

Support Note for SUSE LINUX Enterprise Server 9 Service Pack 3 for the Intel Itanium 2 Processor Family

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Support Note for SUSE LINUX Enterprise Server 9 Service Pack 3 for the Itanium® Processor Family

Announcement

Hewlett-Packard has certified SUSE LINUX Enterprise Server 9 (SLES 9) Service Pack 3 (SP3) (kernel version 2.6.5-7.244, glibc 2.3.3-98.61) on HP Integrity servers, which are based on the Intel Itanium® 2-based processor. Use the HP Enablement Kit for Linux to prepare your server for operating system installation. It will prompt you to insert operating system CDs when ready.

This Support Note provides instructions for using the HP Enablement Kit for Linux, explains how to get updates from SUSE LINUX Maintenance Web, and lists issues and known problems with SLES 9 SP3 for the Itanium Processor Family on HP Itanium 2-based Servers.

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SLES 9 on Integrity Servers

Hewlett-Packard has certified SLES 9 SP 3 for the Itanium Processor Family (kernel version 2.6.5-7.244, glibc 2.3.3-98.6) on Integrity servers.

Using the HP Enablement Kit To Prepare For Operating System Installation

The HP Enablement Kit for Linux ships with your system hardware and is also available for free download under the **Linux** link at <http://www.software.hp.com>. The enablement kit prepares your system for operating system installation and prompts you to insert operating system CDs when ready. For detailed instructions, see *Installing Your Operating System* (page 6) of this document and refer to the HP Enablement Kit for Linux CD Booklet.

Downloading the SUSE Linux Enterprise Server

The SUSE Linux Enterprise Server is available for download for each available platform, either as four CD ISO images or one DVD ISO image. To download, perform these steps:

1. Register and log in at the following Web site:
<http://www.novell.com/reg>
2. Click on **downloads** and then select **SUSE Linux Enterprise Server**.
Files with **ia64** in the name are for the Itanium platform.
3. Download the ISO images to a workstation or to a network drive.
4. Create CDs or a DVD from the ISO images.



IMPORTANT: Create the CDs or DVD using the contents of the ISO images. Do not create the CDs or DVD by burning the .iso files themselves to CD or DVD. For example, if you are using K3b to burn a CD, click **Tools>CD>Burn CD Image**, select the .iso image, then click **Burn**.

Documentation

Novell provides documentation for SLES 9 operating system installation with its installation media.

Documentation for the HP Enablement Kit for Linux, including the kit's CD booklet and Release Notes, comes with your system. The *Support Note for SUSE LINUX Enterprise Server 9 for the Itanium Processor Family* comes with your software order from HP. These documents, along with the *SystemImager* manual and the *Installing HP Insight Management Agents on Integrity Servers Running Linux* manual, are also available at the following Web site:

<http://www.docs.hp.com/linux>

Installing Your Operating System

Before using the SLES 10 installation media, use the HP Smart Setup EBSU application and the Linux Installer media to load the operating system files on the server. After installation, set up the system and update it with the latest firmware, drivers, and patches. For details about installation procedures, see the *HP Integrity Essentials Foundation Pack for Linux User's Guide*.

Recovering your operating system

The HP Enablement Kit for Linux CD ships with your Integrity server. Please contact your HP sales representative to obtain the enablement kit if it is not with your order. You can download the HP Enablement Kit for Linux and updates for free from the **Linux** link at the following Web site:

<http://www.software.hp.com>

Registering Software and Getting Updates from the SUSE LINUX Maintenance Web

Registering Software

1. From <http://www.novell.com/linux/suse/portal>, click the **sign up here** link under the "Get new account" heading to create a SUSE Portal Login and password.
2. There is then an *Activation/Registration* link on that page. This is also the link to access the patch support database.

Getting Updates from the SUSE LINUX Maintenance Web

Option 1 - Via the Web

1. Go to <http://www.novell.com/linux/suse/portal> and click the **Patch Database** link on the Support menu.
2. Select **by product**, then find your Novell product in the list and select it (it should be something like "SUSE LINUX Enterprise Server for IA64 (ia64).")
3. Select the desired update. On the resulting page, select the package link that applies to your distribution to download the package.



NOTE: Not all packages are available for every operating system version.

Option 2 -Via the Network using YaST Online Update (YOU)

1. If running behind a firewall, you may need to modify your proxy settings. This can be done from YaST.
2. To access YOU:
 - a. Type you and press **Enter**.
 - b. On the "Welcome to YaST Online" screen, use the **Tab** key to highlight an option and press the space bar to select. When done making your selections, tab to **Next** at the bottom of the screen and press **Enter**.
 - c. Select and install any desired updates.



NOTE: When presented with a list of packages to update, a plus (+) sign to the left of the package indicates “select this package for update”.

Issues and Known Problems

1. HP recommends backing up all data and performing a new installation of SLES, rather than upgrading from a prior version.
2. HP does not recommend using the HP Integrity Integrated Lights-Out (iLO 2) remote text console, or virtual KVM (vKVM) console, when installing Linux.
3. You may want to consider removing disk labels on your disks before attempting to install the operating system.
4. No support for uncertified RPM packages.

If you add uncertified RPMs to the operating system (that is, from an open source development repository), it will not be supported by Novell. Novell supports only RPMs bundled in supported Linux distributions for Integrity servers and official SLES Service Packs for those distributions. HP supports the Linux software it distributes.

5. No support for systems with a recompiled kernel.

Although you may recompile your kernel to change configuration parameters, HP does not support systems on which you have recompiled your kernel for any other reason, e.g. for kernel source code changes.

Supported customizations:

- a. Modifying configuration options found in `/usr/src/linux-version-versionnumber/configs` to set values or make modules static or dynamically loadable.
 - b. Changing boot-time parameters found in `/usr/src/linux/Documentation/kernel-parameters.txt` (with the kernel-source `/rpm`).
6. Before installing or booting SLES 9 on an nPartition on an rx7620, rx8620, or Integrity Superdome server, set the ACPI configuration value to `acpiconfig single-pci-domain`.
For rx7620, rx8620, or Integrity Superdome servers booting SLES 9:
 - a. At the EFI Shell prompt, type `acpiconfig single-pci-domain` and press **Enter**.
 - b. Type `reset` and press **Enter**.
 7. System is unbootable after adding new disks.

When you add new disks, the system may fail with one of the following messages:

```
init=
```

or

```
VFS root not found
```

To fix the problem:

- a. Remove any disks you've added since you last booted your system.
- b. Invoke `parted /dev/sdXwhere sdX is the disk where your root partition resides`.
- c. Use `name` command to assign forward slash (/) as a LABEL to the root file system. The `help name` from inside `parted` explains the syntax you should use, e.g. `name 1 /`
- d. Manually verify `root= "LABEL= /"` is in each image section of the `/boot/efi/SuSE/elilo.conf` file.

```
==== sample elilo.conf for mounting root partition by label ====
```

```
prompt
```

```

timeout=50
default=linux

image=vmlinuz-2.4.18-e.25smp

    label=linux
    initrd=initrd-2.4.18-e.Nsmp.img
    read-only
    root="LABEL=/"
    append="console=ttyS0,115200n8 hdd=ide-scsi"

image=vmlinuz-2.4.18-e.25
    label=linux-up
    initrd=initrd-2.4.18-e.25.img
    read-only
    root="LABEL=/"
    append="console=ttyS0,115200n8 hdd=ide-scsi"
==== sample elilo.conf for mounting root partition by label ====

```

e. Manually verify LABEL="/" entry is in the /etc/fstab.

```

===== sample fstab for mounting root device by label =====
LABEL=/          /                ext2            defaults,errors=remount-ro    1 1
/dev/hda1        /boot/efi        vfat            defaults                      0 0
none             /dev/pts         devpts         gid=5,mode=620                0 0
none             /proc            proc            defaults                       0 0
none             /dev/shm         tmpfs          defaults                       0 0
/dev/hda3        swap             swap            defaults                       0 0
/dev/hda5        /home            ext2            defaults,errors=remount-ro    0 2
/dev/cdrom       /mnt/cdrom       iso9660        noauto,owner,kudzu,ro        0 0
/dev/cdrom1     /mnt/cdrom1     iso9660        noauto,owner,kudzu,ro        0 0
===== sample fstab for mounting root device by label =====

```

8. If you want rx7620 or rx8620 server hardware to power off when the shutdown `-h` command or `poweroff` command is issued, run the `acpiconfig enable softpowerdown` command from the EFI shell and reset the nPartition to make the ACPI configuration take effect.

The normal behavior on rx7620 and rx8620 servers is for an nPartition to be made inactive (all cells are in a boot-is-blocked state) when `shutdown -h` or `poweroff` is issued from the SLES command line. This behavior is established with the `acpiconfig disable powerdown` setting, which is the normal setting for the single-pci-domain ACPI configuration.

On HP Integrity Superdome servers, an nPartition is always made inactive when halted from the operating system (for example, after `shutdown -h`), and this behavior cannot be changed.

When `softpowerdown` is enabled on an rx7620 or rx8620 server, if one nPartition is defined in the server then halting the operating system powers off the server cabinet (including all cells and I/O chassis). On an rx7620 or rx8620 server with multiple nPartitions, halting the operating system from an nPartition with `softpowerdown` enabled causes only the resources on the local nPartition to be powered off.

You can run the `acpiconfig` command with no arguments to check the current setting and the `softpowerdown` setting; however, `softpowerdown` information is displayed only when different from normal behavior.

To power on hardware that has been powered off, use the `PE` command at the management processor command menu. To make an inactive nPartition active, use the management processor `BO` command to boot the nPartition past the boot-is-blocked state.

9. HP supports up to two I/O chassis per nPartition on rx7620, rx8620, and Integrity Superdome servers running SLES 9.
10. SCSI errors and resets cause system failures. SCSI errors and resets for any reason cause system failures. For example, if your disks have a problem such as a parity or disk error that

causes a SCSI reset, the system will fail. Combining a Seagate drive with the ds2100 disk carrier causes electrical problems on the SCSI bus and subsequent reset attempts that also result in system failure. Do not use Seagate drives with this disk carrier.

11. This issue affects Linux running on the following systems: rx1600, rx1620, rx2600, rx4640, rx5670, rx7620, rx8620, and Superdome.

The Management Processor UART on these systems does not supply the Carrier Detect signal. This causes applications to hang when opening the UART device, waiting for Carrier Detect, unless they use the `O_NDELAY` or `O_NONBLOCK` flag.

For example, `echo foo > /dev/ttyS0` hangs.

This is usually not a problem because `/dev/ttyS0` is usually used as a console, the `agetty` process opens it with `O_NONBLOCK`, and processes spawned by `agetty` generally inherit the already-opened device.

Previously, a workaround was recommended for cases where the device had to be opened again, and applications observed the hang. The recommended workaround included the following steps:

- a. Add the `-L` option to the `agetty` line in the `/etc/inittab` file as show below to resolve the problem:

```
S0:1235:respawn:/sbin/agetty -L 9600 ttyS0
```

- b. After editing the file, signal the `init` process to re-read the `inittab` file with the following command:

```
kill -HUP 1
```

- c. If you are logged in to the console, then exit and log in again to restart the `agetty`.

This `inittab` workaround is included in SLES9 SP3

12. When installing SP3 from CD, if you boot off SP3 CD1, the installer enters YaST, asking to enter CD1 into the drive. The installer expects you to enter the SLES9 CD1 at this dialog, not SP3 CD1.
13. A package will fail to install if the system clock is not set properly (as indicated in Bugzilla 56902). Ensure the system clock is set properly before attempting any installs.
14. If you have a Qlogic FibreChannel card, you can obtain the latest driver for it from HP as follows:
 - a. From the page at <http://www.hp.com>, click on the "Driver Downloads" link.
 - b. Click the radio button for Download drivers and software on the Software & Driver Downloads page, type the name of the FibreChannel card in the text box, and press Enter.
 - c. Click **SUSE LINUX** under the "select operating system" heading on the specify operating system page.
 - d. Scroll down the download drivers and software page for your specified card, and click the download button for the required driver.
15. If you have a Emulex FibreChannel card, you can obtain the latest driver for it from HP as follows:
 - a. From the page at <http://www.hp.com>, click on the "Driver Downloads" link.
 - b. Click the radio button for Download drivers and software on the Software & Driver Downloads page, type the name of the FibreChannel card in the text box, and press Enter.

- c. Click **SUSE LINUX** under the "select operating system" heading on the specify operating system page.
 - d. Scroll down the download drivers and software page for your specified card, and click the download button for the required driver.
16. Customers running an rx2620 or rx4640 utilizing the Dual-Core Intel Itanium 2 processor may experience a hang during the boot of the operating system. To resolve the issue, HP recommends that customers upgrade the operating system kernel to at least version 2.6.5-7.286. This package is available from Novell, and can be retrieved using any of the methods documented in "Getting Updates from the SUSE Linux Maintenance Web".