and, if necessary, reconnect any mass storage devices you have previously disconnected to their respective controllers.

3. Use Smart Setup to update drivers and install utilities and Insight Management Agents after the Windows OS installation is complete. When installing the Insight Management Agents it is recommended to connect your peripheral hardware, such as, storage towers and fiber connections (if installed) beforehand so the Insight Management agent installation can detect them and add the appropriate agents.
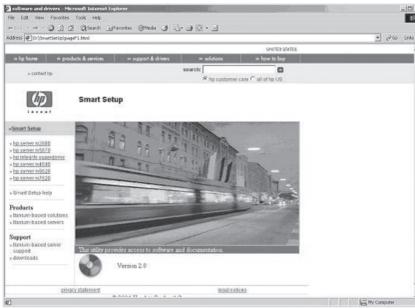
FOR CELL-BASED SYSTEMS: Step 4 is critical.

4. For maximum performance, HP recommends setting the memory in CLM mode using ParCLI.

For detailed instructions on how to use the **parmodify** and **parcreate** commands, refer to the *NPartition Command Line Interface (ParCLI) Installation and Troubleshooting Guide for Windows and the nPartition Management for HP Integrity Servers using Microsoft® Windows® guides*.

If your partitions are already created, use Parstatus to check how memory is set. For example:

`parstatus -p2 -V -g passwd -h myServer`

Software Preload OS Installation

Use this section if your system came preloaded with the Windows OS from HP.

Initial System Setup

1. Enable Remote Access (if required):
   a. Configure the IP address for the MP port from the local connection at the rear of the system. Use a null modem serial cable connection to a terminal emulator. The default settings are 9600, 8, none, 1, xoff/xon.
   b. Verify that the IPMI LAN ACCESS is enabled.

FOR CELL-BASED SYSTEMS: Step 2 is critical.

2. Set the Windows ACPI settings:
   a. After software or hardware changes and at initial boot, verify that the ACPICONFIG is set for Windows.
   b. At the EFI shell type ACPICONFIG to view the configuration. This will display **acpiconfig settings: windows**, if Windows mode is enabled.
   c. To enable this mode, type ACPICONFIG WINDOWS.
   d. Type ACPICONFIG to verify that it is enabled.
   e. Reset the system.

3. Power on the server.

   Windows displays a pop-up screen indicating that an EMS channel is present. (EMS is the remote management console, also called the Emergency Management Services.)

NOTE: It may take 2 to15 minutes for the mouse and keyboard to start working during this phase of the startup process. Please wait. If you wish to complete the installation from the EMS channel, then do nothing at the local console and proceed to enter the following information from the EMS console. If you wish to complete the installation from the local console, click **OK** and proceed to enter the following information from the local console

4. Click **Next** in the Welcome to the Windows Setup Wizard window.

5. Click **I Accept**, and then click **Next** in the License Agreement window.

6. Click **Next** in the Regional and Language Options window.

7. Enter your name, and organization in the proper fields, and click **Next** in the Personalize Your Software window.

8. Enter the product key ID and click **Next** in the Your Product Key window. This ID is located on the label attached to the computer.

9. Select the appropriate license purchased and click **Next** in the Licensing Modes window.

10. Enter the computer name, and password, and click **Next** in the computer name and administrator password window.

11. Select the correct date and time zone and click **Next** in the **Date and Time** window. The server reboots to the EFI Boot manager.

12. The server boots automatically to Windows.

13. Observe the HP Management agents installation message.

Re-installing the OS from the HP Re-installation Media

This section contains step-by-step instructions to re-install Windows from the Re-Install media.

1. Configure the boot controller and drive. If you are using a RAID adapter, follow the RAID installation guide to prepare the adapter and configure the RAID type.

⚠ **WARNING:** The installation is done to the boot controller detected as **adapter zero, drive zero**. It is recommended that you remove all controllers except the one on the boot controller before starting the re-installation process. Doing this makes it easier to install to the correct drive. If you do not do this, you may not be able to install the device you wish to boot from.

2. Insert the HP Re-installation Media in the DVD drive.

3. Boot from this media by doing one of the following:

   Select the **Internal Bootable DVD** entry from EFI boot manager if it is present. Otherwise, select **EFI Shell** and type the following commands.
   a. Select the DVD file system. For example type: **fs1:**.
   b. Start the loader by typing: **setupldr.**

4. Click **Re-install**.

5. Select the desired partition size.

6. Click **OK** to continue.

7. Wait until the files are copied from the DVD to the hard drive.

NOTE: The restore process displays 99% complete for a very long time. **Do not power off the server. Wait until this process is completed.**

8. Read the message displayed.

9. At the dialog box, click **OK** to continue.

10. Click **Exit** to reboot the server.

11. The server boots automatically to Windows.

12. Follow the "Initial System Setup" instructions listed in the previous section titled, "Software Preload OS Installation."

Headless Mini-Setup Boot

The headless installation is done via a remote setup and not with a local keyboard and VGA.

Microsoft Windows Servers 2003 64-bit uses the remote console port to interact with the user during the Mini-Setup phase of the boot process. Microsoft refers to this as EMS (Emergency Management Services). HP refers to this port as the headless console port.

This Mini-Setup phase is encountered the first time you boot a server after the image is restored with the re-install media.

The following procedure provides step-by-step instructions to complete the OS boot using the headless console MP port. Please note that this could be either the LAN or serial port on the MP card.

NOTE: Although Windows XP includes the Terminal Services client in the accessories/communications folder, Microsoft Windows 2000 requires that you install the Terminal Services client.

1. Connect to the target system partition with the terminal emulator.

2. At the remote console, select **Internal bootable DVD** from the EFI boot manager or type **setupldr** at the EFI prompt.

3. On the headless console, at the SAC> prompt, type **cmd**.

4. Press the **Esc+Tab** keys to switch to the new command prompt channel.

5. Start the installation menu by typing **txtrestore**.

6. Select the partition size.

7. Wait for the restore to finish.

8. Use the instructions provided on the screen on how to restart the computer.

9. On the subsequent reboot wait for the SAC> prompt.

10. Press the **Esc+Tab** keys to switch to channel one. Follow the on-screen instructions.

14. Click **OK**, at the Thanks for choosing Hewlett Packard dialog box. (This box automatically disappears in 60 seconds.)

15. Click **Yes** at the reboot server dialog box. The server reboots to the EFI Boot manager then the server boots automatically to Windows.

16. Press the **Ctrl+Alt+Del** keys. Enter the password to login as an Administrator.

17. Double-click **Online Reference**.

18. Read the information provided here. If desired, you can install optional utilities from this section.

FOR CELL-BASED SYSTEMS: Step 19 is critical.

19. For maximum performance, HP recommends setting the memory in CLM (Cell Local Memory) mode using ParCLI. Refer to the *NPartition Command Line Interface (ParCLI) Installation and Troubleshooting Guide for Windows and the nPartition Management for HP Integrity Servers using Microsoft® Windows® guides* for detailed instructions.

HP Insight Management Tools

The Insight Management Suite provides a comprehensive set of offerings that simplify and improve how enterprises of all sizes manage IT resources. The Insight Management Suite includes leading software and hardware features, tools, and utilities, as well as services and partnerships. Shipping with every HP ProLiant and Integrity server, the Insight Management Suite simplifies IT management in today's dynamic, 24-7 computing environments. For a complete list of Insight Management products and information, go to

http://www.hp.com/servers/manage

HP Insight Management Agents

HP Insight Management Agents provide the instrumentation that enables fault, and configuration management. The HP Insight Management Agents provide status and direct access to in-depth subsystem information. The HP Insight Management Agents for Microsoft Windows Server 2003 support the HP Integrity servers.

SNMP (Simple Network Management Protocol) needs to be installed before the agents are installed. You can install the SNMP service by using the Microsoft Windows CD-ROM through the Add/Remove programs utility.

NOTE: These agents are **not** located on the HP Systems Insight Manager CD-ROM. They are only located on the Smart Setup media.

To install the HP Insight Management Agents manually, using the HP Smart Setup media:

1. With the OS running, insert the Smart Setup media.
2. Click **Software and Drivers** for the server model.
3. Click **HP Insight Management Agents**.
4. Click on the title link.
5. Double-click on the installation package to start agent installation.

HP Systems Insight Manager

HP Systems Insight Manager is the central management software to maximize system uptime and to provide powerful monitoring and control. HP Systems Insight Manager delivers pre-failure alerting for servers ensuring potential server failures are detected before they result in unplanned system downtime. HP Systems Insight Manager also provides inventory reporting capabilities that dramatically reduce the time and effort required to track server assets and helps systems administrators make educated decisions about which system may require hardware upgrades or replacement. Also, HP Systems Insight Manager is an effective tool for managing the HP desktops and notebooks as well as non-HP devices instrumented to SNMP or DMI.

NOTE: HP Systems Insight Manager cannot be installed on HP Integrity servers. It can only be installed on an IA-32 system.

Services and Support

HP offers a complete choice of services to ensure the success of the Integrity server deployment program, such as:

- **Planning**—Experts help you determine the best strategy.
- **Porting and Migration**—Skilled assistance eases transition.
- **Implementation**—Experienced programs put the plans in action.
- **Support**—Ongoing care ensures success.
- **Education Services**—Learn from the co-inventor of Itanium®.

For more information on services and support, go to

http://www.hp.com/support/itaniumservers

HP recommends that customers sign-up and register for alerts and notification. HP driver and support alerts will keep you up-to-date with information customized to your product and frequency needs. Go to

http://www.hp.com/go/subscriberschoice

HP recommends that customers sign-up for the Microsoft security bulletin notification service at

http://www.microsoft.com/technet/default.mspx

HP recommends that customers use the Microsoft "Windows Update" feature to keep their system secure. Please go to

http://windowsupdate.microsoft.com