

Linux Access Gateway on Red Hat* Installation Guide

Novell® Access Manager

3.1 SP1

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About This Guide

This guide describes the installation procedure and prerequisites to install the Novell® Access Manager Linux Access Gateway on Red Hat Enterprise Linux Server (RHEL). This guide has the following sections:

- ♦ Chapter 1, “Installing and Configuring Linux Access Gateway on RHEL,” on page 9
- ♦ Chapter 2, “Upgrading the Linux Access Gateway on RHEL,” on page 13
- ♦ Chapter 3, “Additional Information on Installing And Configuring,” on page 15
- ♦ Chapter 4, “Troubleshooting,” on page 39
- ♦ Appendix A, “Additional Information,” on page 41

Audience

This guide is intended for administrators who want to install the Novell Access Manager Linux Access Gateway on an existing RHEL Server.

Additional Documentation

This guide should be considered as an addendum to the existing Novell Access Manager documentation, which is available at the *Access Manager documentation Web site* (<http://www.novell.com/documentation/novellaccessmanager31/index.html>).

- ♦ *Novell Access Manager 3.1 Installation Guide* (<http://www.novell.com/documentation/novellaccessmanager31/installation/?page=/documentation/novellaccessmanager31/installation/data/bookinfo.html>)
- ♦ *Novell Access Manager 3.1 Basic Setup Guide* (<http://www.novell.com/documentation/novellaccessmanager31/basicconfig/?page=/documentation/novellaccessmanager31/basicconfig/data/bookinfo.html>)
- ♦ *Novell Access Manager 3.1 Access Gateway Guide* (<http://www.novell.com/documentation/novellaccessmanager31/accessgateway/?page=/documentation/novellaccessmanager31/accessgateway/data/bookinfo.html>)
- ♦ *Novell Access Manager 3.1 Identity Server Guide* (<http://www.novell.com/documentation/novellaccessmanager31/identityserver/?page=/documentation/novellaccessmanager31/identityserver/data/bookinfo.html>)
- ♦ *Novell Access Manager 3.1 Administration Console Guide* (<http://www.novell.com/documentation/novellaccessmanager31/adminconsole/?page=/documentation/novellaccessmanager31/adminconsole/data/bookinfo.html>)

Documentation Conventions

In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

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When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux or UNIX, should use forward slashes as required by your software.

Installing and Configuring Linux Access Gateway on RHEL

1

The Novell® Access Manager Linux Access Gateway is a software appliance designed on the SUSE® Linux Enterprise Server (SLES) 9 SP3 kernel. In the standard installation procedure, Linux Access Gateway re-images the hard drive, embeds the Linux operating system, then configures the embedded operating system for optimal performance. However, when you have an existing RHEL server on which you want to install the Novell Access Manager Linux Access Gateway, the installation is performed against a free hard disk partition on the existing RHEL server.

The following sections describe the procedure to install Linux Access Gateway in the advanced installation mode on RHEL 5.1. For detailed instructions, see [Chapter 3, “Additional Information on Installing And Configuring,”](#) on page 15.

- [Section 1.1, “System Requirements,”](#) on page 9
- [Section 1.2, “Installing and Configuring the Linux Access Gateway on RHEL,”](#) on page 10

1.1 System Requirements

This section explains the requirements for installing the Novell Access Manager Linux Access Gateway:

- [Section 1.1.1, “Hardware Requirements,”](#) on page 9
- [Section 1.1.2, “Linux Access Gateway Network Requirements,”](#) on page 9

1.1.1 Hardware Requirements

- ☐ 3 GB memory
- ☐ Hard disk with a free partition of 100 GB--other than the / (root) partition--either as unformatted and unallocated free space or as an additional partition in the existing server.
- ☐ 3.0 GHz processor or better recommended, with 2.0 GHz as the minimum.

1.1.2 Linux Access Gateway Network Requirements

The Linux Appliance runs on SLES 9 SP3. The Linux Appliance has no software requirements.

Before proceeding with the installation, make sure you have a static IP address for your Linux Access Gateway server and an assigned DNS name (host name and domain name). You need to know the following about your network:

- ☐ The subnet mask that corresponds to the IP address of the Access Gateway.
- ☐ The IP address of the default gateway.
- ☐ The IP addresses of the DNS servers on your network. These DNS servers need to be configured to resolve the DNS name of the Access Gateway to the IP address that you assign to it.
- ☐ The IP address or DNS name of a MCP server, if you have one in your local environment.

You are prompted to enter this information during the install.

1.2 Installing and Configuring the Linux Access Gateway on RHEL

- 1 Install Linux Access Gateway in the Advanced Installation mode.
- 2 (Conditional) If you are installing Linux Access Gateway on an existing partition, other than the / (root) partition in RHEL, remove the existing partition.
- 3 Create a new extended partition with the End Cylinder value as 100 GB. Create the following partitions:
 - ♦ / (root) partition with Ext3 File system and End cylinder value of 30 GB.
 - ♦ var partition with Ext3 file system and End Cylinder value of 20 GB.
 - ♦ COS partition that uses the remaining space (50GB) on the hard disk. Select *0x68 Novell COS* as the File System ID.

For more information on removing or creating partition, see [Section 3.3, “Installing the Linux Access Gateway,” on page 16](#).

- 4 Complete the installation of Linux Access Gateway. For more information, see [Section 3.3, “Installing the Linux Access Gateway,” on page 16](#).

When the installation is completed, the hard disk is formatted, removing all data, and the partitions are created. After all the packages are installed, the system reboots in SUSE® Linux Enterprise Server (SLES) 9, and finishes the installation.

- 5 The system reboots with SLES 9.
- 6 Login to the Novell Access Manager Administration Console and verify that the Linux Access Gateway is imported. For more information, see [Section 3.5, “Verifying the Linux Access Gateway Installation on RHEL,” on page 34](#).
- 7 Complete the following hardware and system services configuration:
 - ♦ **Network Interface Configuration:** If you do not configure the network interface, the Linux Appliance setup fails. Make sure that Network configuration matches the RHEL configuration.
 - ♦ **Administration Console Configuration:** In the Administration Console Configuration screen, specify the IP address of the RHEL server as the Access Gateway IP address.

For more information on configuring, see [Section 3.4, “Configuring Hardware and System Services,” on page 27](#).

- 8 After the installation of Linux Access Gateway, the machine starts in SUSE Linux Enterprise Server (SLES) 9 SP3. To boot the machine from Red Hat, copy boot entries for Red Hat to the Linux Access Gateway machine. For more information, see [Section 3.6, “Configuring the Linux Access Gateway to Boot from RHEL,” on page 35](#).
- 9 To start the Linux Access Gateway in RHEL, login to RHEL machine as root, then do the following:
 - 9a Set SELinux to Permissive mode.
 - 9b Disable firewall.
 - 9c Copy the `rhel-lag.tar.gz` file to the RHEL machine.
 - 9d Untar the files and run the `/opt/novell/access-gateway/scripts/configure-lag.sh` script. This script mounts the partition and modifies fstab entry and syslog.

For more information, see [Section 3.7, “Starting the Linux Access Gateway from RHEL,” on page 36](#). The Linux Access Gateway service is automatically started when the machine is rebooted.

9e Specify the following command to start Linux Access Gateway:

```
/etc/init.d/novell-am-gateway start
```

- 10** Configure the Linux Access Gateway after it is installed on RHEL. For information on configuring the gateway, see the *Novell Access Manager 3.1 SPI Access Gateway Guide* (<http://www.novell.com/documentation/novellaccessmanager31/accessgateway/?page=/documentation/novellaccessmanager31/accessgateway/data/bookinfo.html>).

NOTE: If you want to add or modify the network configuration for Linux Access Gateway installed on RHEL, the procedure is different from the Linux Access Gateway installed on SUSE® Linux Enterprise Server (SLES). For more information, see [Section 3.8.1, “Configuring the New Network Interface,” on page 37](#).

Upgrading the Linux Access Gateway on RHEL

2

To upgrade the Linux Access Gateway installed on RHEL:

- 1 Log in to the RHEL machine as `root`.
- 2 Specify the following command to `chroot` to the mount point of the Linux Access Gateway in the current operating system:

```
chroot <mount point>
```

For example, if `/lag` is the mount point of Linux Access Gateway, then specify `chroot /lag`

- 3 Use the following following:

```
/chroot/lag/opt/novell/bin/lagupgrade.sh --url <protocol>://<hostname>/  
<path>/<packageName>
```

<protocol> refers to the protocol to use when downloading the RPM packages. It can be HTTP or FTP.

<hostname> refers to the address of the server from where the RPM packages can be downloaded. Enter either the IP address or the DNS hostname of the server at the prompt.

<path> refers to the path to the RPM packages.

<packageName> refers to the RPM package name.

For example, enter the following command:

```
/chroot/lag/opt/novell/bin/lagupgrade.sh --url http://10.10.10.1/publish/  
upgrades/accessgateway/31spl/lagrpms.tar.gz
```

For more information on upgrading Linux Access Gateway, see “Upgrading Novell Access Manager Components” in the *Novell Access Manager 3.1 SP1 Installation Guide* (<http://www.novell.com/documentation/novellaccessmanager31/installation/?page=/documentation/novellaccessmanager31/installation/data/bookinfo.html>).

You might see the following error after the upgrade is completed:

```
Novell Linux Access Gateway Virtualization Controller Status..running  
vmcontroller is not running  
Failed to start novell-vmc.  
Postupgrade script failed
```

Ignore this message.

- 4 Specify the following command to exit `chroot`:
- 5 To run the post upgrade script, change to the directory and run the script as follows:

To change directory:

```
cd /opt/novell/access-gateway/scripts/
```

To run the script:

```
sh post-lagupgrade.
```


Additional Information on Installing And Configuring

3

This section describes in detail the procedure to install and configure the Linux Access Gateway on RHEL. Use these section as a reference to install and configure Linux Access Gateway on RHEL.:

- [Section 3.1, “Before You Begin,” on page 15](#)
- [Section 3.2, “Installation and Disk Layout,” on page 15](#)
- [Section 3.3, “Installing the Linux Access Gateway,” on page 16](#)
- [Section 3.4, “Configuring Hardware and System Services,” on page 27](#)
- [Section 3.5, “Verifying the Linux Access Gateway Installation on RHEL,” on page 34](#)
- [Section 3.6, “Configuring the Linux Access Gateway to Boot from RHEL,” on page 35](#)
- [Section 3.7, “Starting the Linux Access Gateway from RHEL,” on page 36](#)
- [Section 3.8, “Configuring the Linux Access Gateway after It Is Installed on RHEL,” on page 37](#)

3.1 Before You Begin

- 1 Before you begin the installation, make sure that the minimum system requirements are met. For more information, see [Section 1.1, “System Requirements,” on page 9](#).
- 2 Execute the following commands to note the hard disk partition entries on the RHEL server:

```
mount  
fdisk -l  
df -h
```
- 3 (Conditional) If you are installing the Linux Access Gateway on an existing partition, comment out the entries in `/etc/fstab` for the `/lag` partition selected for the installation.

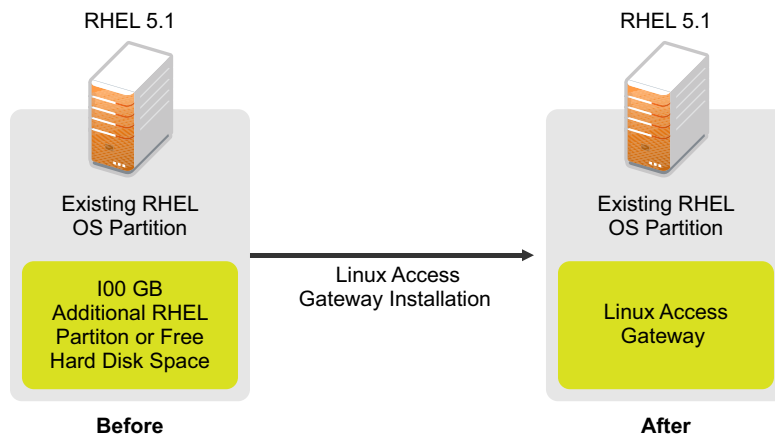
For example, the `df -h` command displays the following output, which shows `/lag` as the existing partition where you would install the Linux Access Gateway:

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/sda1	10G	1.9G	8.1G	20%	/
/dev/sda3	100G	173M	99.8G	1%	/lag
tmpfs	506M	0	506M	0%	/dev/shmf -h

3.2 Installation and Disk Layout

The hard disk layout before and after the Linux Access Gateway is installed on RHEL 5.1 is shown in [Figure 3-1 on page 16](#):

Figure 3-1 *Linux Access Gateway installation on RHEL*

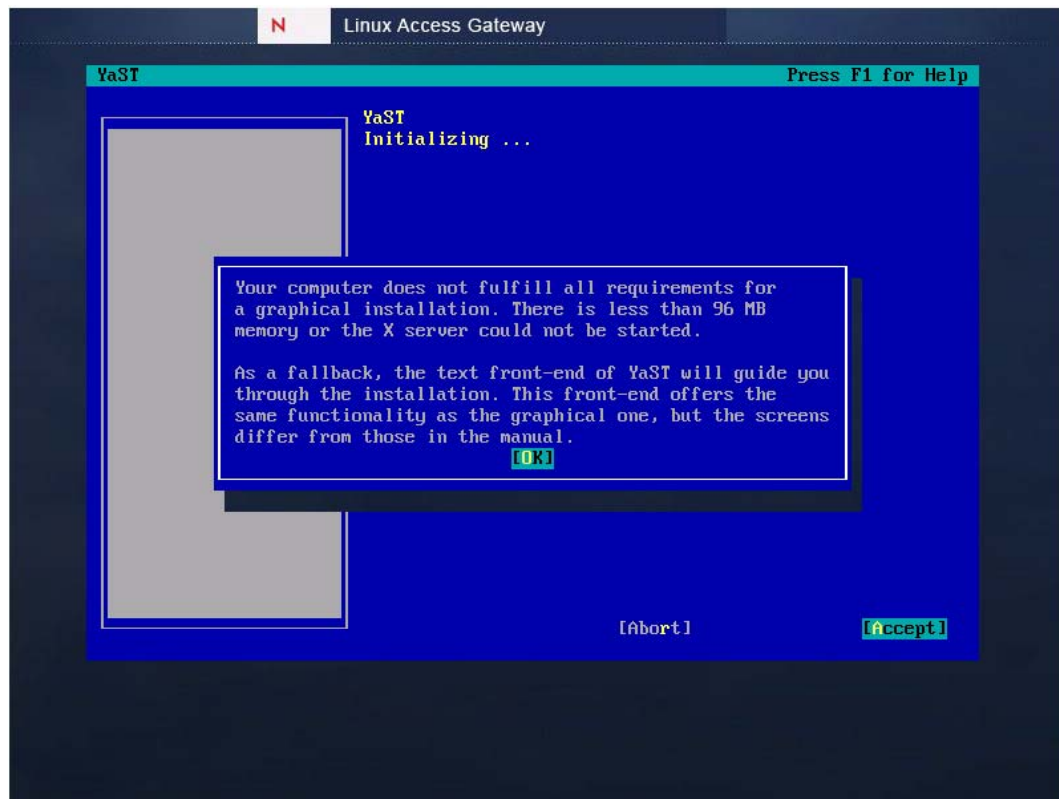


3.3 Installing the Linux Access Gateway

- 1 Restart the system. Insert the Linux Access Gateway installation CD.
The boot screen appears.
- 2 Use the down-arrow key and select *Advanced Installation*.

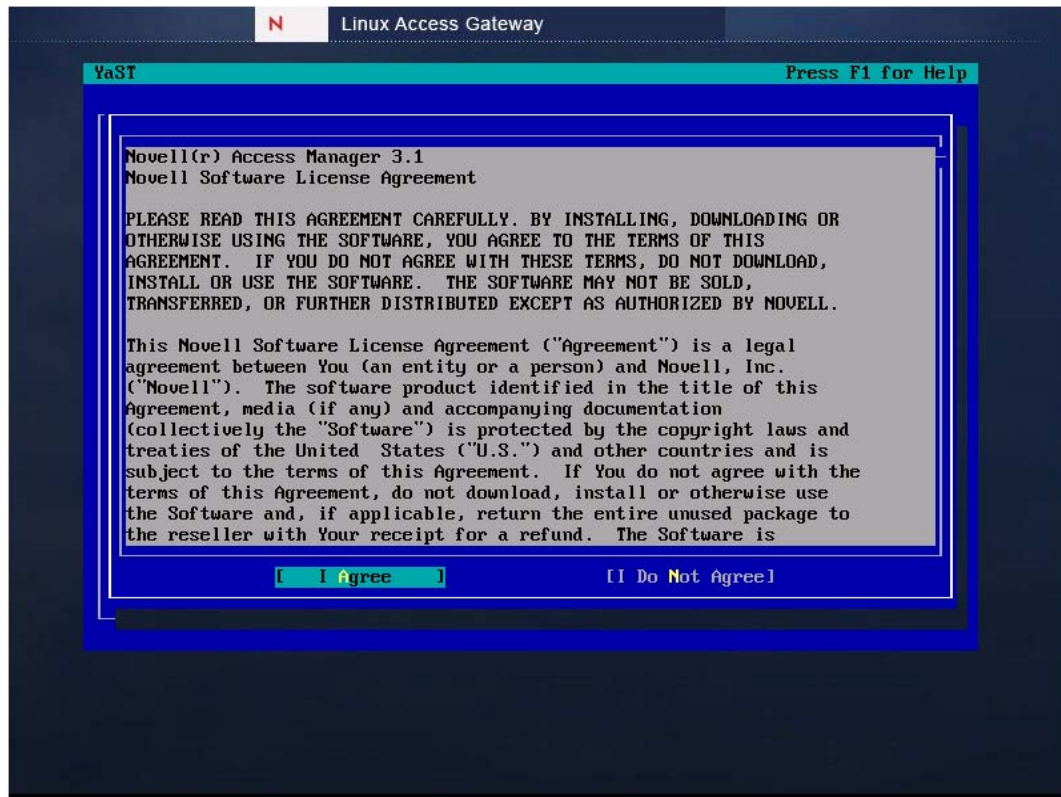


- 3 If an error message on continuing the text mode of installation is displayed, press *O* to continue with the installation.

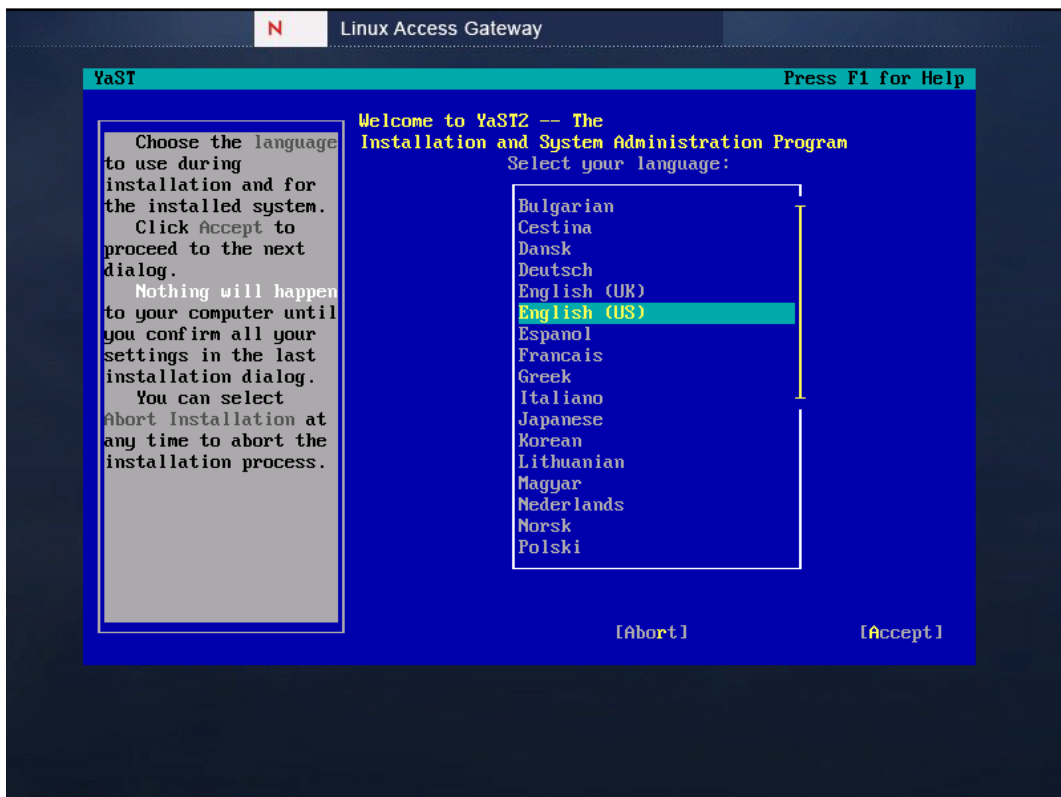


The Linux kernel loads, and the advanced installation starts and displays the Linux Access Gateway splash screen followed by the License Agreement screen.

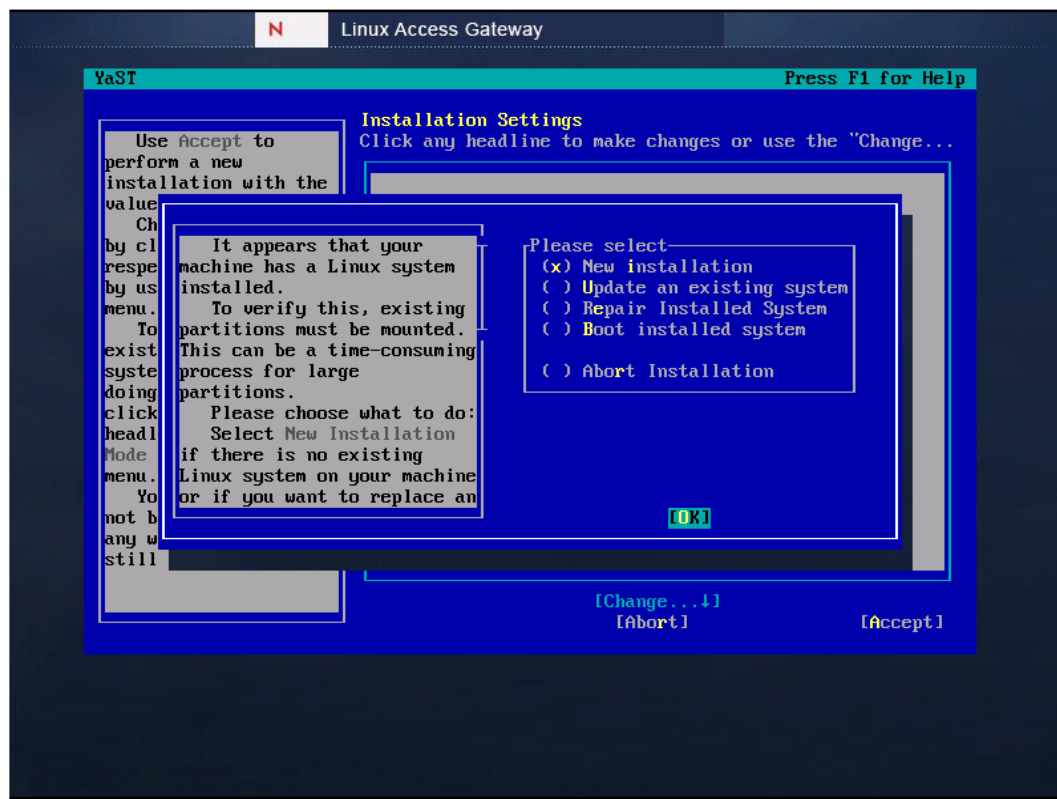
- 4 Read the agreement, then select *I Agree* to proceed.



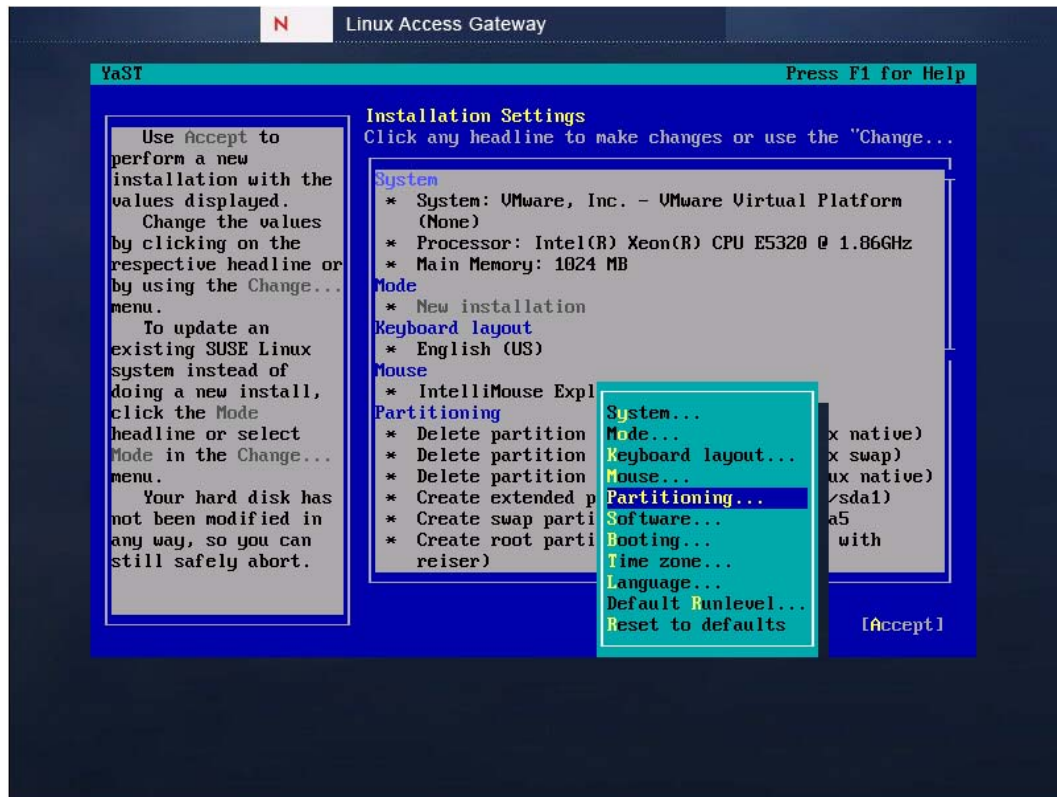
5 Select *English (US)* on the Language selection screen, then select *Accept*.



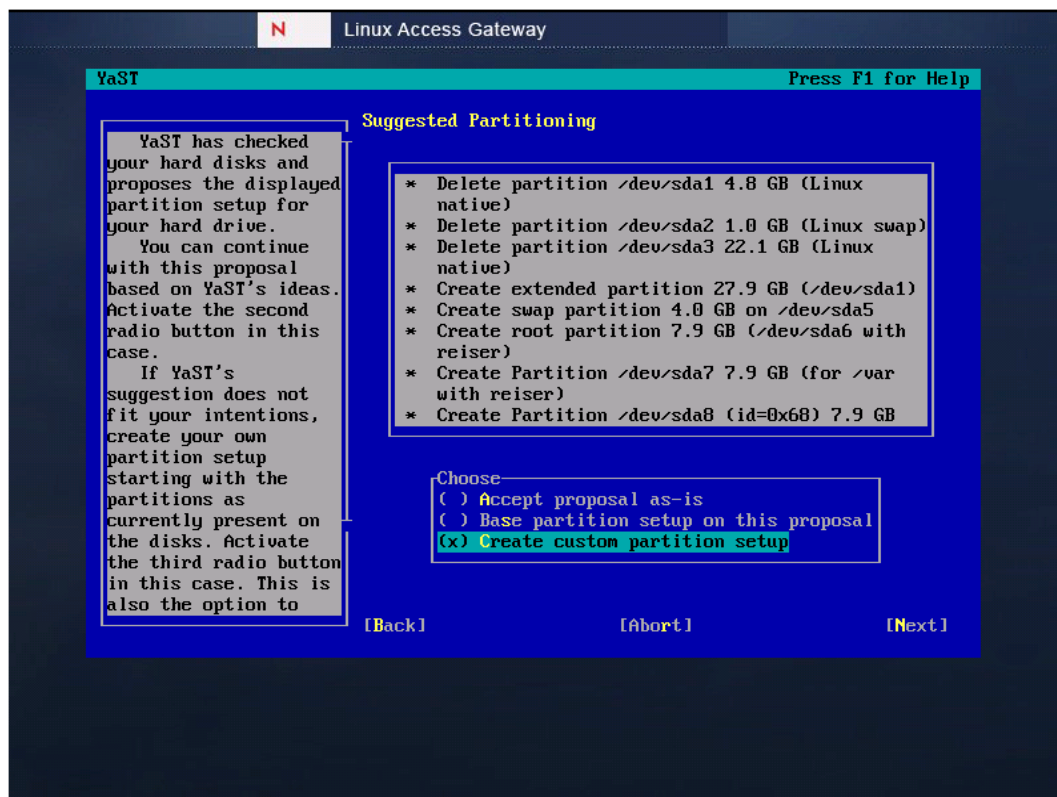
- 6 Select *New installation*, then select *OK*.



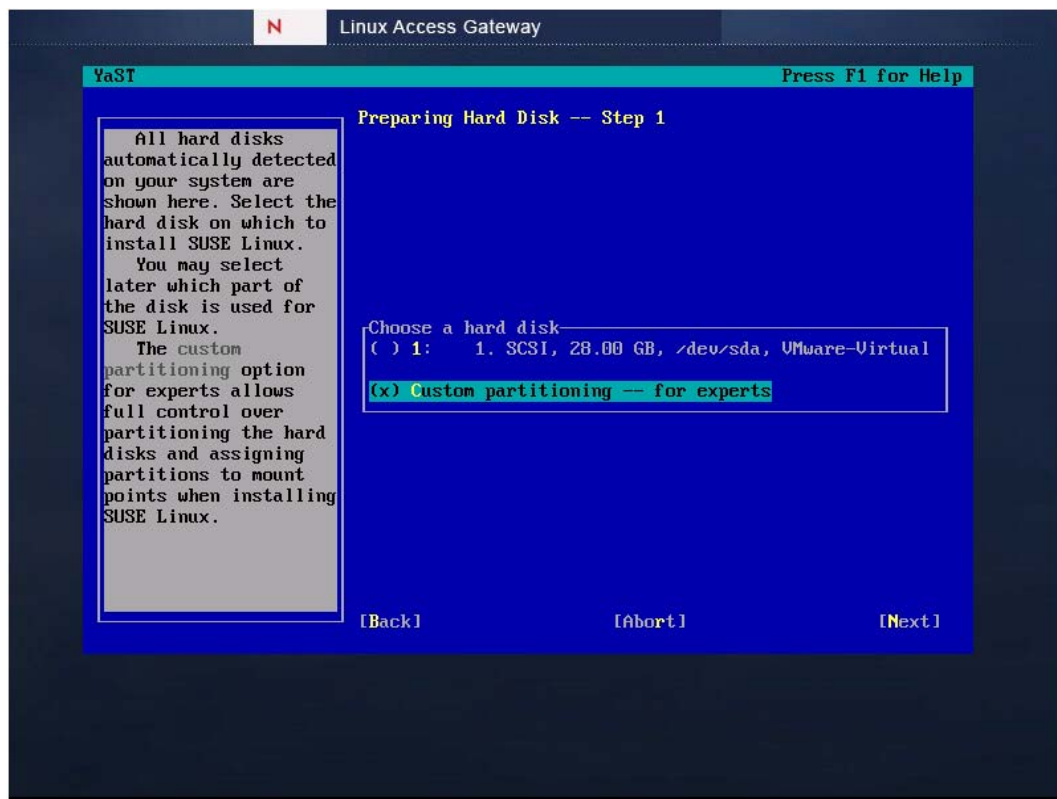
- 7 Select *Change*, then select *Partitioning*.



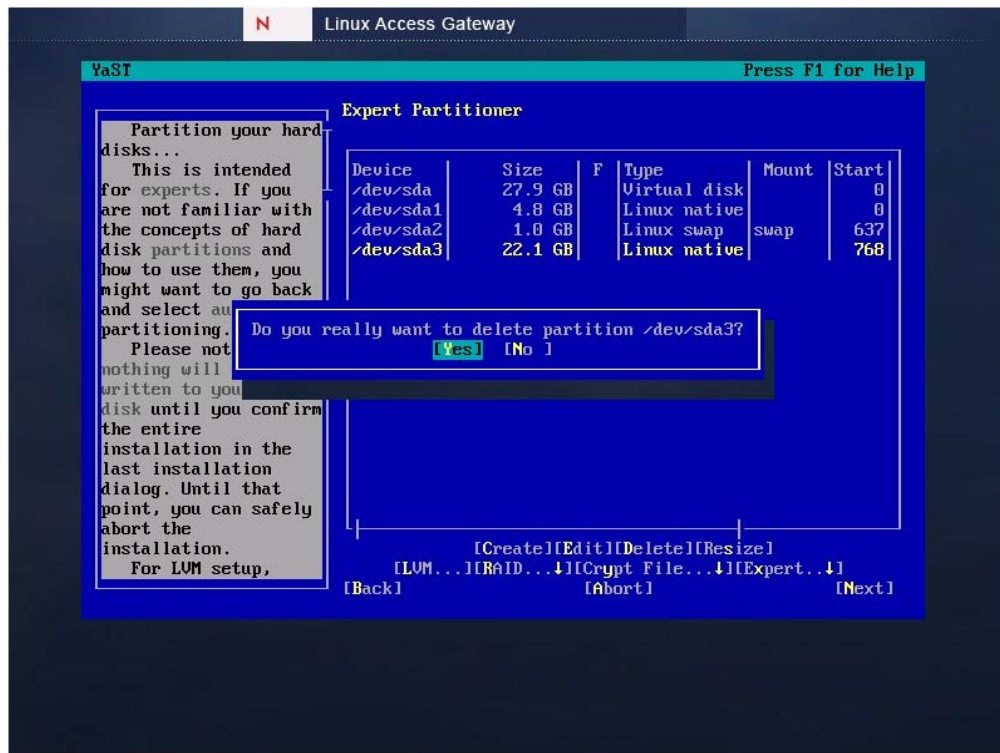
8 Select *Custom Partitioning Setup*, then tab to *Next*.



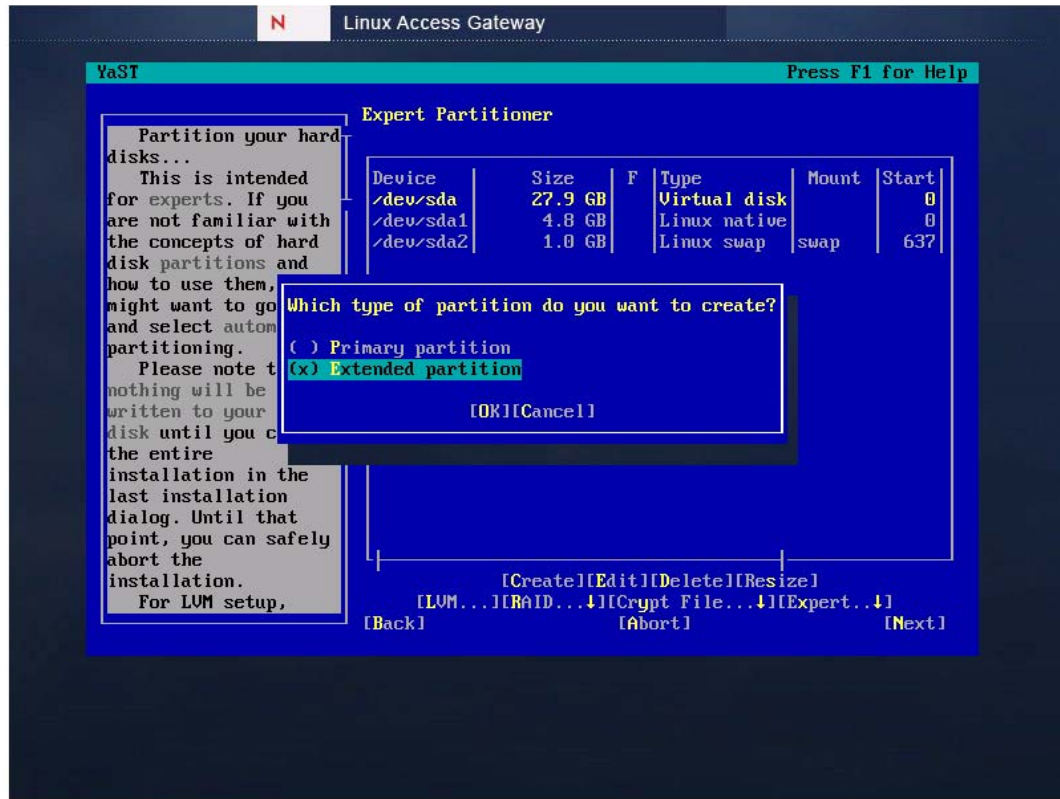
- 9 Select *Custom Partitioning -- for Experts*, then tab to *Next*.



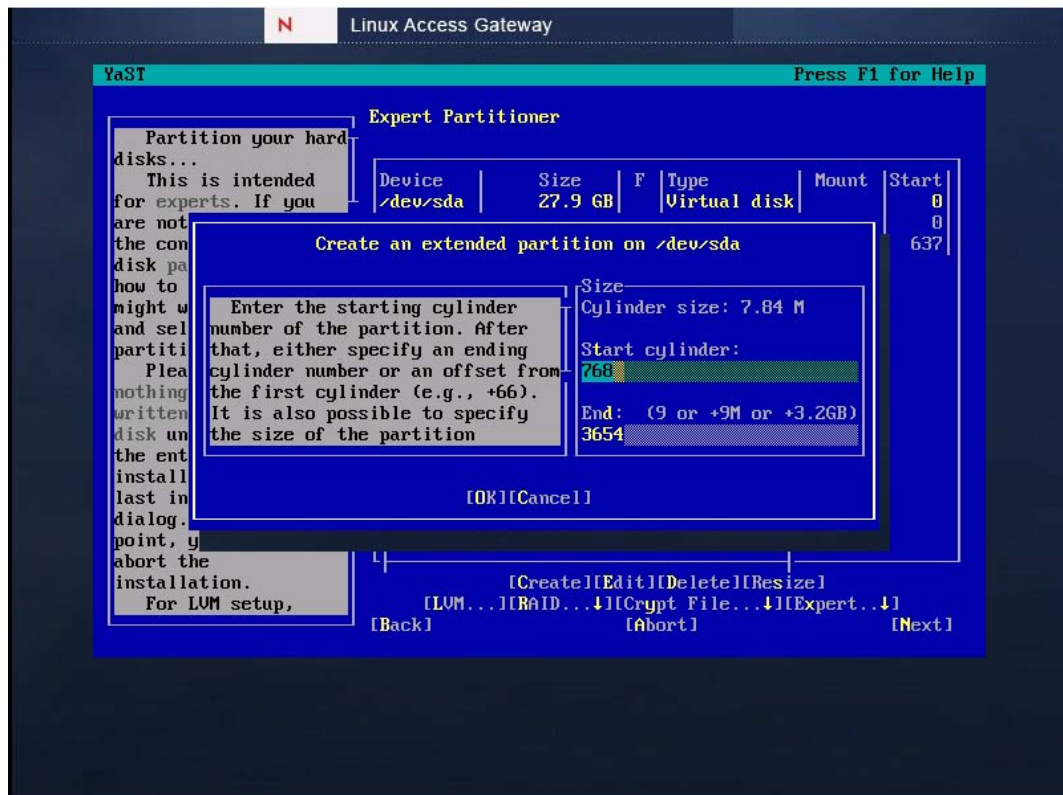
- 10 To get free space to install Linux Access Gateway, select an existing partition in RHEL for removal. If you already have free space, go to [Step 12](#).



- 11 Select *OK* when prompted to reconfirm deletion.
- 12 Select *Create* to create a new partition.
- 13 Select *Extended Partition*, then tab to *Next*.

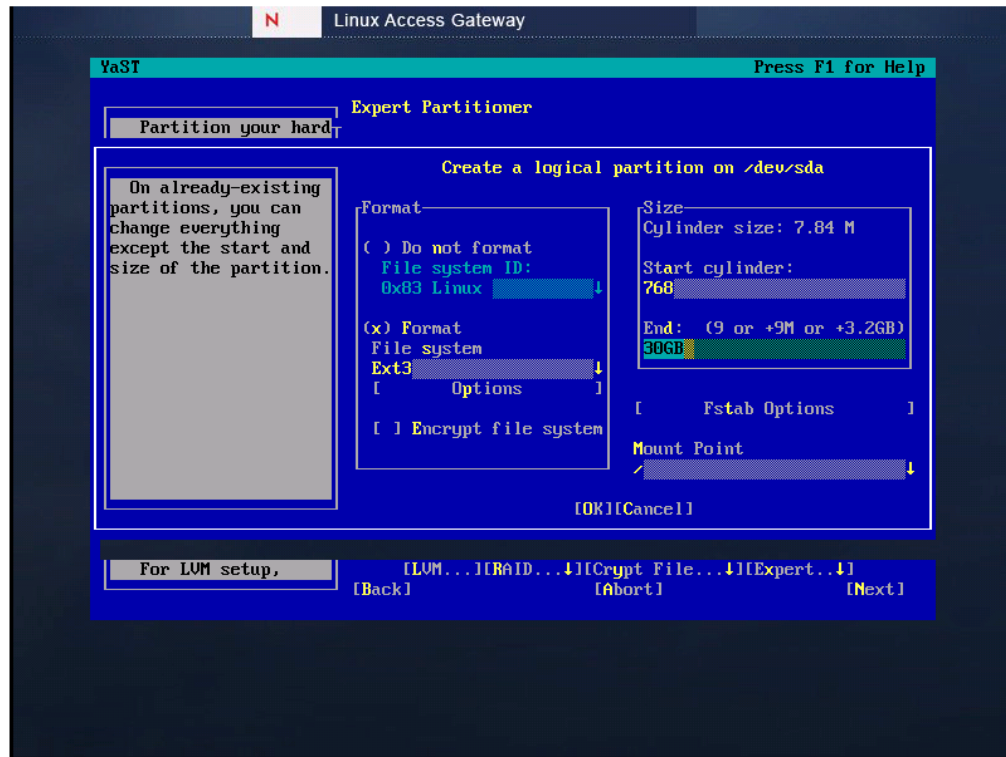


14 Specify 100 GB as the *End Cylinder* value, then tab to *OK*.



15 Create a root partition as follows:

15a Select *Create*, select *Logical partition*, then select *OK*.



15b Fill in the following fields:

Format: Make sure *Format* is selected.

File system: Select *Ext3* for the type.

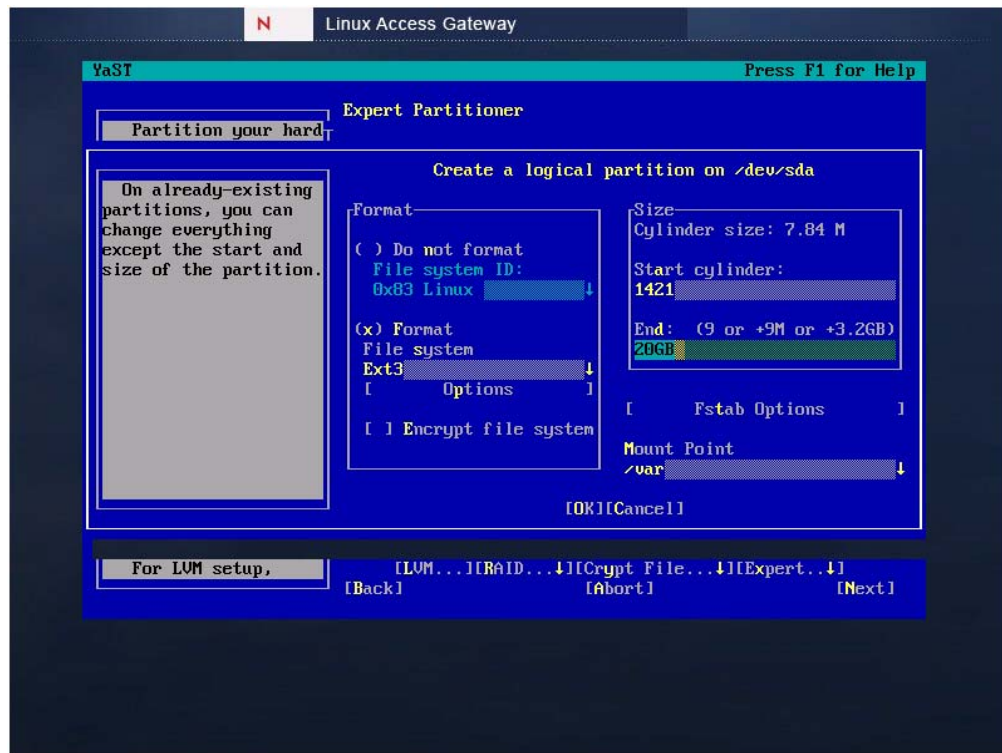
Size: Specify +30GB for the *End* cylinder value.

Mount Point: Select / as the mount point.

15c Select *OK*.

16 Create a var partition as follows:

16a Select the hard drive, select *Create > Logical partition*, then select *OK*.



16b Fill in the following fields:

Format: Make sure *Format* is selected.

File system: Select *Ext3* for the type.

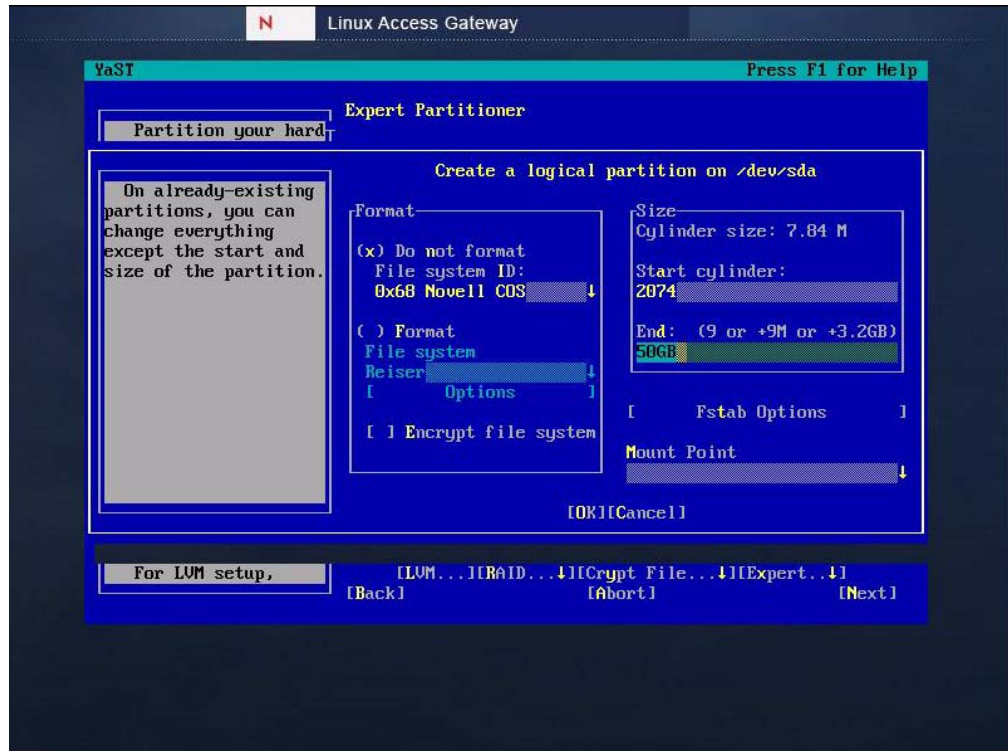
Size: Specify *+20GB* for the *End* cylinder value.

Mount Point: Select */var* as the mount point.

16c Select *OK*.

17 Create a COS partition that uses the remaining space on the hard disk:

17a Select the hard drive, select *Create*, select *Logical partition*, then select *OK*.



17b Fill in the following fields:

Format: Select *Do not format*.

File system ID: Select *0x68 Novell COS* for the ID.

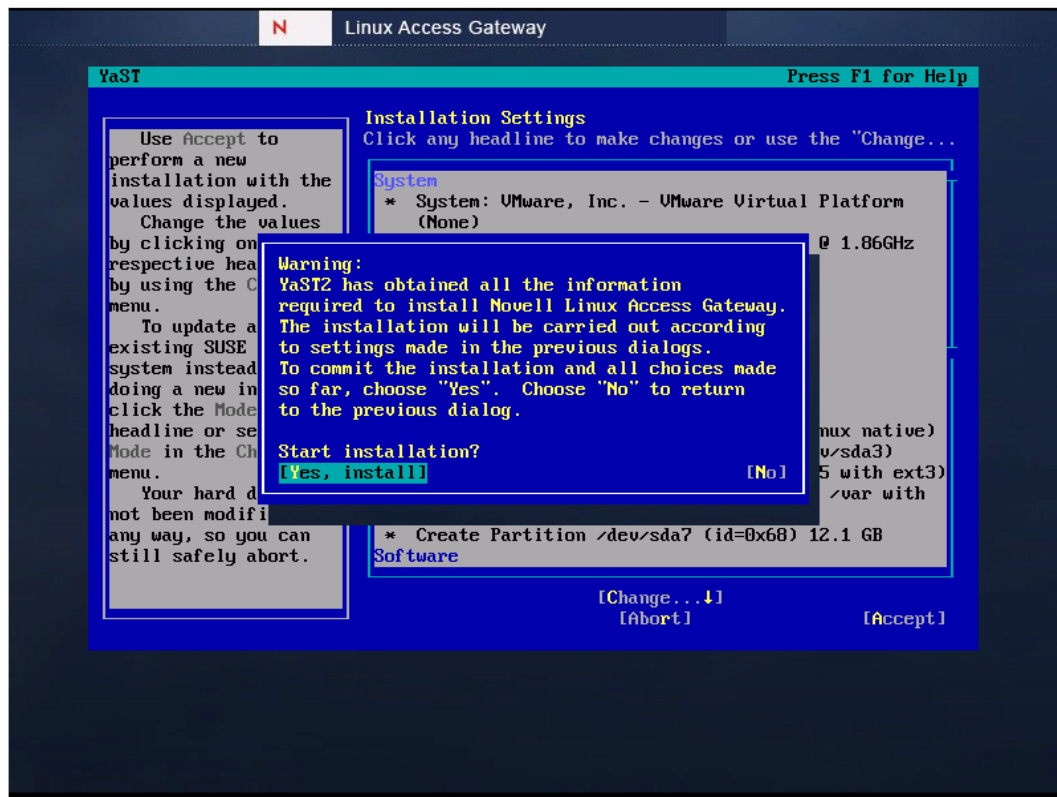
Size: Accept the default value for the *End* cylinder value. This selection allocates the remaining space (50 GB) to the *Extended Partition*.

Mount Point: Make sure the *Mount Point* has no value.

17c Select *OK*.

17d Select *Next*.

18 Select *Accept* to continue with the installation of Linux Access Gateway.



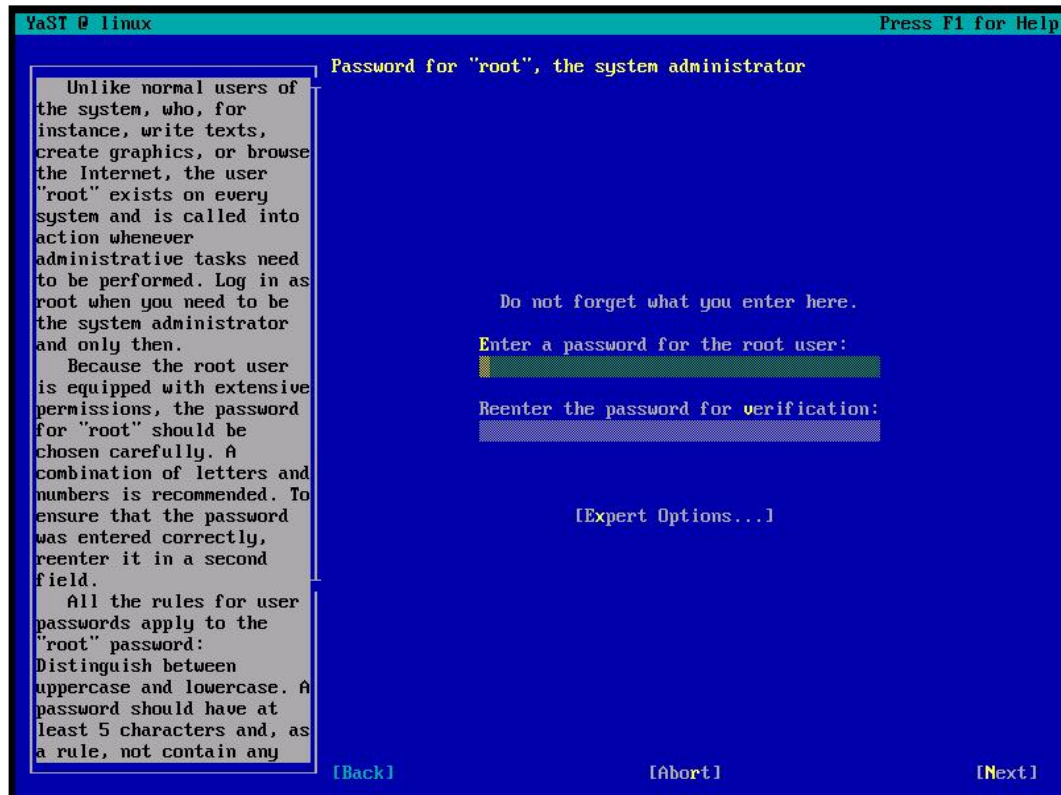
- 19 Select *Yes, Install* when prompted to proceed with the installation. This selection completes the RPM installation.

The hard disk is formatted, removing all data, and the partitions are created. After all the packages are installed, the system reboots in SUSE® Linux Enterprise Server (SLES) 9, and finishes the installation.

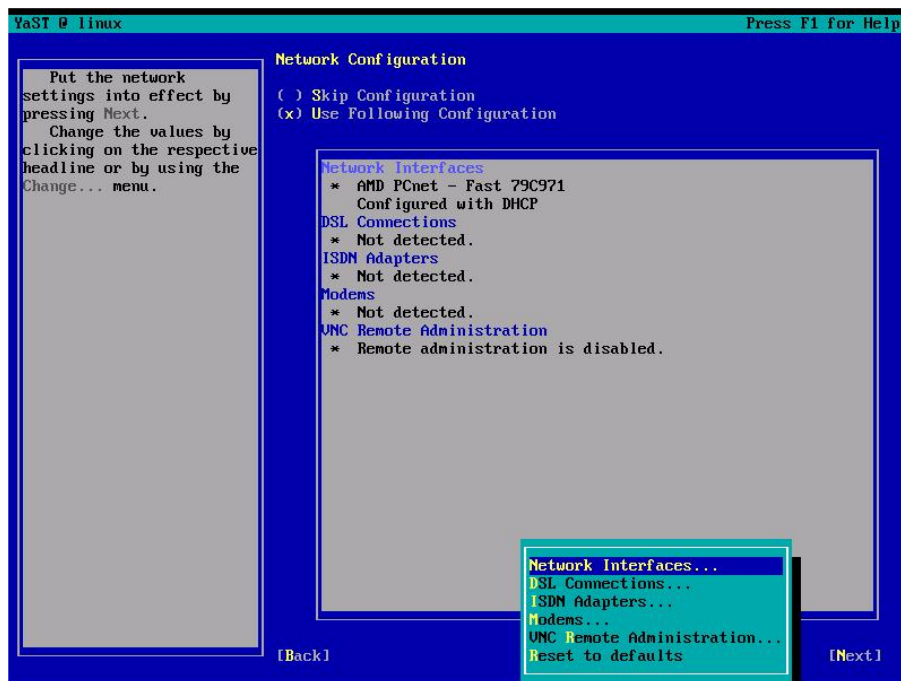
- 20 Continue with [Section 3.4, “Configuring Hardware and System Services,”](#) on page 27.

3.4 Configuring Hardware and System Services

- 1 In the `root` user password screen, specify the password for `root`, then re-type it.

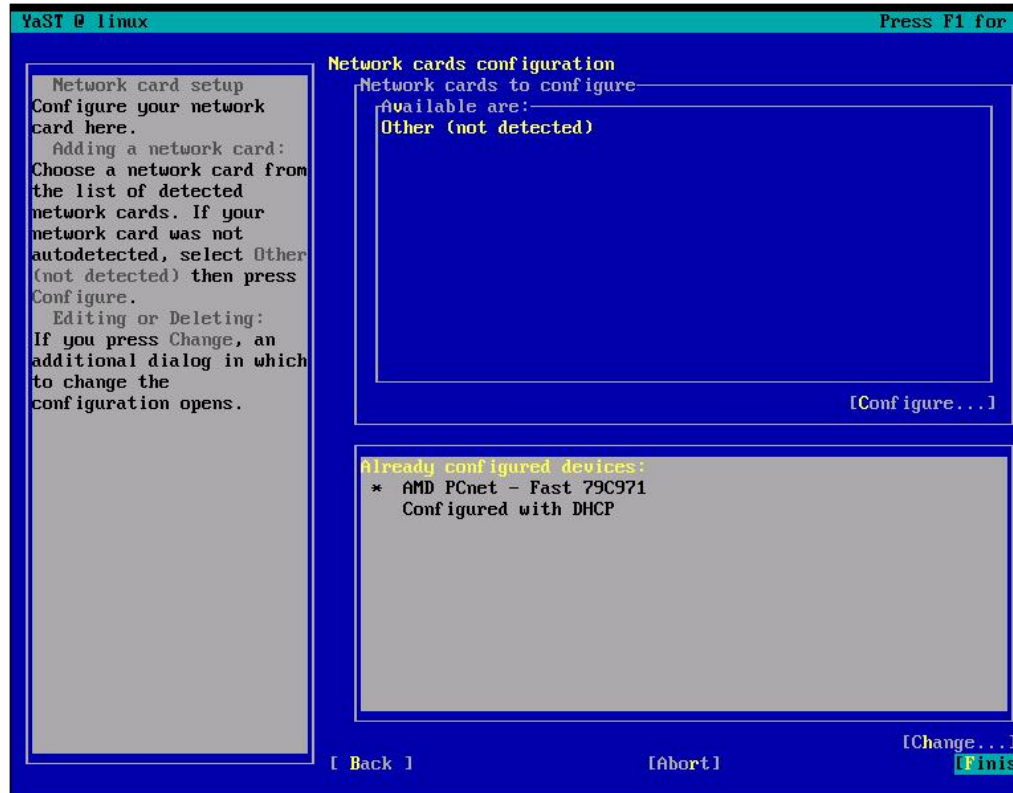


2 Tab to *Next*, then press Enter. The *Network Configuration* screen appears.

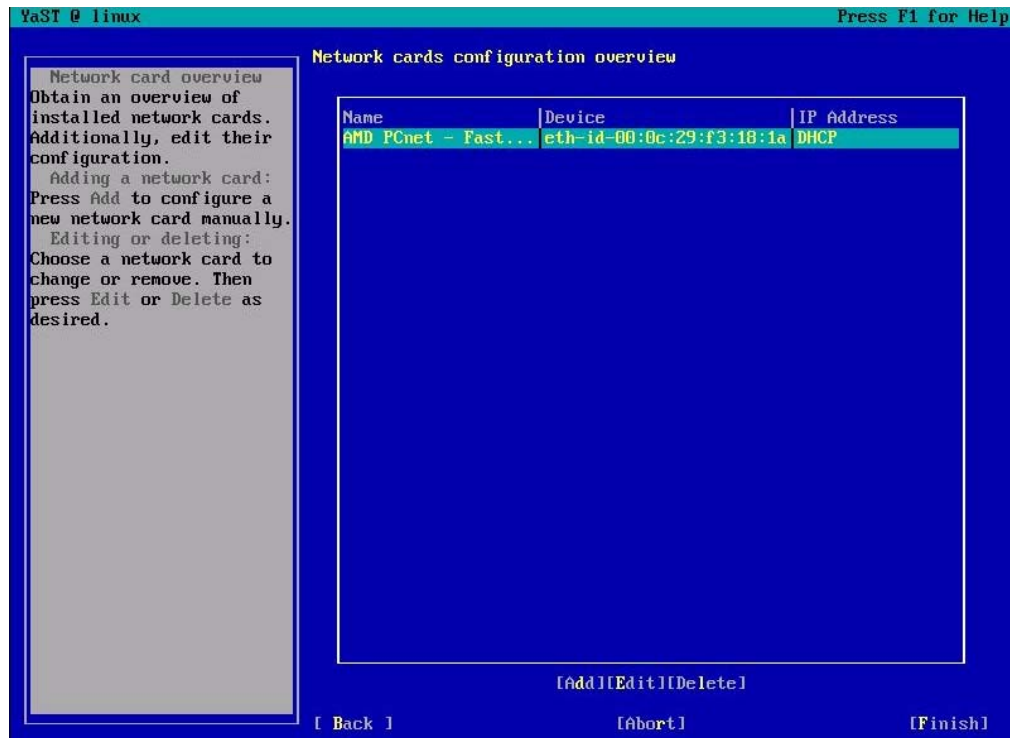


You must complete the network interface configuration. If you do not configure the network interface, the Linux Appliance setup fails. Make sure that Network configuration matches the RHEL configuration.

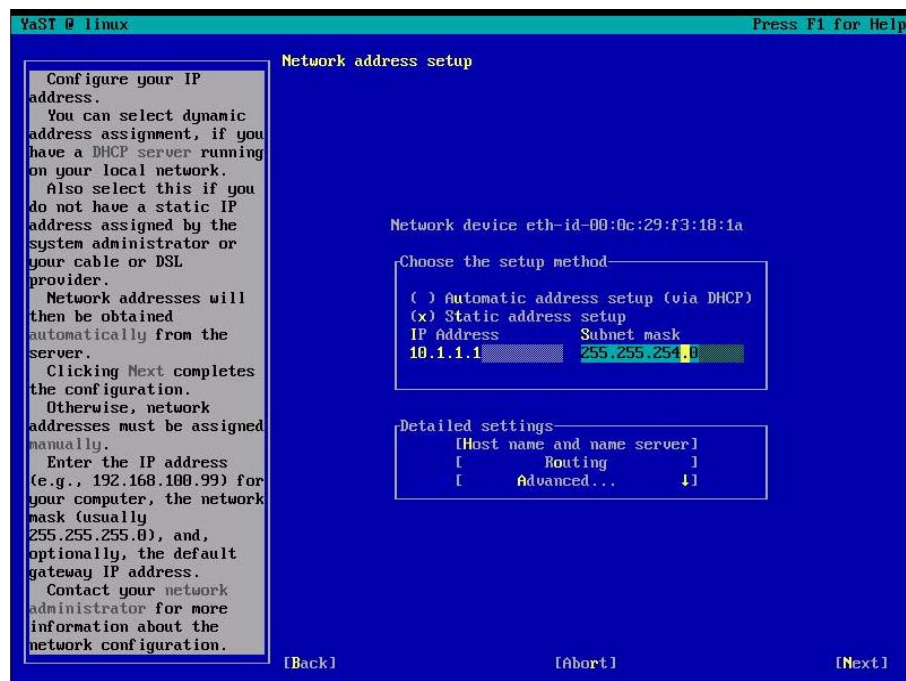
- 2a** To change the network configuration, select *Change* from the Network Configuration screen, then select *Network Interfaces*.



- 2b** Tab to *Change*, then press Enter.



2c Select *Edit*. The Network Address Setup screen appears.



The Access Gateway must not use DHCP; it must be assigned with a static IP address.

2d Configure a static IP address:

Static address setup: Select this option to enter a static IP address.

IP address: Specify the IP address of the RHEL server.

Subnet mask: Specify the subnet mask for your network.

2e Tab to *Select Hostname and server*, then press Enter.

2f Fill in the following fields:

YaST @ linux Press F1 for Help

Host name and name server configuration

Insert the host name and domain name for your computer. Name server list and domain search list are optional.

Note that the hostname is global—it applies to all interfaces, not just this one.

A name server is a computer that translates host names into IP addresses. This value must be entered as an IP address (e.g., 10.10.0.1), not as a host name.

Search domain is the domain name where host name searching starts. The primary search domain is usually the same as the domain name of your computer (e.g., suse.de). There may be additional search domains (e.g., suse.com).

If you are using DHCP to get an IP address, check whether to get a host name via DHCP or to set name servers and searched domains via DHCP.

Host Name and Domain Name (Global)

Host Name	Domain Name
lag10	labs.customer.com

[] Change host name via DHCP

Name servers and domain search list

Name Server 1	Domain Search 1
10.1.1.1	labs.customer.com
Name Server 2	Domain Search 2
Name Server 3	Domain Search 3

[] Update name servers and search list via DHCP

[Back] [Abort] [OK]

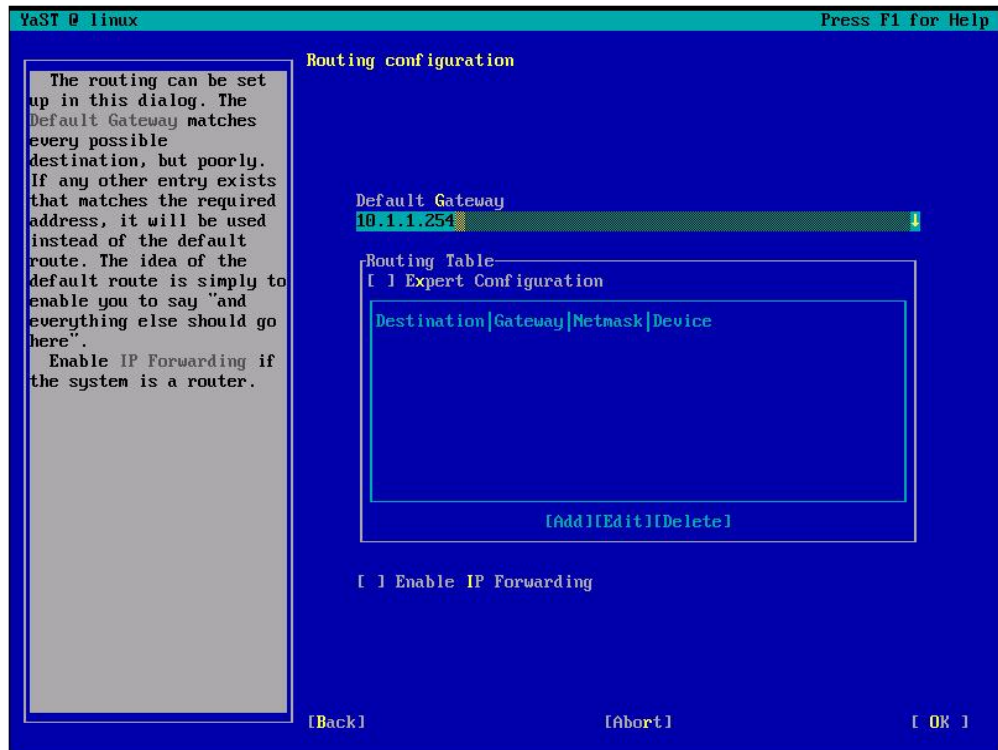
Host Name: Specify the same hostname given for the RHEL machine.

Domain Name: Change the domain name to the domain name for your network.

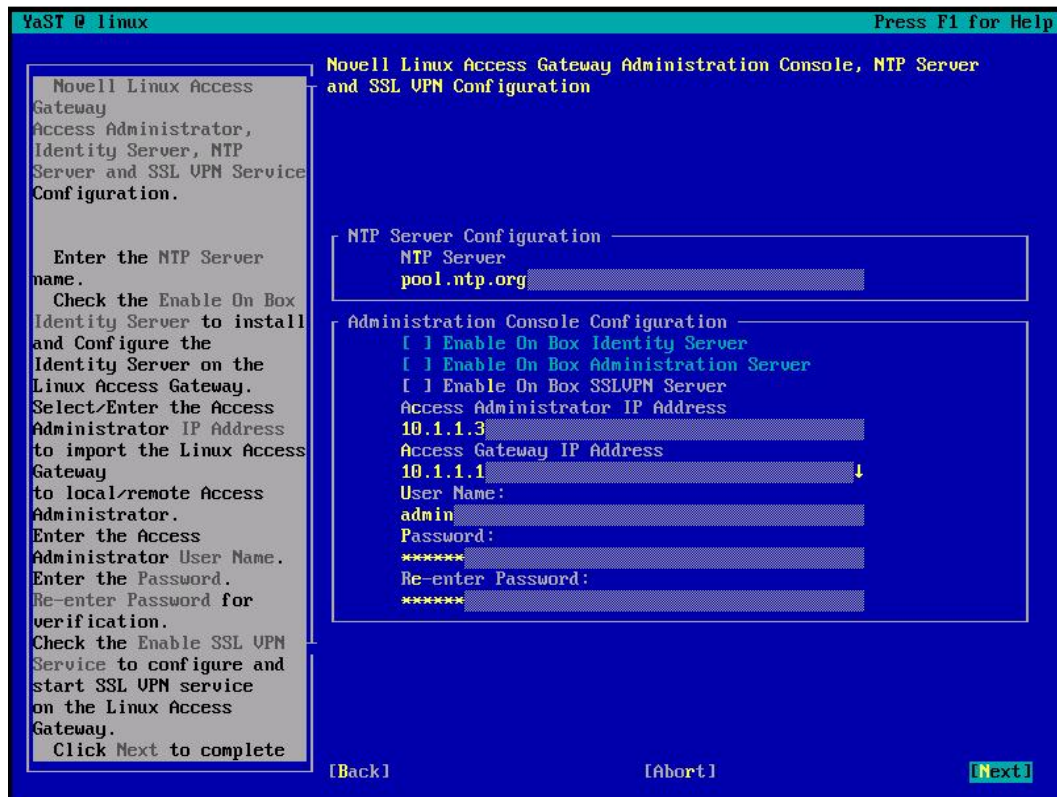
Name Server 1: Specify the IP address of your DNS server. If you have more than one DNS server, specify their IP addresses in the *Name Server 2* and *Name Server 3* fields. You do not need to configure a domain search.

2g Tab to *OK*, then press Enter.

2h Tab to *Routing*, then press Enter.



- 2i Specify the gateway for your network, tab to *OK*, then press Enter.
- 2j Tab to *Next*, then press Enter.
- 2k Tab to *Finish*, then press Enter.
- 3 Tab to *Next*, then press Enter. The *Administration Console Configuration* screen appears.



- 4 Fill in the following fields:

Enable On Box Identity Server: This option is not available in this release.

Enable On Box Administration Server: This option is not available in this release.

Enable On Box SSL VPN Server: Do not select this option.

Access Administrator IP Address: Specify the address of the Administration Console.

Access Gateway IP Address: Specify the IP address of the RHEL server from the drop-down list.

Username: Specify the name of the Administration Console user.

Password: Specify the password for the user.

Reenter Password: Re-type the password for the user.

- 5 Tab to *Next*, then press Enter.
- 6 Tab to *Next*, then press Enter.
- 7 The *Add a new local user* screen appears. Select *Next*.
- 8 When the *Empty user login* prompt is shown, select *Yes*.
- 9 On the *Hardware configuration* option, select *Next*.

The final configuration and auto-import into the Administration Console starts. This might take 10 to 15 minutes, depending on the configuration and hardware.

Ignore the warning about failed services in runlevel3 for novell-jcc.

- 10 Proceed with [Section 3.5, “Verifying the Linux Access Gateway Installation on RHEL,”](#) on [page 34](#).

3.5 Verifying the Linux Access Gateway Installation on RHEL


- 1 From a client machine external to your Administration Console server, launch your preferred browser and enter the URL for the Administration Console.

Use the IP address established when you installed the Administration Console. It should include the port 8080 and the application nps. If the IP address of your Administration Console is 10.10.10.50, you would enter the following:

`http://10.10.10.50:8080/nps`

- 2 Click *OK* to accept the certificate. You can select either the permanent session or the temporary session certificate option.
- 3 On the Login screen, specify the administrator name and password that you defined during the Administration Console installation.
- 4 Click *Devices > Access Gateways*.

If the installation was successful, the IP address of your Access Gateway appears in the Server list.

Access Manager		Devices	Policies	Auditing	Security			
Access Gateways								
Access Gateway Servers								
New Cluster... Shutdown Reboot Refresh Actions								
1 item(s)								
<input type="checkbox"/>	Name	Status	Health	Alerts	Commands	Statistics	Type	Configuration
<input type="checkbox"/>	10.10.159.18	Current		0	Succeeded	View	Linux Appliance	Edit

The Health status indicates the health state after the Access Gateway was imported and registered with the Administration Console. The health status should appear as green if you successfully completed the steps in [Section 3.4, “Configuring Hardware and System Services,” on page 27](#).

If an Access Gateway started to import into the Administration Console, but failed to complete the process, the following message appears:

Server gateway-<name> is currently importing. If it has been several minutes after installation, click repair import to fix it.

- 5 (Conditional) If you have waited at least ten minutes, but the message doesn’t disappear and the Access Gateway doesn’t appear in the list, click the *repair import* link.

For additional help, see “Appendix, A.3 Troubleshooting the Access Gateway Import” in the *Novell Access Manager 3.1 SP1 Installation Guide* (<http://www.novell.com/documentation/beta/novellaccessmanager31/installation/?page=/documentation/beta/novellaccessmanager31/installation/data/bookinfo.html>).

This completes the installation of the Linux Appliance.

- 6 Continue with one of the following:
 - ♦ [Section 3.6, “Configuring the Linux Access Gateway to Boot from RHEL,” on page 35](#).
 - ♦ “Quotes instead of CiteTitle on the section name.Setting Up a Basic Access Manager Configuration” in the *Novell Access Manager 3.1 SP1 Basic Setup Guide* (<http://www.novell.com/documentation/novellaccessmanager31/basicconfig/?page=/documentation/novellaccessmanager31/basicconfig/data/bookinfo.html>)

3.6 Configuring the Linux Access Gateway to Boot from RHEL

After the installation of Linux Access Gateway, the machine starts in SUSE Linux Enterprise Server (SLES) 9 SP3. To boot the machine from Red Hat, do the following:

- 1 From the Linux Access Gateway console, log in as `root`.

- 2 Enter the following command:

```
fdisk -l
```

- 3 To copy boot entries for Red Hat to the Linux Access Gateway machine, create a directory as follows:

```
mkdir <Directory Name>
```

For example, `mkdir rhel`

- 4 Specify the following command to mount the `/` partition or the boot partition of RHEL:

```
mount /dev/<partition> <directory>
```

Replace `<partition>` with the `/` or boot partition of RHEL that you want to mount and `<directory>` with the newly created directory.

For example,

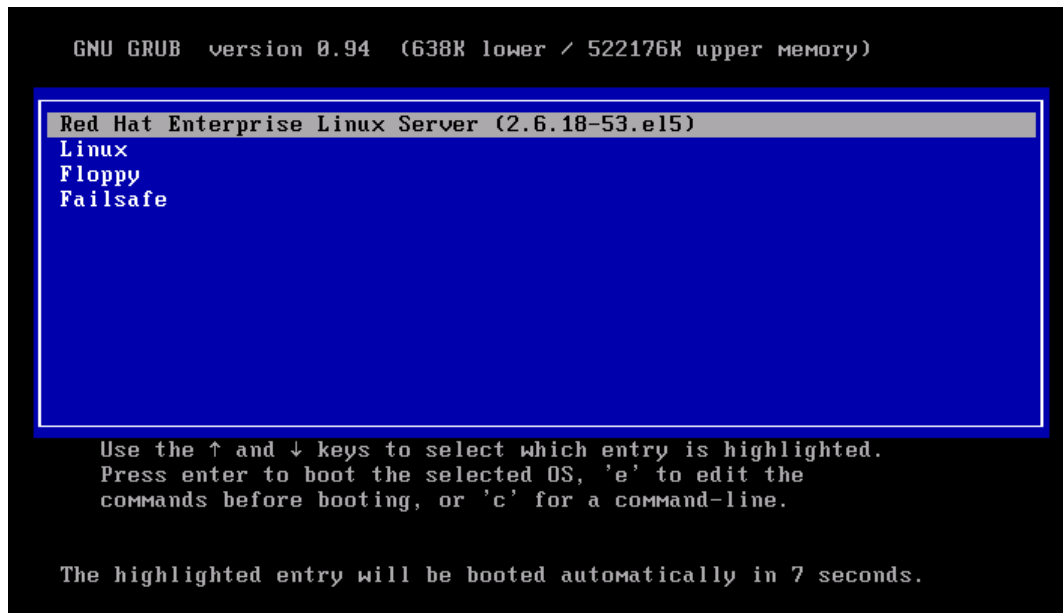
```
mount /dev/sda1 rhel
```

- 5 To get multiple boot options in Linux Access Gateway, use a file editor such as `vi` to copy the lines similar to the lines shown below from the RH boot loader `rhel/boot/grub/menu.lst` to the Linux Access Gateway boot loader `/boot/grub/menu.lst`, just below `timeout`.

```
title Red Hat Enterprise Linux Server (2.6.18-53.el5)
root (hd0,0)
kernel /boot/vmlinuz-2.6.18-53.el5 ro root=LABEL=/ rhgb quiet
initrd /boot/initrd-2.6.18-53.el5.img
```

This ensures that the system restarts in RHEL by default.

- 6 Restart the machine. The system boots in RHEL.



If you want to restart the machine in the Linux Access Gateway, use the arrow key to select the *Linux* option

- 7 Start the RHEL server.

3.7 Starting the Linux Access Gateway from RHEL

To start the Linux Access Gateway in RHEL:

- 1 Log in as `root` to the RHEL machine.
- 2 Set SELinux to Permissive mode:
 - 2a Select *System > Administration > SELinux Management*.
 - 2b Select *System Default Enforcing Mode* and set *Current Enforcing Mode* to *Permissive*.
- 3 Do one of the following:
 - 3a To disable the firewall, select *System > Administration > Security Level and Firewall > Firewall Option* to *Disabled*. Click *Apply* to save changes.

NOTE: This is the preferred option.

 - 3b Open the required ports in the firewall, then select *System > Administration > Security Level and Firewall > Firewall Option*. Select *Other Ports > Add*, then add 1443 as the port and set the protocol as TCP. Add other ports required for the reverse proxy services to run. For example, if you have a reverse proxy service listening on port 80 and 443, then add these two TCP ports to the *Firewall exceptions* list.
- 4 Copy the `rhel-lag.tar.gz` file to the RHEL machine.
- 5 Specify the following command to untar the file:

```
tar -zxvf rhel-lag.tar.gz -P
```
- 6 Specify the following command to change the directory:

```
cd /opt/novell/access-gateway/scripts/
```

- 7 Specify the following command to run the script:

```
sh configure-lag.sh
```

- 8 Specify the following information for the script:

- 8a Specify the mount point for the Linux Access Gateway in the current Operating System. For example, /lag.
- 8b Specify *yes* when prompted to confirm.
- 8c Select the device containing the / partition of the Linux Access Gateway Installation from the list displayed. Specify the relevant number.
- 8d Select the device containing the /var partition of the Linux Access Gateway Installation from the list displayed. Specify the relevant number.
- 8e Specify *yes*, when prompted to confirm mounting.
- 8f Verify and specify *yes*, when prompted to confirm *fstab* modifications.
- 8g Specify *yes* to continue.
- 8h Specify *yes* to edit the syslog configuration, so the Linux Access Gateway logs to syslog.
- 8i Specify *yes* to restart the syslog daemon.

- 9 Start the Linux Access Gateway service by using the following command:

```
/etc/init.d/novell-am-gateway start
```

NOTE: You must close the terminal used to execute the above command.

The Linux Access Gateway service is automatically started when the machine is rebooted.

- 10 (Optional) If you want to stop the Linux Access Gateway service, use the following command:

```
/etc/init.d/novell-am-gateway stop
```

3.8 Configuring the Linux Access Gateway after It Is Installed on RHEL

The Linux Access Gateway must be configured after it is installed on RHEL. For information on configuring the gateway, see the *Novell Access Manager 3.1 SPI Access Gateway Guide* (<http://www.novell.com/documentation/novellaccessmanager31/accessgateway/?page=/documentation/novellaccessmanager31/accessgateway/data/bookinfo.html>).

If you want to add or modify the network configuration for Linux Access Gateway installed on RHEL, the procedure is different from the Linux Access Gateway installed on SUSE® Linux Enterprise Server (SLES).

- ♦ [Section 3.8.1, “Configuring the New Network Interface,” on page 37](#)
- ♦ [Section 3.8.2, “Configuring a Secondary IP Address,” on page 38](#)

3.8.1 Configuring the New Network Interface

- 1 Configure the network interface in RHEL by selecting *System > Administration > Network*.

- 2 Use the Administration Console for the Linux Access Gateway to configure the network interface.

For more information, see Section 3.8.1 “Viewing and Modifying Adapter Settings” and Section 3.8.5, *Adding New Network Interfaces to the Gateway Appliance*, in the *Novell Access Manager 3.1 SPI Access Gateway Guide* (<http://www.novell.com/documentation/novellaccessmanager31/installation/?page=/documentation/novellaccessmanager31/installation/data/bookinfo.html>)

3.8.2 Configuring a Secondary IP Address

- 1 Configure the secondary IP address in RHEL by selecting *System > Administration > Network*.
- 2 Use the Administration Console for Linux Access Gateway to configure the secondary IP address. For more information, see “Section 3.8.1 Viewing and Modifying Adapter Settings”, in the *Novell Access Manager 3.1 SPI Access Gateway Guide* (<http://www.novell.com/documentation/novellaccessmanager31/installation/?page=/documentation/novellaccessmanager31/installation/data/bookinfo.html>).

This section has the following troubleshooting information:

- ♦ [Section 4.1, “Health Status Displays NTP Check Failed Error,” on page 39](#)

4.1 Health Status Displays NTP Check Failed Error

If the Linux Access Gateway health displays the following error, you can safely ignore it:

```
NTP is enabled, but a status check failed.  
(Required Action) Verify that the NTP server is installed.
```

You can also use the following command, then refresh the health:

```
umount /var/run  
cp /var/run/ntpd.pid /lag/var/lib/ntp/var/run/ntp/ntpd.pid
```


Additional Information

A

This section includes the following additional and optional configuration information about the Linux Access Gateway installed on Red Hat Enterprise Linux:

- ♦ [Section A.1, “Differences between the Linux Access Gateway on RHEL and the Linux Access Gateway Appliance,” on page 41](#)
- ♦ [Section A.2, “Configuring the Linux Access Gateway to Load the Red Hat Boot Loader,” on page 41](#)

A.1 Differences between the Linux Access Gateway on RHEL and the Linux Access Gateway Appliance

Following is the difference between the Linux Access Gateway appliance and the Linux Access Gateway on RHEL

- ♦ IP Address must be added on RHEL server.
- ♦ NTP must be managed on RHEL server
- ♦ syslog must be managed on RHEL server
- ♦ syslog cron-tab entries must be managed on RHEL
- ♦ Secondary IP addresses must be managed on RHEL
- ♦ Patches are upgraded from the Linux Access Gateway partition
- ♦ Linux Access Gateway logs are viewed from the Linux Access Gateway partition
- ♦ Linux Access Gateway coredumps are collected from the Linux Access Gateway partition
- ♦ Touch files are added or removed from the Linux Access Gateway partition

A.2 Configuring the Linux Access Gateway to Load the Red Hat Boot Loader

- 1 Start the machine in RHEL.
- 2 Enter the following command:

```
/sbin/grub-install /dev/<hardisk>
```


For example, `/sbin/grub-install /dev/sda`
- 3 Edit `/boot/grub/menu.lst` and comment out the following line to display the boot options for Red Hat as well as the Linux Access Gateway in the Red Hat boot loader:

```
#hiddenmenu
```
- 4 To copy boot entries for Linux Access Gateway to the Red Hat machine, create a directory as follows:

```
mkdir <Directory Name>
```


For example, `mkdir lagboot`

- 5 Enter the following command to mount the / partition or the boot partition of RHEL:

```
mount /dev/<partition> <directory>
```

Replace *<partition>* with the / or boot partition of Linux Access Gateway that you want to mount and *<directory>* with the newly created directory. For example, `mount /dev/sda5 lagboot`

- 6 To get multiple boot options in the Linux Access Gateway, use a file editor such as `vi` to copy the lines similar to the line shown below from the Linux Access Gateway boot loader `lagboot/boot/grub/menu.lst` to the end of the Red Hat boot loader `/boot/grub/grub.conf` file.

```
title Linux
    kernel (hd0,4)/boot/vmlinuz root=/dev/sda5 vga=0x32b selinux=0
    splash=silent resume=/dev/sda2 elevator=cfq showopts
    initrd (hd0,4)/boot/initrd
```

This ensures that the system provides options to boot in the Linux Access Gateway as well as RHEL. If none of the options are selected, the system boots in RHEL by default.

- 7 Restart the machine. The Red Hat boot loader image displays options to boot in Red Hat as well as Linux Access Gateway.

