

Deploying Debian GNU/Linux with ICE-Linux



White Paper

The Debian GNU/LINUX Distribution	2
Debian Mirrors	2
Debian Distribution	3
Debian Install Media	3
Prerequisites	4
Modifying Installation Packages	4
Root Login	5
Providing PSP-like Support	5
Using the HP SIM – ICE-Linux Plug-In to Install Debian	5
Step 1: Add a Debian 4.0 Source to Your Repository	6
Step 2: Copy or Move the Debian ISO Images into the Directory	6
Step 3: Create Directories and Copy ISO Images	6
Step 4: Download the Debian Installer	7
Step 5: Enable the Debian Installer to Accept a MAC Address	8
Step 6: Create the preseed.cfg Configuration File	9
Step 7: Create Archive for the Kernel	9
Step 8: Modify ICE-Linux JBOSS Web Server	9
Step 9: Add Debian 4.0 Installation Configuration File	10
Step 10: Create a Default Custom OS Configuration File	10
Step 11: Create Agentless Installation Association Configuration Script	13
Step 12: Installing Debian4-i386 on a Target System	15
For more information	17

The Debian GNU/LINUX Distribution

Debian® GNU/Linux is a collection of GNU applications compiled and distributed with the Linux® kernel. Together they are called a *dist*, or distribution, of the Linux operating system.

Debian GNU/Linux is unique. It is among the most complex of the Linux distributions because of its flexibility in providing distributions for other hardware architectures and operating system kernels. It also standardizes software packaging on all these hardware platforms and kernels while deliberately presenting the least amount of upstream source code management and code customization. Both the upstream source code maintainers and the users of code from a particular source are often most familiar with the defaults provided for their code.

Therefore, there are few surprises when installing a Debian Linux software package. It generally just works the way the programmer intended and works identically on different hardware platforms and under different kernels.

So while Debian provides maximum flexibility and a minimal approach to software management, it does provide a means for collecting useful information from a user when a software package is installed.

Optionally, when a software package is created for a Debian distribution, it can include a list of questions or a template for the `debconf` system and a script for asking those questions. Despite its name, `debconf` is not a management or configuration system. It provides a means for a software package maintainer or writer to supply a series of questions for a user in a common user interface when a software package is installed. The `debconf` system does not use the answers to configure a software package, rather the answers are saved into the `debconf` database and can be referenced by a software packages install script, if the maintainer or software package writer so chooses.

Debian Mirrors

Using an analogy, Debian is a huge spinning accretion disk like that surrounding a large black hole. It tends to absorb the code from other projects and pack them into packages for distribution. The Debian logo is a spinning spiral, which even suggests as much.

To make the collection and distribution of Debian possible, it is founded on the concept of a distribution mirror, which is a common place to collect and share software packages. Local Mirrors are copies of all the shared files from one machine to another on the Internet.

Debian organizes its mirror in a particular way to make sharing the files easier.

First, Debian recognizes that a mirroring program needs a list of files to copy, so it provides index files of all the files for a particular purpose and where they are located on the server. These index files are kept in directories named for their purpose. For example, the index files for Debian 3.0 are kept in the `Debian3.0` directory, and the index files for Debian 4.0 are kept in the `Debian4.0` directory. A mirroring program that wants to copy only the files for Debian 4.0 downloads the index files for Debian 4.0, and uses those files to fetch and create its local copies.

To avoid recopying the index files, the index file directories are kept in a directory named `dists` and the software packages are kept in a directory named `pools`. The software packages in `pools` are arranged in directories alphabetically beginning with the first letter in the software package name. So the `a/` directory could have packages for Debian 3.0 and Debian 4.0, but the index files know which packages are appropriate for the corresponding distribution.

Debian Distribution

Initially, Debian did not have an installer. You needed to use another operating system to partition and format a hard disk, copy files to it, install a boot loader, and reboot.

As of version 3.0 Debian has a new installer, `d-i` for Debian Installer. It comes in several forms, but is essentially a kernel, an initial RAM disk image, and a program named `Anna`. Together they bootstrap a minimal Linux installation operating system which then either prompts for user choices or reads a configuration file named `preseed.cfg` to perform the installation.

After `Anna` is invoked, it connects to an initial store called the mirror source and downloads `microdebs` to complete its feature set, then installs a minimal installation of the Debian distribution. The `Anna` program then configures the Debian package select library tool `apt` with `sources`; next it installs a default group of packages called a `task`.

For a fully automated installation, the Debian Installer can read its `preseed.cfg` file from the initial RAM disk image or retrieve it from a network source with `http`.

Both the initial mirror for `Anna` and the subsequent `apt` sources can be served from a local `http` repository.

Debian Install Media

Avoid using a network mirror; they are generally for development and organizational-level sharing of the Debian package repositories. For most people, it is sufficient and preferable to download a simple set of ISO media.

You can use BitTorrent™, Jigsaw™, HTTP, or FTP to download the ISO media. BitTorrent is the best choice for the first-time user. BitTorrent and Jigsaw each distributes the download process across many servers and sources, resulting in a faster download for the recipient and a more equitable way to share the load across many servers. HTTP and FTP do not distribute the download process and, as a consequence, are not as fast.

Jigsaw download (`jigdo`) disassembles ISO images and reuses the pieces to assemble newer ISO images while downloading only the changed packages from one release to another (the *diffs*) to make new ISO images. Thus, if you have Debian 4.0r2 ISOs and need to “freshen” them, running Jigsaw download can take those ISO images and use them to create new Debian 4.0r3 ISO images, downloading only the differences from network sources. This can result in a huge savings in time and bandwidth.

There are many ways of mirroring package repositories and all but a few use the Debian index files and cannot distinguish between packages for one distribution or another, or from one hardware platform to another.

The officially recommended method for making a Debian mirror uses a configurable script named `anonftpsync`. However, configuring it properly can be difficult and often replicates more than one distribution’s set of packages. Thus, most early attempts at creating a mirror copy far more packages than strictly necessary for the Debian distribution you want to use.

ISO media is by far the simpler and more efficient way to get what you want in the smallest amount of time possible.

Note that a complete set of ISO media entails the entire set of packages defined to be part of a version and release; it can be quite large. At present, Debian 4.0r3 contains over 18,000 packages. The CD-ROM ISO media is spread across 22 ISO images. The DVD ISO media is spread across 3 ISO images. The size of a complete set of ISO images is about 4.5 GB for each DVD, or 13.5 GB total. If you cannot afford the time to download the media, purchasing physical media online is a valid alternative, which you can update using a Jigsaw download session.

Another approach is to download only the ISO media images you need to get started — generally only the first ISO image for install and then `discover` which ISO images are required for additional packages by using the Debian online search engine.

Finally, after installation and if you have realtime access to the Internet and trust the sources, you can configure the `dselect` package library `apt` sources to download additional packages from an online Mirror. This is not a viable option if you are on a secured network or in a datacenter without Internet access and no local Mirror. Consequently, it is good to have a complete local copy of the ISO media for your Debian version.

Prerequisites

There are a number of prerequisites to the installation of Debian GNU/Linux. After the prerequisites are fulfilled, the only thing you need to change from one install target to the next is the target MAC address (media access controller hardware addresses): change it to match the MAC address of the PXE enabled Ethernet port of the target server.

Modifying Installation Packages

The `db403-agentless.cfg` configuration file is formatted for self-help, meaning you should be able to review it and comment or uncomment options to obtain the desired functionality easily at install time.

The most likely thing you would change is to choose a different `task` for the target. A `task` represents a group of packages to install and represents a familiar typical purpose for the target server. You can choose from many possible tasks, such as:

```
#tasksel tasksel/first          multiselect standard, desktop
#tasksel tasksel/first          multiselect standard, gnome-desktop
#tasksel tasksel/first          multiselect standard, kde-desktop
#tasksel tasksel/first          multiselect standard, web-server
#tasksel tasksel/first          multiselect standard, print-server
#tasksel tasksel/first          multiselect standard, dns-server
#tasksel tasksel/first          multiselect standard, file-server
#tasksel tasksel/first          multiselect standard, mail-server
#tasksel tasksel/first          multiselect standard, sql-database
#tasksel tasksel/first          multiselect standard, laptop
```

After installation, your Debian system's `apt` sources are automatically configured to use the installation source as a source for installing additional packages. This means that running the following command from a console will install any additional package that is an official part of the Debian 4.0r3 distribution:

```
# apt-get install package-name
```

Some users might prefer to use the new `aptitude` package browsing, search, and installation tool for picking individual or related groups of packages and resolving dependencies automatically.

Root Login

By default, the Gnome desktop does not allow the root user to login from the GNOME Display Manager (GDM) console. You must login as the user `student` with password `student`, then proceed to elevate your privilege level to root using `su` or `sudo`.

If you want to enable a root login from the GDM console, choose **Desktop** (from the upper taskbar)→ **Administration**→**Login Window**→**Security** tab. Check the box labeled **Allow local system administrator login** and close the window. You should be able to log out and log back in as the root user with the password `root`.

If you are using the X Window System on the desktop through the iLO Remote Console, you will find it helpful to open a console and enter the following command to synchronize you desktop mouse pointer with the VNC console mouse pointer:

```
# xset m 1 1
```

Add the command to your `Xsession` startup file to make it a permanent part of your `Xsession` startup procedure.

Providing PSP-like Support

The `db4.sh` script automatically configures the `net-snmp` agent to permit HP Systems Insight Manager (SIM) to connect and obtain enough information to create and maintain an association with the server's management processor. The management processor must have already been discovered by the HP SIM through either a Manual Add or a normal Discovery scan of the management processors IP address range.

There is no ProLiant Support Pack distributed for the Debian operating system at this time; thus, enhanced performance and hardware management agent functionality are not available. However, this *agentless* install is sufficient to maintain the association between a server and its management agent, which will enable you to collect some SNMP data and restart the server or perform SSH management tasks.

Using the HP SIM – ICE-Linux Plug-In to Install Debian

This section provides a brief introduction to setting up and deploying Debian 4.0 to one ProLiant server; the procedure consists of the following steps, each step is described in its own section:

[Step 1: Add a Debian 4.0 Source to Your Repository](#)

[Step 2: Copy or Move the Debian ISO Images into the Directory](#)

[Step 3: Create Directories and Copy ISO Images](#)

[Step 4: Download the Debian Installer](#)

[Step 5: Enable the Debian Installer to Accept a MAC Address](#)

[Step 6: Edit the `preseed.cfg` Configuration File](#)

[Step 7: Create Archive for the Kernel](#)

[Step 8: Modify ICE-Linux JBOSS Web Server](#)

[Step 9: Add Debian 4.0 Installation Configuration File](#)

[Step 10: Create a Default Custom OS `preseed.cfg` Configuration File](#)

[Step 11: Create Agentless Installation Association Configuration Script](#)

[Step 12: Installing Debian4-i386 on a Target System](#)

Step 1: Add a Debian 4.0 Source to Your Repository

Use the following procedure to add a Debian 4.0 source to your repository.

1. If your `/opt/repository/custom` directory is mounted from an NFS share, unmount it.
2. Use either BitTorrent or Jigdo to collect the three DVD ISO images for Debian 4.0.
3. Start HP SIM.
4. Select the HP SIM **Options** → **Manage ICE-Linux Repository...** menu item.
5. Select **New**.
6. Select **Custom OS** for the **Item type** menu item, then select **Next>**.
7. Enter the following information for each text field:

```
Item type:      Custom OS
Name           Debian4-i386
Description    Debian Etch Release
Vendor        GNU
Version       4.0 Release 3
Architecture  i386
Item location  Local
Kernel name   Linux
RAM disk name  initrd.gz,Debian4-i386Boot/iram1.gz
```

8. Select **Save**.
9. Select **Ok**.

Step 2: Copy or Move the Debian ISO Images into the Directory

Copy or move the DVD ISO images for Debian 4.0 into the `/opt/repository/custom/Debian4-i386` directory.

Step 3: Create Directories and Copy ISO Images

In general, loopback mounting is possible; however, the default kernel of many distributions only permits 8 loopback mounts at a time. Reserve these resources for other purposes:

HP recommends that you create directories and copy the contents of the ISO images into them as in the following procedure:

1. Change to the directory specified in [Step 2: Copy or Move the Debian ISO Images into the Directory](#):

```
# cd /opt/repository/custom/Debian4-i386
```

2. Make the directories for the mountpoint for the DVD and for the contents of the DVDs:

```
# mkdir cdrom ; mkdir DVD{1,2,3}
```

3. Mount the first DVD:

```
# mount -o loop debian-40r3-i386-DVD-1.iso cdrom
```

4. Copy the contents of the DVD into the DVD1 directory:

```
# cp -ar cdrom/* DVD1
```

5. Unmount the first DVD:

```
# umount cdrom
```

6. Mount the second DVD:

```
# mount -o loop debian-40r3-i386-DVD-2.iso cdrom
```

7. Copy the contents of the DVD into the DVD2 directory:

```
# cp -ar cdrom/* DVD2
```

8. Unmount the second DVD:

```
# umount cdrom
```

9. Mount the third DVD:

```
# mount -o loop debian-40r3-i386-DVD-3.iso cdrom
```

10. Copy the contents of the DVD into the DVD2 directory:

```
# cp -ar cdrom/* DVD3
```

11. Unmount the third DVD:

```
# umount cdrom
```

Step 4: Download the Debian Installer

The netboot version of the Debian installer is not on the ISO media. You must download it and copy it to the `/opt/repository/boot/Debian4-i386Boot` directory.

- A plain text mode version of the installer or a graphical installer version is available from the following site:

<http://http.us.debian.org/debian/dists/etch/main/installer-i386/current/images/netboot>

- To obtain the graphical version, run the following commands:

```
# cd /opt/repository/boot/Debian4-i386Boot
```

```
# wget http://http.us.debian.org/debian/dists/etch/main/installer-i386/current/images/netboot/gtk/debian-installer/i386/linux
```

```
# wget http://http.us.debian.org/debian/dists/etch/main/installer-i386/current/images/netboot/gtk/debian-installer/i386/initrd.gz
```

Step 5: Enable the Debian Installer to Accept a MAC Address

Typically, a server has many network interfaces. The Debian installer expects a kernel name for the Ethernet interface to use for installation. The kernel does not always give the same kernel name to an Ethernet interface from one boot cycle to the next. MACs for Ethernet interfaces are used to distinguish one Ethernet interface from another consistently across boot cycles. To enable the Debian Installer to accept a MAC address for the network interface to use for installation, create a special file called `iram1.gz`; the procedure follows:

1. Change to the `Debian4-i386Boot` directory:

```
# cd /opt/repository/boot/Debian4-i386Boot
```

2. Create a directory named `iram` and change to it:

```
# mkdir iram ; cd iram
```

3. Invoke the text editor of your choice to create a file named `macfinder`.
4. Copy the following bash script and paste it into the text editor's buffer.

```
#!/bin/bash
# find the mac address in kernel args
mac=`expr "$(cat /proc/cmdline)" : ".*xdevice=([ ]*\)"`

# load the net drivers
for i in pcnet32 e1000 bnx2 tg3
do
    modprobe $i
done

# find the device with the mac address
eth=`ifconfig -a | grep -i $mac | cut -d" " -f1`

# find the preseed url in kernel args
url=`expr "$(cat /proc/cmdline)" : ".*preseed=([ ]*\)"`
echo "-----"
echo "Hewlett Packard - DEBN4 mac finder"
echo "-----"
echo "mac = $mac"
echo "eth = $eth"
echo "url = $url"
echo "-----"

# set the interface to use
echo "d-i netcfg/choose_interface    select $eth" >> preseed.cfg

# fetch network preseed cfg
echo "d-i preseed/url                string $url" >> preseed.cfg

# reset the init cmd
init='busybox init'
# start the original initrd init process
exec $init
```

5. Save the `macfinder` file and exit the text editor.

Step 6: Create the preseed.cfg Configuration File

In this section you create a precursor preseed configuration file.

1. Invoke the text editor of your choice.
2. Copy the following text.

```
# locale
#####
d-i debian-installer/locale    string en_US
d-i console-keymaps-at/keymap  select us

# network
#####
d-i netcfg/wireless_wep        string
d-i netcfg/get_nameservers     string
d-i netcfg/dhcp_timeout        text 60
```

3. Paste the text into the text editor buffer.
4. Save it with the file name `preseed.cfg`.
5. Exit the text editor.

Step 7: Create Archive for the Kernel

Create an archive of the files the kernel will know how to open, and which will be integrated with the original `initramfs` file named `initrd.gz` at kernel start time:

1. Change to the `iram` directory:

```
# cd /opt/repository/boot/Debian4-i386Boot/iram
```

2. Extend executable permission to the `macfinder` file:

```
# chmod +x macfinder
```

3. Create the archive file and compress it with the GZIP program:

```
# find . | cpio -o -H newc | gzip > ../iram1.gz
```

Step 8: Modify ICE-Linux JBOSS Web Server

Modify the ICE Linux JBoss web server to support 1000 connections per thread before restarting a web server connection with a client. Also, configure the JBoss web server to run on port 80 by modifying the port in the `/opt/mx/icle/icle.properties` file (the JBoss web server does not need to run on port 80 if the URL addresses in these scripts are appended with colon and port 60000, the JBoss web server default port).

Use the following procedure:

1. Stop HP SIM with the `mxstop` command.
2. Use the text editor of your choice to edit the

/opt/mx/jboss/server/icle/deploy/jboss-web.deployer/server.xml file.

3. Locate the specification for Connector Port 60000 as shown here:

```
<Connector  
port=60000
```

4. Make the following changes in the server.xml file:

- a) change the port=60000 to port=80
- b) Insert a line to assign a value of 1000 to the maxKeepAliveRequests variable. The maxKeepAliveRequests number specified is an indication of the number of packages to be installed. If you need to add a large number of additional packages, increase this value.

The following reflects the changes to the server.xml file:

```
<Connector  
port=80  
...  
maxKeepAliveRequests="1000"  
...  
>
```

5. Save the server.xml file.
6. Edit the /opt/mx/icle/icle.properties file to change the association of the REPOSITORY_HTTP_PORT variable from REPOSITORY_HTTP_PORT=60000 to REPOSITORY_HTTP_PORT=80 to match the change in step 4a.
7. Save the icle.properties file and exit the text editor.
8. Restart HP SIM with the mxstart command.

Step 9: Add Debian 4.0 Installation Configuration File

Add a Debian 4.0 Installation configuration file to your repository as follows:

1. Select the HP SIM **Options** → **Manage ICE-Linux Repository...** menu item.
2. Select **New**.
3. Select **Installation configuration file (Kickstart/AutoYaST)** for the **Item type** menu item, then select **Next>**.
4. Enter the following information for each text field:

Item type:	Installation configuration file
Name	db403-agentless
Description	Debian Etch Release

5. Select **Custom OS** for the **Operating Systems** menu.
6. Select **Save**.
7. Select **Ok**.

Step 10: Create a Default Custom OS Configuration File

Use the following procedure to create the default OS configuration file for Debian4-i386.

1. Determine the HP SIM server that provides service to the target system you want to install Debian on.

Determine the (numeric) IP address of the Ethernet port of that HP SIM server. You will need the IP address in step 5.

2. Change directory to the location in the repository for the installation configuration file added in Step 9: Add Debian 4.0 Installation Configuration File:

```
# cd /opt/repository/instconfig/db403-agentless
```

3. Use the text editor of your choice to open the db403-agentless.cfg configuration file.
4. Copy the following text and paste it into the text editor's buffer.

```
# mirror
#####
d-i mirror/country          string enter information manually
d-i mirror/http/hostname    string HP_SIM_Server_IP_Address
d-i mirror/http/directory   string /custom/Debian4-i386/DVD1/debian
d-i mirror/protocol         string http
d-i mirror/http/proxy       string
d-i mirror/suite            string stable
# partition
#####

d-i partman-auto/disk        string /dev/cciss/c0d0
#d-i partman-auto/disk      string /dev/discs/disc0/disc
d-i partman-auto/init_automatically_partition select Guided - use entire disk
d-i partman-auto/purge_lvm_from_device boolean true
d-i partman-auto/method    string regular
#d-i partman-auto/method  string lvm
#d-i partman-lvm/confirm     boolean true
d-i partman-auto/choose_recipe select All files in one partition
#                             (recommended for new users)
d-i partman/confirm_write_new_label boolean true
d-i partman/choose_partition select Finish partitioning and
write changes to disk
d-i partman/confirm          boolean true

# time
#####
d-i clock-setup/utc          boolean true
d-i time/zone                string US/Central

# accounts
#####
# root
d-i passwd/root-login        boolean true
d-i passwd/root-password     password root
d-i passwd/root-password-again password root

# mortal
d-i passwd/user-fullname     string James T. Kirk
d-i passwd/username          string student
d-i passwd/user-password     password student
d-i passwd/user-password-again password student

# apt
#####
d-i apt-setup/local0/comment string debian-40r3-i386-DVD-1
d-i apt-setup/local0/repository string http://HP_SIM_Server_IP_Address/custom/
Debian4-i386/DVD1/debian stable main (continued from previous line)

d-i apt-setup/local1/comment string debian-40r3-i386-DVD-2
d-i apt-setup/local1/repository string http://HP_SIM_Server_IP_Address/custom/
```

```

Debian4-i386/DVD2/debian stable main (continued from previous line)

d-i apt-setup/local2/comment      string debian-40r3-i386-DVD-3
d-i apt-setup/local2/repository  string http://HP_SIM_Server_IP_Address/custom/
Debian4-i386/DVD3/debian stable main (continued from previous line)

d-i apt-setup/security_host      string
d-i apt-setup/security-updates  boolean false

d-i debian-installer/allow_unauthenticated string true

# popcon
#####
popularity-contest popularity-contest/participate  boolean false

# task
#####
tasksel tasksel/first            multiselect standard, desktop
#tasksel tasksel/first            multiselect standard, gnome-desktop
#tasksel tasksel/first            multiselect standard, kde-desktop
#tasksel tasksel/first            multiselect standard, web-server
#tasksel tasksel/first            multiselect standard, print-server
#tasksel tasksel/first            multiselect standard, dns-server
#tasksel tasksel/first            multiselect standard, file-server
#tasksel tasksel/first            multiselect standard, mail-server
#tasksel tasksel/first            multiselect standard, sql-database
#tasksel tasksel/first            multiselect standard, laptop

# pkgs
#####
d-i pkgselect/include            string snmpd

# xorg
#####
xserver-xorg xserver-xorg/autodetect_monitor          boolean true
xserver-xorg xserver-xorg/autodetect_video_card       boolean false
xserver-xorg xserver-xorg/config/device/driver        select ati
xserver-xorg xserver-xorg/config/device/identifier   string ATI
Technologies Inc ES1000 rev 2
xserver-xorg xserver-xorg/config/monitor/selection-method select medium
xserver-xorg xserver-xorg/config/monitor/mode-list    select 1024x768 @ 60
Hz
xserver-xorg xserver-xorg/config/display/modes        multiselect 1024x768,
800x600

# grub
#####
d-i grub-installer/with_other_os  boolean true

# reboot
#####
d-i finish-install/reboot_in_progress note

# postscript
#####
d-i preseed/late_command string in-target chroot /target ; in-target wget
http://HP_SIM_Server_IP_Address/instconfig/db403-agentless/db4.sh ; in-target chmod +x
db4.sh; in-target sh db4.sh (continued from previous line)
#####

```

5. Edit the five instances of `HP_SIM_Server_IP_Address`, replacing it with the IP address of the HP SIM Console Management Server (CMS) you obtained in step 1; these instances are highlighted to help you locate them.
6. Edit the four instances of continued lines. Ensure that the second of the two lines is joined with the first and remove the text *(continued from previous line)*.
7. Save the file and exit the text editor.

Step 11: Create Agentless Installation Association Configuration Script

Debian GNU/Linux is an operating system that is not supported by the ProLiant Service Pack (PSP), so you need to create the agentless installation association configuration script. For more information on this topic, see the white paper titled *Setting up Managed Systems in ICE-Linux without PSPs*.

Follow this procedure to create an agentless installation association configuration script named `db4.sh`:

1. Determine the IP address of the Ethernet port of the HP SIM server. You will need the IP address in step 5.

2. Change directory to the space for the Debian OS in the Repository:

```
# cd /opt/repository/instconfig/db403-agentless
```

3. Use the text editor of your choice to create a file named `db4.sh`.
4. Copy the following text and paste it to the text editor buffer.

```
#!/bin/sh

#####
#
# Debian - remove snmpd bind to loopback only
#
sed -i 's/ 127.0.0.1//' /etc/default/snmpd

#####
#
# Debian - add 5 second delay to snmpd start
#         network isn't ready when snmpd fires
#         coldstart trap
#
sed -i '/ start)/ a\sleep 5' /etc/init.d/snmpd

#####
#
# Debian - set gdm mouse to no acceleration
#
sed -i '/^exit 0/ i\xset m 1 1' /etc/gdm/Init/Default

#####
#
# Get Info for HP SIM
#
set `dmidecode | grep "Product Name"`
ProductNM=${3} "${4}

set `dmidecode | grep "Product ID"`
ProductID=${5:0:6}

set `dmidecode | grep "Serial Number"`
SerialNum=${3:0:11}

#####
#
```

```

# Make some Info for HP SIM
#
HostGUID=$ProductID$SerialNum

#####
# Determine OS for HP SIM
#
osname="Debian 4.0 r3 $arch"
#####
#
# Assign the OID Info
#

cat <<EOF2 > /etc/snmp/CntrlrAgentLocation.sh
#!/bin/sh
echo .1.3.6.1.4.1.232.9.2.2.10.0
echo integer
echo 1
EOF2

cat <<EOF3 > /etc/snmp/ProductName.sh
#!/bin/sh
echo .1.3.6.1.4.1.232.2.2.4.2.0
echo string
echo "$ProductNM"
EOF3

cat <<EOF4 > /etc/snmp/MibStatusArray.sh
#!/bin/sh
echo .1.3.6.1.4.1.232.11.2.10.1.0
echo octet_str
echo "01 02 08 00 00 02 00 00 00 01 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 02 00 00 00 02
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 00
00 00 00 00 00 00 00 00 00"
EOF4

cat <<EOF5 > /etc/snmp/HostGUID.sh
#!/bin/sh
echo .1.3.6.1.4.1.232.11.2.10.3.0
echo string
echo "$HostGUID"
EOF5

cat <<EOF6 > /etc/snmp/OsName.sh
#!/bin/sh
echo .1.3.6.1.4.1.232.11.2.2.1.0
echo string
echo "$osname"
EOF6

chmod +x /etc/snmp/CntrlrAgentLocation.sh
chmod +x /etc/snmp/ProductName.sh
chmod +x /etc/snmp/MibStatusArray.sh
chmod +x /etc/snmp/HostGUID.sh
chmod +x /etc/snmp/OsName.sh

```

```

#####
#
# Configure SNMP to serve the Info
#

#####
#
# HP SIM address
#
HPSIM= "HP_SIM_Server_IP_Address"

cat - /etc/snmp/snmpd.conf <<EOF > /etc/snmp/snmpd.conf.new
#####
#
# HP ICELX authorization
#
trapsink $HPSIM
rocommunity public $HPSIM
rocommunity 127.0.0.1

#####
#
# HP ICELX Overrides
#
pass .1.3.6.1.4.1.232.9.2.2.10.0 /etc/snmp/CntrlrAgentLocation.sh
pass .1.3.6.1.4.1.232.2.2.4.2.0 /etc/snmp/ProductName.sh
pass .1.3.6.1.4.1.232.11.2.10.1.0 /etc/snmp/MibStatusArray.sh
pass .1.3.6.1.4.1.232.11.2.10.3.0 /etc/snmp/HostGUID.sh
pass .1.3.6.1.4.1.232.11.2.2.1.0 /etc/snmp/OsName.sh
EOF

mv /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.old
mv /etc/snmp/snmpd.conf.new /etc/snmp/snmpd.conf

```

5. Replace the instance of *HP_SIM_Server_IP_Address* with the IP address of the HP SIM server you found in Step 1. It is highlighted to help you locate it.
6. Save the file and exit the text editor.

Step 12: Installing Debian4-i386 on a Target System

You can now install the Debian4-i386 operating system on a target managed system. The instructions for deploying an operating system to a target managed system are in the section of the *HP Insight Control Environment for Linux User's Guide* titled *Generic Procedure for Deploying an OS to One or More Managed Systems* provides the instructions for deploying an operating system. This section supplements the procedure in that Guide.

You will need the following information before you begin:

- The (numeric) IP address of the Ethernet port of the HP SIM server.
 - Note:** Sometimes the system does not obtain a valid DHCP address the first time the system is booted. In this case, reboot the system to obtain a valid DHCP address.

- The MAC address of the target managed system.

You can obtain the MAC address for the NIC selected for PXE boot in the BIOS screen through the iLO console, or you can get a list of possible MAC addresses from the main iLO web page.

Follow the procedure to deploy an OS in the *HP Insight Control Environment for Linux User's Guide* with the following modifications:

- Specify `Debian4-i386` when you are prompted to select the operating system.
- Specify the following kernel append line. Note that, for clarity, the kernel append line is presented on four lines, one for each of the variables. You will need to substitute the appropriate values for the `MAC_Addr` and the `HP_SIM_Server_IP_Address` based on the MAC address of the NIC to PXE boot the target system and the IP address of the HP SIM server, respectively.

```
DEBCONF_PRIORITY=critical
preseed=http://HP_SIM_Server_IP_Address/instconfig/db403-agentless/db403-agentless.cfg
xdevice=MAC_Addr
init=/macfinder vga=788 --
```

For more information

www.hp.com/go/ice-linux

www.debian.org (Debian GNU/Linux)

© 2008 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

Itanium is a trademark or registered trademark of Intel Corporation or its subsidiaries in the United States and other countries.

BitTorrent is a trademark of BitTorrent, Inc.

Debian is a registered trademark of Software in the Public Interest, Inc.

Linux is a U.S. registered trademark of Linus Torvalds.

Red Hat and RPM are registered trademarks of Red Hat, Inc.

