# Product Name

## Linux Installation Guide

## v2.6

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# 1

# Overview

## 1.1 About this Guide

This document provides information on how to configure the computers for a two-box system where the server computer is a Linux® computer and the client computer is a Windows® computer.

Note the following:

- This process can take from one to two hours to complete. Allow enough time to complete the install process with no distractions.
- If you do not follow the instructions exactly as written, you may have to start over from the beginning.
- These instructions are for use when there is Internet access.
- These instructions are for a new installation only (no upgrades).
- This process deletes all existing data from the hard drive and partitions (divides) it to the default state.
- The following media are required:
  - Ubuntu® Linux 14.04.1 Server Installation CD
  - Debian® packages CD
  - Latest Product Windows client installer on a USB drive
- These instructions were written for the Generation 4 server (see *"Supported Hardware" on page 9*).

The following chapters provide the detailed steps:

- *"2. BIOS Configuration" on page 11*
- *"3. Installing Linux" on page 24*
- *"4. Installing Debian Packages" on page 38*
- *"5. Installing Client Software" on page 50*

## 1.2 Terms

The following terms are used in this document:

***Table 1–1 List of Terms***

| Term | Definition |
|---|---|
| ActiveMQ™ | Apache ActiveMQ is an open source messaging server. |
| BIOS | Basic Input Output System. Computer instructions stored in firmware used to control input and output operations. |
| Debian® | UNIX-like operating systems used on server computers. |
| DHCP | Dynamic Host Configuration Protocol. A protocol used to configure devices on a network so that they can communicate over the network. |
| encryption | The process of encoding messages for security purposes. |

*Table 1–1 List of Terms (cont.)*

| Term | Definition |
|---|---|
| Grub | Grand Unified Bootloader. Software that runs when the computer first starts. |
| host name | The label associated with a computer. |
| IP Address | A 32-bit number that uniquely identifies a computer on a network in the format 216.239.41.99 where each number either identifies a network location or an individual machine location.<br>Internet protocol address. A number assigned to all devices connected to a network.<br>See Also: dynamic IP address, static IP address |
| Java™ | A programming language and computing platform. The RT System 2 system utilizes Java and<br>it is installed along with the other RT System 2 software components. |
| Linux® | UNIX-like operating systems used on server computers. |
| NIC | Network Interface Card. A circuit board in a computer that provides a physical connection to a network. Computer hardware that enables connection of a computer to a<br>network, usually by way of an Ethernet port and cable.<br>See Also: Ethernet |
| OpenSSH | OpenBSD Secure Shell. Computer programs that provide encrypted communication over a network using SSH. |
| OS | Operating System. The program manages all the other programs in a computer. |
| partition | Dividing a hard drive into logical parts where each part functions as if it were a separate physical drive. |
| PostgreSQL® | An open source object-relational database. |
| RAID | Redundant Array Of Independent Disks. |
| Samba | Programs that allow for file and print sharing between Windows computers and Linux computers. |
| SSD | Solid-state Drive. |
| Ubuntu | UNIX-like operating systems used on server computers. |
| UNIX® | A multi-tasking, multi-user, portable, modular operating system used on server computers. |
| Windows® | An OS that runs on top of DOS and provides a graphical user interface environment. Used on personal computers. |

## 1.3 Who Should Use this Guide

This guide is intended for use by Company Name Field Service Engineers. It is assumed that you are familiar with using a computer.

## 1.4 Supported Hardware

The supported hardware for a two-box system is listed in the Product Installation Guide, Product Hardware chapter, System Configurations section.

**IMPORTANT:** There are three common configurations for the Linux server; a configuration with one Solid State Drive (SSD) (Rev-1), a configuration with two SSDs connected to an Areca controller, (Rev-2), and a configuration with two SSDs (Rev-4). If you do not know which configuration you have, open the server case and count the number of SSDs in the box. If you still cannot determine which configuration you have, contact engineering for assistance. This document describes the setup for each configuration.

- Rev-4)
  - Two SSD drives in a RAID1 configuration for the OS
  - Areca® RAID controller for the internal RAID

Each RAID configuration should already be in place based on the drives installed.

## 1.5 Related Documents

Product-related documents are as follows:

- **Product Documents Guide** – Lists all of the Product documents with a brief description of each.
- **Product Installation Guide** – Provides instructions for setting up the recording truck hardware, and installing and updating software and firmware on a single-box system, or a two-box system.
- **Product Deployment Guide** – Provides instructions on how to deploy the Product in the field, including setting up the backhaul equipment.
- **Product System Description** – Provides an introduction to the Product system and user interface components.
- **Product Operator Guide** – Provides instructions on using the software.
- **Product Glossary** – Lists and defines Product terms and acronyms. Includes some general seismic and geologic terms and acronyms.

## 1.6 Getting Help

For assistance with configuring the Linux/Windows system, contact the Company Name Engineering Department.

To get help on the Product Central Recording System, consult the online help. You can find the help documents by clicking the help icon in the user interface, or by navigating to the following directory:

`C:\xxx\xx\vx.y\server\help\index.htm`

Where `vx.y` is the version number (for example, v2.6).

# 2

# BIOS Configuration

This chapter describes how to verify that the BIOS is configured correctly prior to installing the Linux operating system and Product system software.

## 2.1 Navigating with the Keyboard

In this section, use the following keys to navigate the screens:

- **TAB** – Move between fields
- **ARROW keys** – Move between fields
- **ENTER** – Select a highlighted item, such as Continue

## 2.2 Server Reboot Process

The reboot process takes approximately 2.5 minutes. The reboot process is as follows:

- The system shuts down
- The system starts up and displays the following screens:
  - Waiting for F/W to become ready
  - Testing PCI bus functionality
  - Areca Raid screen is displayed (press TAB within 6 seconds to enter the setup)
  - American Magatrends screen is displayed (1 second)
  - Intel RAID screen is displayed (press CTRL+I within 3 seconds to enter the setup)
  - American Magatrends is displayed (3 seconds)
  - GNU GRUB screen is displayed (2 seconds)
  - Server login prompt is displayed

## 2.3 Areca BIOS

The first step is to verify the Areca RAID configuration. This should already be configured when delivered from the Chassis Plans vendor. If the configuration is not correct, contact Engineering.

**1** Check Prerequisites:

A keyboard is plugged into one of the server's USB ports.

A mouse is plugged into one of the server's USB ports.

**2** Reboot the computer using one of the following methods:

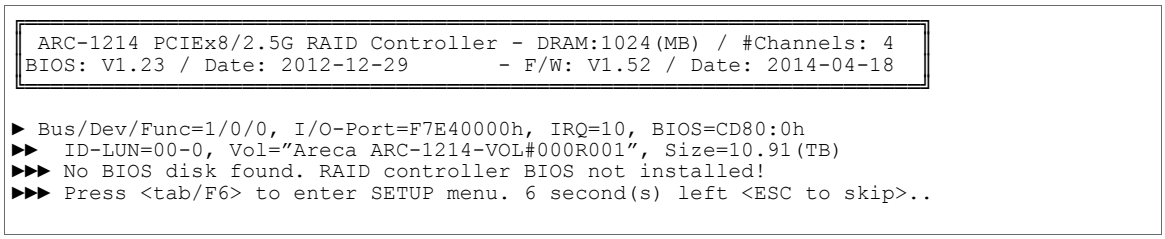
**a** At the command line, type the following and then press ENTER:

```
sudo reboot
```

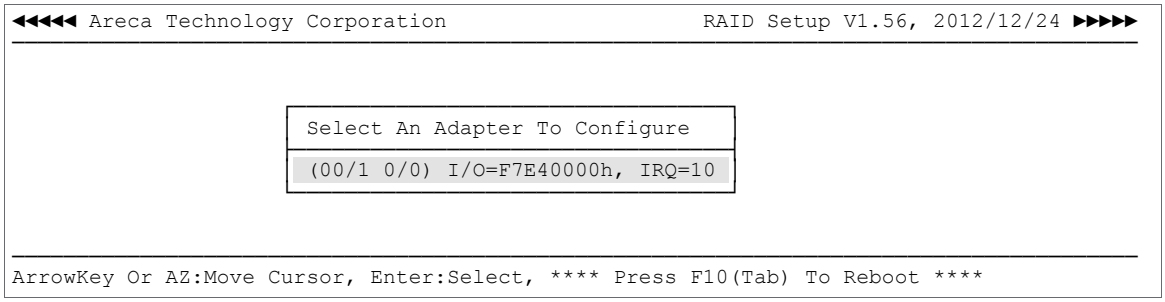
**b** Press the RESET button on the server.

**3** When the following screen is displayed, press TAB.

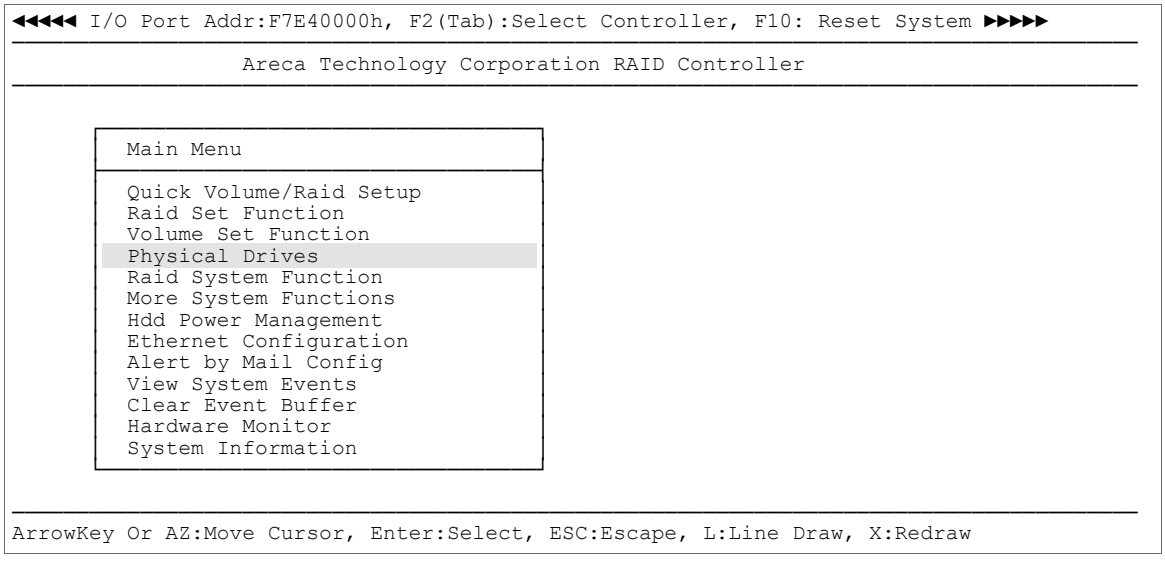
**NOTE:** You have six seconds to press TAB before the boot-up process continues.




**4** Select an adapter and then press ENTER:



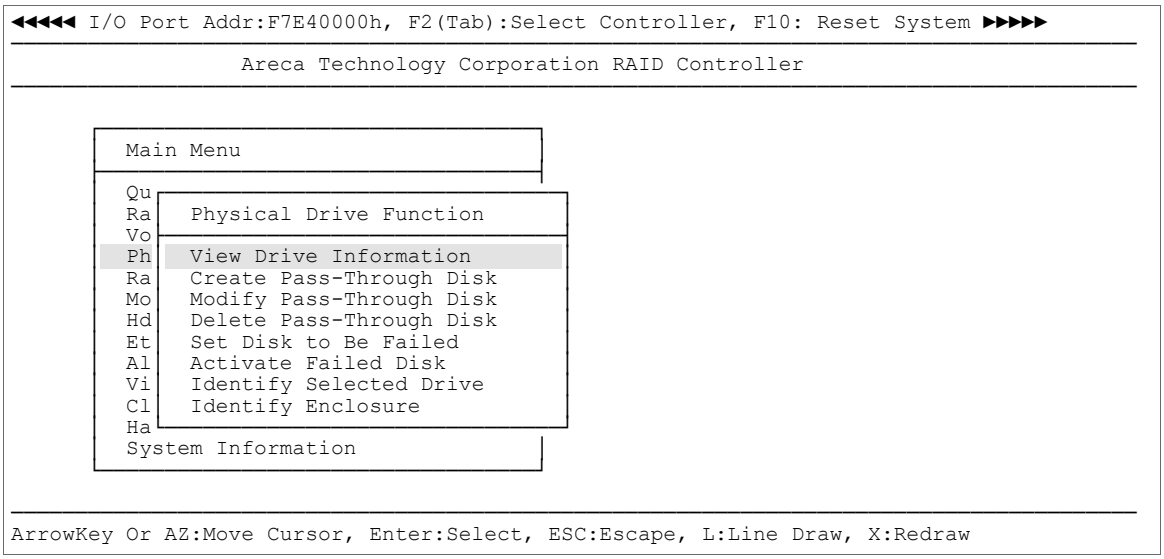

**5** Select **Physical Drives** and then press ENTER.



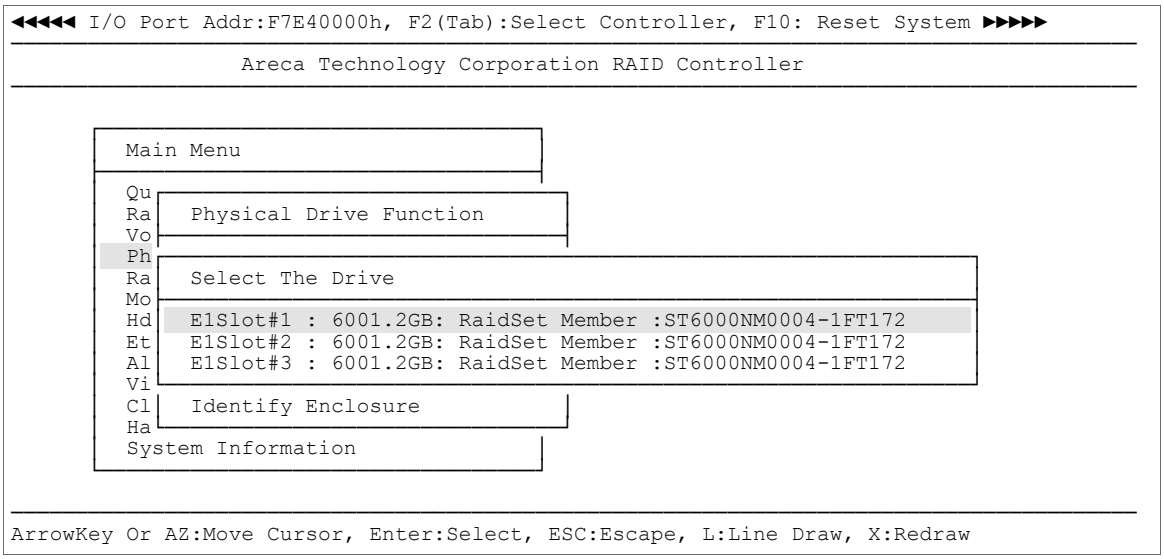

**6** When prompted for the **Password**, type the following and then press ENTER:

0000

**7** Select **View Drive Information** and then press ENTER.




**8** Three 6 TB drives should be displayed:




**9** Press ESCAPE twice. The **Main Menu** is displayed.

# 3

# Installing Linux

This chapter describes how to install the Linux operating system on a Gen-4 server.

Perform the steps in the order listed and do not skip any steps.

## 3.1 Navigating with the Keyboard

In this section, use the following keys to navigate the screens:

- **TAB** – Move between fields
- **ARROW keys** – Move between fields
- **ENTER** – Select a highlighted item, such as Continue
- **SPACE** – Select items in a list

**CAUTION:** If you hold the ENTER key down too long, it will register as multiple entries and could move ahead to the next screen faster than you wanted it to.

## 3.2 Booting to the Install CD

Perform the steps in this section to boot to the install CD.

**1** Locate the following install CD:

Ubuntu CD/DVD containing the Ubuntu Linux Server Image

The current ISO image is **ubuntu-14.04.1-server-amd64.iso** (Ubuntu Linux 14.04.1 Precise)

**2** Power on the Linux server. The following screen is displayed:

```
Reboot and Select proper Boot device
or Insert Boot Media in selected Boot device and press a key
```

**3** Insert the Ubuntu Linux 14.04 Server Installation Disk into the CD/DVD drive.

**4** Turn the Linux server power switch off, and then turn the power switch on (or press the reset switch) so that the server boots to the installation disk.

**NOTE**

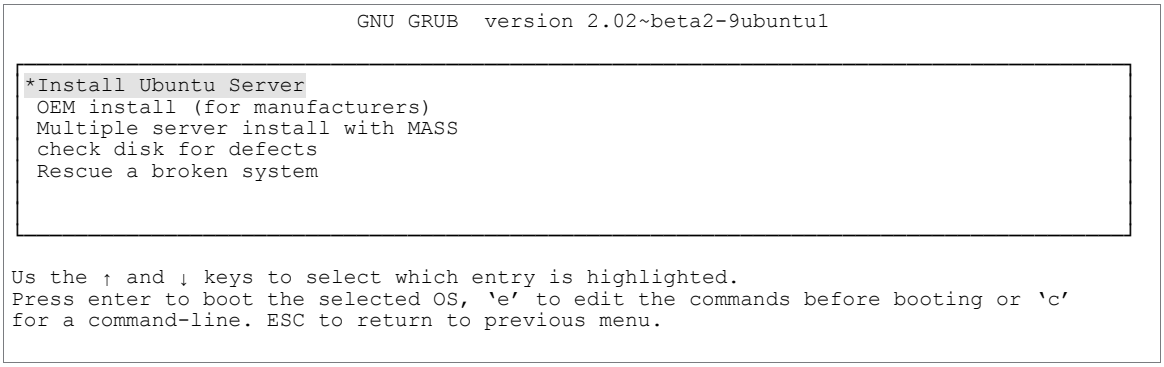
*If the Linux server does not boot to the installation disk, the system BIOS may not be configured to boot from the CD. It may be necessary to change the BIOS configuration to enable the CD-ROM to be the boot disk. Press the DELETE key during the power-on process to enter the BIOS configuration screens.*

**TIP**

*Use the TAB and ARROW keys to navigate during the installation process.*

*Select Back to retrace your steps.*

**5** On the **Ubuntu welcome** screen,
select **Install Ubuntu Server** and then press ENTER.




## 3.3 Select Language and Location

Perform the steps in this section to select the language and location.

**6** On the **Select a language** screen,
select **English** again and then press ENTER.

**7** On the **Select your location** screen,
select **United States** and then press ENTER.

## 3.4 Configure the Keyboard

On the **Configure the keyboard** screens, do the following:

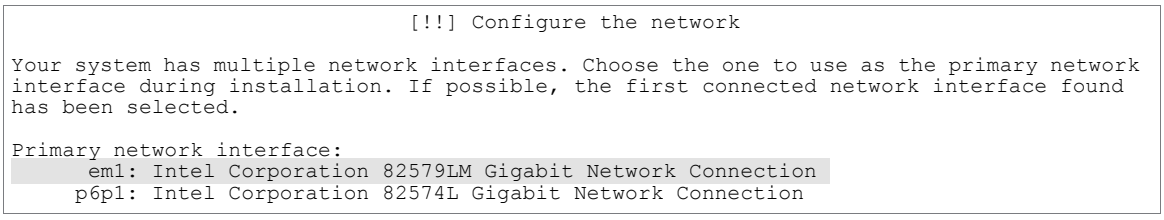
**8** For **Detect keyboard layout?**
select **No** and then press ENTER.

**9** Select **English (US)** and then press ENTER.

**10** For **Please select the layout matching the keyboard**,
select **English (US)** and then press ENTER.
Wait while it runs.

## 3.5 Configure the Network

The **Configure the network** screen is displayed. Something similar to the following is displayed.



Your system may have a different number of Ethernet (ethx) interfaces listed.

On the **Configure the network** screens, do the following:

**11** Select the row that contains **em1**, and then press ENTER.
Wait.

**12** For **Hostname**, type the following and then press ENTER:

```
wsiserver
```

## 3.6 Set up Users and Passwords

On the **Set up users and passwords** screens, do the following:

**13** For **Full name for the new user**, type the following and then press ENTER:

```
user
```

**14** For **Username for your account**, type the following and then press ENTER:

```
user
```

**15** For **Choose a password for the new user** type the following and then press ENTER:

```
user
```

**16** For **Re-enter password to verify**, type the following and then press ENTER:

```
user
```

**17** For **Use weak password**
Select **Yes** and then press ENTER.

**18** On the **Set up users and passwords** screen, **Encrypt your home directory?** option
Select **No** and then press ENTER.

## 3.7 Configure the Clock

On the **Configure the clock** screen, do the following:

**19** For **Select your time zone**,
Select **Mountain** and then press ENTER.
Wait.

If you see the following message, select **Yes** and then press ENTER:

```
Based on your present physical location, your time zone is America/Denver.

Is this the correct time zone?

    <Go Back>                                                  <Yes>      <No>
```

# 3.8 Detect Disks

On the **Detect disks** screen, do the following:

**20** For **Activate MDADM containers (Intel/DDF RAID)**
Select **Yes** and then press ENTER.

**21** For **Activate Serial ATA RAID devices**
Select **Yes** and then press ENTER.

# 3.9 Partition Disks

The steps in this section describe how to configure the following partitions:

***Table 3–1 Disk Partitions***

| Partition Name | See |
|---|---|
| / | See *"Configure the Primary (/) Partition" on page 29*. |
| /opt | See *"Configure the /opt Partition" on page 31*. |
| /home | See *"Configure the /home Partition" on page 33*. |
| /swap | Created when the RAID1 Volume is created in the BIOS configuration. See *"Intel RAID" on page 17*. |

On the **Partition disks** screens, do the following:

**22** For **Partitioning method**,
Select **Guided - use entire disk** and then press ENTER.

## 3.9.1 Delete the Existing Partition

On the **Partition disks** screens, do the following:

**23** Using the ARROW key,

select **Guided - use entire disk**, and then press ENTER.

**NOTE:** If the disk was already partitioned, you still have to do these steps.

```
                                [!!] Partition disks

The installer can guide you through partitioning a disk (using different standard
schemes) or, if you prefer, you can do it manually. With guided partitioning you will
still have a chance later to review and customise the results.

If you choose guided partitioning for an entire disk, you will next be asked which disk
should be used.

Partitioning method:

                     Guided - use entire disk
                     Guided - use entire disk and set up LVM
                     Guided - use entire disk and set up encrypted LVM
                     Manual

     <Go Back>
```

**a** For **Select disk to partition**,
select the disk to use for the boot partition and then press ENTER.

**NOTE:** You may have a different RAID device, or you may have Areca RAID drive.

```
                                [!!] Partition disks

Note that all data on the disk you select will be erased, but not before you have
confirmed that you really want to make the changes.

Select disk to partition:

                    RAID1 device #126 - 1.0 TB Software RAID device

    <Go Back>
```

**b** The next screen displays the current configuration.

**IMPORTANT:** Partition #1 must display **EFIboot**. If it does not, stop here until you resolve the boot partition error. Contact Engineering for assistance.

**NOTE:** The swap partition is created when you create the RAID1 volume in the BIOS setup.

Using the TAB key,

highlight **No** and then press ENTER.

```
                                [!!] Partition disks


f you continue, the changes listed below will be written to the disks. Otherwise, you
will be able to make further changes manually.

The partition tables of the following devices are changed:
    RAID1 device #126

The following partitions are going to be formatted:
    partition #1 of RAID device #126 as EFIboot
    partition #2 of RAID device #126 as ext4
    partition #3 of RAID device #126 as swap

Write the changes to disks?

    <Yes>                                                                <No>
```

**c** The next screen displays the current configuration again.
Select the row with the large amount of disk space and the **ext4** designation, and then press ENTER.

```
                              [!!] Partition disks

This is an overview of your currently configured partitions and mount points. Select a
partition to modify its settings (file system, mount point, etc.), a free space to create
partitions, or a device to initialize its partition table.

                    Guided partitioning
                    Configure software RAID
                    Configure the Logical Volume Manager
                    Configure encrypted volumes
                    Configure iSCSI volumes

                    RAID1 device #126 - 1.0 TB Software RAID device
                         #1    538.0 MB  B  f  EFIboot
                         #2    965.4 GB     f  ext4         /
                         #3     34.2 GB  f  swap           swap

                    Undo changes to partitions
                    Finish partitioning and write changes to disk

    <Go Back>
```

**d** The next screen displays the selected partition settings.
Select **Delete the partition** and then press ENTER.

```
                              [!!] Partition disks

You are editing partition #2 of RAID1 device #126. No existing file system was detected
in this partition.

Partition settings:

                    Name:
                    Use as:           Ext4 journaling file system

                    Mount point:      /
                    Mount options:    defaults
                    Label:            none
                    Reserved blocks:  5%
                    Typical usage:    standard
                    Bootable flag:    off

                    Copy data from another partition
                    Delete the partition
                    Done setting up the partition

    <Go Back>
```

**e** Continue to the next section to partition the disks (*"Configure the Primary (/) Partition" on page 29*).

## 3.9.2 Configure the Primary (/) Partition

On the **Partition disks** screens, do the following:

**24** Using the ARROW key,
highlight the row that displays **FREE SPACE** and then press ENTER.

```
                              [!!] Partition disks

This is an overview of your currently configured partitions and mount points. Select a
partition to modify its settings (file system, mount point, etc.), a free space to create
partitions, or a device to initialize its partition table.

                    Guided partitioning
                    Configure software RAID
                    Configure the Logical Volume Manager
                    Configure encrypted volumes
                    Configure iSCSI volumes

                    RAID1 device #126 - 1.0 TB Software RAID device
                         #1    538.0 MB  B  f  EFIboot
                               965.4 GB        FREE SPACE
                         #3     34.2 GB  f  swap          swap

                    Undo changes to partitions
                    Finish partitioning and write changes to disk

    <Go Back>
```

**a** For **How to use this free space**,
select **Create a new partition** and then press ENTER.

```
How to use this free space:
     Create a new partition
     Automatically partition the free space
     Show Cylinder/Head/Sector Information
```

**b** For **New partition size**,
type **80.0 GB** and then press ENTER.

80.0 GB is the allocated size for the primary disk.

```
                              [!!] Partition disks

The maximum size for this partition is 964.4 GB.

Hint: "max" can be used as a shortcut to specify the maximum size, or enter a percentage
(e.g. 20%) to use that percentage of the maximum size:

New partition size:

80.0 GB
```

**c** For **Location for the new partition**,
select **Beginning** and then press ENTER.

```
Please choose whether you want the new partition to be created at the beginning or at the
end of the available space.

Location for the new partition:
     Beginning
     End
```

# 4

# Installing Debian Packages

This chapter describes how to install the Debian packages. You must have successfully completed the steps in *"Installing Linux, Gen-1" on page 36* before installing the Debian packages.

Perform the steps in the order listed and do not skip any steps.

**VERY IMPORTANT:** Install these Debian packages described in this chapter in the order listed.

**NOTE**

*See "9. Linux Command Reference" on page 91 for an explanation of the commands used in this section.*

## 4.1 Log In to the Server

To log in, do the following:

**1** If the server is powered off, power on the Linux server.

**2** If you are still logged in to the server after installing Linux, skip to *step 8 on page 39*.

**3** After the server reboots, the following is displayed:

```
Ubuntu 14.04.1 LTS wsiserver tty1
server login:
```

**4** For **login**, type the following and then press ENTER:

```
user
```

```
Ubuntu 14.04.1 LTS server tty1
server login: user
password:
```

**5** For **password**, type the following and then press ENTER

```
user
```

```
Ubuntu 14.04.1 LTS wsiserver tty1
server login: user
password: user
```

The following is displayed:

```
Added user user
Welcome to Ubuntu 14.04.1 LTS
   ...
<other Ubuntu information>
   ...
user@server:~$
```

## 4.2 Install Standard Debian Packages from the Internet

This section describes how to install standard Debian packages from the Internet.

**6** Verify that the Ethernet cable is connected to the Internet.

**7** At the command line, type the following, and then press ENTER:

```
sudo apt-get install dkms nfs-common nfs-kernel-server ntp pmount usbmount unzip
gdebi
```

## 4.3 Copy the Debian Packages

This section describes how to copy the Company Name Debian packages from the CD.

**8** Insert the Debian Packages CD/DVD.

**9** Mount the CD/DVD:

**a** Change to the **mnt** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /mnt
```

**b** Create the **cdrom** directory by typing the following at the command prompt and then pressing ENTER:

```
sudo mkdir cdrom
```

**NOTE:** The first time you use the `sudo` command, you are prompted for the password. Type the following and then press ENTER:

```
user
```

**c** Mount the CD by typing the following at the command prompt and then pressing ENTER:

```
sudo mount -t auto /dev/cdrom /mnt/cdrom
```

Wait. The following message is displayed:

```
mount:block device /dev/sr0 is write protected, mounting read-only
```

**10** Copy the Debian packages:

**a** Change to the **root (/)** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /
```

**b** Create a new **packages** directory for the files by typing the following at the command prompt and then pressing ENTER:

```
sudo mkdir packages
```

**c** Change to the **packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd packages
```

**d** Copy the packages to this new directory by typing the following at the command prompt and then pressing ENTER:

```
sudo cp -r /mnt/cdrom/* /packages/
```

Wait. This will take a few minutes.

**11** Verify that the files were successfully copied:

**a** Change to the **packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /packages
```

**b** List the contents of the **packages** directory by typing the following at the command prompt and then pressing ENTER:

```
ls
```

The following directories are displayed:

```
ActiveMQ_Packages
Java_Packages
Company_Packages
Company_Server_Setup_Packages
```

**12** Unmount the CD/DVD by typing the following at the command prompt and then pressing ENTER:

**NOTE:** The Linux unmount command is spelled `umount` — without the `n`.

```
sudo umount /mnt/cdrom
```

**13** Eject the CD/DVD by typing the following at the command prompt and then pressing ENTER:

```
sudo eject -v
```

The CD is ejected; remove it from the drive.

## 4.4 Install Areca RAID Driver and Software

This section describes how to install Areca RAID drivers and software.

**14** Change to the **/Packages/Company_Packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /Packages/Company_Packages
```

**15** Install the software by typing the following at the command prompt and then pressing ENTER:

```
sudo gdebi company-areca-raid_1.1.1.1-1local_amd64.deb
```

**NOTE:** If you get an error message that **gdebi** cannot be found, go back to *"Install Standard Debian Packages from the Internet" on page 39*.

**16** Check for the **/export** file system by typing the following at the command prompt and then pressing ENTER:

```
df -h
```

**a** If the **/export** directory is listed, go to *" Install the Company Server Setup Packages" on page 42*.

**b** If the **/export** directory is not listed, you will need to add an entry to mount the Areca RAID5 volume by using the UUID of that volume. Go to the next step.

**17** To display the UUID of the Areca RAID5 volume, type the following at the command line and then press ENTER:

```
sudo blkid
```

Something similar to the following is displayed:

```
UUID="ffd78f29-8d33-4180-bb7b-66f7a48f2332" TYPE="ext4"
```

**NOTE:** If there is no UUID entry returned, there is no file system. Contact Engineering for assistance.

**18** Using a text editor, open the **etc/fstab** file and create an entry using the UUID from the previous step. Use the same parameters as the **/opt** entry. For example:

```
UUID=ffd78f29-8d33-4180-bb7b-66f7a48f2332 /export ext4 defaults 0 2
```

Save and exit the file.

## 4.5 Add Gateway to Interfaces File

The gateway IP address needs to be added to the **interfaces** file.

**19** Open the following file with a text editor:

```
/etc/network/interfaces
```

**20** Add the following line at the end of the file:

```
gateway 10.102.1.2
```

**21** Save and close the file. The interfaces file should look like the following figure:

```
auto eth0
    iface eth0 inet static
        address 10.102.1.2
        netmask 255.255.255.0
        gateway 10.102.1.2
```

## 4.6 Install the Company Server Setup Packages

This section describes how to install the Company Server Setup packages.

**VERY IMPORTANT:** Install these Debian packages in the order listed.

**22** Change to the **Company_Server_Setup_Packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /packages/Company_Server_Setup_Packages
```

**TIP:** Use the TAB key to auto-complete long file names or directories:
For example, type the following and then press TAB.:
`cd /packages/Company`
Verify that the correct directory name is returned: `Company_Server_Setup_Packages`

**23** Install the Company Server Setup Debian package by typing the following at the command prompt and then pressing ENTER:

```
sudo gdebi company-server-setup_1.0-1local_amd64.deb
```

Type **y** and then press ENTER for all prompts.

**TIP:** Use the TAB key to auto-complete long file names or directories:
For example, type the following and then press TAB.:
`sudo gdebi company-`
Verify that the correct file name is returned: `company-server-setup_1.0-1local_amd64.deb`

**24** If the following screen is displayed, there is an `/etc/hosts` file already on the system. Type **Y** and then press ENTER:

```
Configuration file '/etc/hosts'
==> File on system created by you or by a script.
==> File also in package provided by package maintainer.
  What would you like to do about it? Your options are:
    Y or I  : install the package maintainer's version
    N or O  : keep your currently-installed version
      D     : show the differences between the versions
      Z     : start a shell to examine the situation
The default action is to keep your current version.
***  hosts (Y/I/N/O/D/Z) [default=N] ? Y
```

**25** Verify that the Company Server Setup installed correctly.

**a** Type the following at the command prompt and then press ENTER:

`company_info`

**NOTE**: You can run this script at any time after company-server-setup is installed to check the status of your Server.

**IMPORTANT**: The important items to check at this time are the IP address (10.102.1.2), that SSH is running, and that Samba is running.

At this stage in the install, the following is an example of what the `company_info` command returns:

```
COMPANY_INFO

Operating System Information
============================
OS Version: Ubuntu 14.04.1 LTS
Linux version 3.11.0-15 generic (additional Linux information)
Mount info:
Network Interface:
eth0      Link encap:Ethernet  HWaddr 00:01:29:54:a2:0a
          inet addr: 10.102.1.2  Bcast:10.255.255.255  Mask:255.0.0.0

          (other information that is normally returned from the ifconfig command)

SYSCTL.CONF Network additions:

(other information that is not relevant at this time)

SSH Status:  *sshd is running

JAVA Information
================
java is NOT installed!

ActiveMQ Information
====================
ActiveMQ is NOT installed!

Central Server Information
==========================
Central Server is NOT installed!

SAMBA Status: smbd start/running, process 886
```

**b** Type the following at the command prompt and then press ENTER to view the status of each Company package as it is installed:

```
dpkg -l "company*"
```

At this stage in the install, the following is an example of what is returned:

```
||/ Name                    Version         Description
+++-=======================-===============-==================================
ii  company-server-setup    1.0-1local      Central Server initial setup
```

## 4.7 Install Java

This section describes how to install Java.

**26** Change to the **Java_Packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /packages/Java_Packages
```

**27** Install the Java Debian package by typing the following at the command prompt and then pressing ENTER:

```
sudo gdebi oracle-j2sdk1.7_1.7.0+update45_ws_amd64.deb
```

**TIP:** Use the TAB key to auto-complete long file names or directories:
For example, type the following and then press TAB.:
`sudo gdebi oracle-`
Verify that the correct file name is returned: `oracle-j2sdk1.7_1.7.0+update45_ws_amd64.deb`

Type **y** and then press ENTER for all prompts.

**28** Verify that the Java Debian package installed correctly.

**a** Type the following at the command prompt and then press ENTER:

```
jps
```

The jps process that is running is displayed. For example, `6716 Jps`.

**b** Type `company_info` and then press ENTER. When Java is installed, the following is displayed:

```
JAVA Information
================
/usr/java --> /usr/lib/jvm/j2sdk1.7-oracle
java version "1.7.0_45"
Java(TM) SE Runtime Environment (build 1.7.0_45-b18)
Java HotSpot(TM) 64-bit Server VM (build 24.45-b08, mixed mode)
```

## 4.8 Install the ActiveMQ

This section describes how to install ActiveMQ.

**29** Change to the **ActiveMQ_Packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /packages/ActiveMQ_Packages
```

**30** Install the ActiveMQ Debian package by typing the following at the command prompt and then pressing ENTER:

```
sudo gdebi company-activemq_5.7.0-1local_amd64.deb
```

**TIP:** Use the TAB key to auto-complete long file names or directories:
For example, type the following and then press TAB.:
`sudo gdebi company-`
Verify that the correct file name is returned: `company-activemq_5.7.0-1local_amd64.deb`

Type **y** and then press ENTER for all prompts.

**31** Verify that the ActiveMQ Debian package installed correctly.

**a** Type the following at the command prompt and then press ENTER:

```
jps
```

The processes that are running are displayed. For example:

```
1216 run.jar
1995 Jps
```

**b** Type `company_info` at the command prompt and then press ENTER. When ActiveMQ is installed, the following is displayed:

```
ActiveMQ Information
====================
ActiveMQ Status: INFO: Loading 'etc/default/activemq'
INFO: Using java '/usr/java/bin/java'
ActiveMQ is running (pid '****')
```

**c** Type the following at the command prompt and then press ENTER to view the status of each Company package as it is installed:

```
dpkg -l "company*"
```

At this stage in the install, the following is an example of what is returned:

```
||/ Name                  Version         Description
+++-=====================-===============-==================================
ii  company-activemq       5.7.0-1local    Apache ActiveMQ for Company Server
ii  company-server-setup   1.0-1local      Central Server initial setup
```

## 4.9 Install Company Server

This section describes how to install the current build of Company Server.

**32** Change to the **Company_Packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /packages/Company_Packages
```

**33** List the files in the **Company_Packages** directory by typing the following at the command prompt and then pressing ENTER:

```
ls
```

**IMPORTANT:** Note that the two file names in this directory are very similar. Be very careful to select the correct file names in the following steps. If you make a mistake, you will have to start over from the beginning of this chapter.

```
company-server_2.6.0.425-1local_amd64.deb company-server-
help_2.6.0.425-1local_amd64.deb
```

**NOTE:** The file name will contain the latest build number. In the above example, the build number is 425.

**34** Install the company-server Debian package by typing the following at the command prompt and then pressing ENTER:

```
sudo gdebi company-server_2.6.0.425-1local_amd64.deb
```

Type **y** and then press ENTER for all prompts.

**TIP:** Use the TAB key to auto-complete long file names or directories:
For example, type the following and then press TAB:
`sudo gdebi company-server_2`
Verify that the correct file name is returned: `company-server_2.6.0.425-1local_amd64.deb`

**35** Configure the Server by typing the following at the command prompt and then pressing ENTER:

**IMPORTANT**:
- *Every time* you install a new company server build, this script must be run. - This script wipes out your database.
- Nothing will work if you skip this step.

```
company_config_server
```

Wait. This command sets up all of the "user" user permissions, creates the database user and permissions, and sets up the database.

**36** Reboot the Server by typing the following at the command prompt and then pressing ENTER:

```
sudo reboot
```

**37** Log in to the server as described at the beginning of this chapter (*step 3 on page 38* through *step 5 on page 38*).

**38** Verify that the Company Server installed correctly by typing the following at the command prompt and then pressing ENTER:

```
company_info
```

At this stage in the install, the following is an example of what the `company_info` command returns:

```
COMPANY_INFO

Operating System Information
============================
OS Version: Ubuntu 14.04.1 LTS
Linux version 3.11.0-15 generic (additional Linux information)
Mount info:
Network Interface:
eth0      Link encap:Ethernet HWaddr 00:01:29:54:a2:0a
          inet addr: 10.102.1.2   Bcast:10.102.1.255  Mask:255.255.255.0

          (other information that is normally returned from the ifconfig command)

SYSCTL.CONF Network additions:

(other information that is not relevant at this time)

SSH Status: *sshd is running

JAVA Information
================
/usr/java --> /usr/lib/jvm/j2sdk1.7-oracle
java version "1.7.0_45"
Java(TM) SE Runtime Environment (build 1.7.0_45-b18)
Java HotSpot(TM) 64-bit Server VM (build 24.45-b08, mixed mode)

ActiveMQ Information
====================
ActiveMQ Status: INFO: Loading 'etc/default/activemq'
INFO: Using java '/usr/java/bin/java'
ActiveMQ is running (pid '****')

Central Server Information
==========================
Server Version: 2.6.0.425
/opt/company/xx/current --> v2.6
/home/company/company/current --> /home/company/company/v2.6
Central Server Status:
/etc/default/company profile exists -- sourced for environment:
  JAVA_HOME = /usr/java
  CENTRAL_VERSION = 2.6
  CENTRAL_USER = user
  CENTRAL_USER_HOME = /home/user
  CENTRAL_HOME = /opt/user/xx/v2.6/server
  CENTRAL_CONF_DIR = /home/user/company/v2.6/server/conf CENTRAL_LOG_DIR = /home/user/
  company/v2.6/server/logs CENTRAL_PATCH_DIR = /home/user/company/patches

PID for process McpBootstrap : 1351
Help is NOT installed
Server Configured: YES

SAMBA Status: smbd start/running, process 886
```

**TIP:** Type the following at the command prompt and then press ENTER to view the status of each Company package as it is installed:

```
dpkg -l "company*"
```

At this stage in the install, the following is an example of what is returned:

```
||/ Name                    Version         Description
+++-=======================-===============-==================================
ii  company-activemq        5.7.0-1local    Apache ActiveMQ for Company Server
ii  company-server          2.6.0.425-1local Central Server
ii  company-server-         1.0-1local      Central Server initial setup
setup
```

**39** Verify that the software has started correctly by typing the following at the command prompt and then pressing ENTER:

```
jps
```

The processes that are running are displayed. For example:
```
1216 run.jar
1995 Jps
1351 McpBootstrap
```

## 4.10 Install Help

This section describes how to install the Help system.

**40** Change to the **Company_Packages** directory by typing the following at the command prompt and then pressing ENTER:

```
cd /packages/Company_Packages
```

**41** Install the company-server-help Debian package by typing the following at the command prompt and then pressing ENTER:

```
sudo gdebi company-server-help_2.6.0.425-1local_amd64.deb
```

Type **y** and then press ENTER for all prompts.

**TIP:** Use the TAB key to auto-complete long file names or directories:
For example, type the following and then press TAB.:
`sudo gdebi company-server-help`
Verify that the correct file name is returned: `company-server-help_2.6.0.425-1local_amd64.deb`

**42** Verify that the help system installed by typing the following at the command prompt and then pressing ENTER: `company_info`

In the Central Server Information section, the following is displayed:

```
Central Server Information
==========================
Server Version: 2.6.0.425
/opt/user/xx/current --> v2.6
/home/user/company/current --> /home/user/company/v2.6
Central Server Status:
/etc/default/profile exists -- sourced for environment:
  JAVA_HOME = /usr/java
  CENTRAL_VERSION = 2.6
  CENTRAL_USER = user
  CENTRAL_USER_HOME = /home/user
  CENTRAL_HOME = /opt/user/xx/v2.6/server
  CENTRAL_CONF_DIR = /home/user/company/v2.6/server/conf CENTRAL_LOG_DIR = /home/user/
  company/v2.6/server/logs CENTRAL_PATCH_DIR = /home/user/company/patches

PID for process McpBootstrap : 1351
Help is installed
Server Configured: YES
```

**TIP:** Type the following at the command prompt and then press ENTER to view the status of each Company package as it is installed:

```
dpkg -l "company*"
```

At this stage in the install, the following is an example of what is returned:

**NOTE**: Java is not listed because it is not part of custom Company software.

```
||/ Name                    Version         Description
+++-=======================-===============-==================================
ii  company-activemq        5.7.0-1local        Apache ActiveMQ for Company Server
ii  company-server          2.6.0.425-1local    Central Server
ii  company-server-help     2.6.0.425-1local    Central Server help files
ii  company-server-setup    1.0-1local          Central Server initial setup
```

**43** Go to *"5. Installing Client Software" on page 50* to proceed with the installation.

# 9

# Linux Command Reference

This section describes the Linux commands used in this document.

For a comprehensive list of Linux commands, see the following link:

http://www.oreillynet.com/linux/cmd/

Commands can have variables and optional items. The following format is used in this document to describe commands:

```
sample [options] <variables>
```

where:

- `sample`
  The command name
- `<variable>`
  A variable name
  For example, a file name or directory name.
  Do not type the angled brackets.
- `[options]`
  An option.
  For example, `-r`
  Do not type the square brackets.

Example syntax:

```
cp [options] <source directory name/filenames> <destination directory name>
```

Example command:

```
cp -r /mnt/cdrom/* /packages/
```

## Symbols

**/**

Forward slash. A character used to separate directories, or to specify the root directory.

```
Example: cd /mnt
```

*****

Asterisk. A character used as a wild card to match zero or more characters.

```
Example: cp /mnt/cdrom/* /packages/
```

## A

**apt-get**

B

A command line tool for handling packages.

```
Syntax: apt-get [options] [-o config=string] [-c=cfgfile] command [pkg]

Example: sudo apt-get install dkms nfs-common nfs-kernel-server ntp
      pmount usbmount unzip gdebi
```

## B

### blkid

Locate and print block device attributes, for example a label (-L) or UUID (-U).

```
Syntax: blkid [options]

Example: sudo blkid
```

## C

### cd

Change Directory. Go to the specified directory.

```
Syntax: cd <directory name>

Example: cd /mnt
```

### cp

Copy. Copy from a location to a location.

```
Syntax: cp [options] <source directory name/filenames> <destination directory
      name>

Example: cp -r /mnt/cdrom/* /packages/

Options:

-r     Copy directories recursively; that is, any existing directory structure
      is copied along with the files.

*      Copy all files in the listed directory.
```

## D

### df

Report disk file usage. (-h = human readable)

```
Syntax: df [options] <filename>

Example: df -h
```

### dmraid

Display RAID status. (-s = properties, -v = verbose)

```
Syntax: dmraid [options]

Example: sudo dmraid -s -v
```

### dmsetup

Check RAID status.

```
Syntax: dmsetup [options]
```

```
Example: dmsetup status
```

### dpkg

Debian package

```
Syntax: dpkg [options] <filename>

Example: dpkg -i *.deb

Options:

-i      Install the Debian package listed. Use an asterisk (*) to specify all
        packages.

-l      List all installed Debian packages. -

*       Copy all files that have the .deb extension.
```

## E

### eject

Eject the CD from the drive.

```
Syntax: eject [options]

Example: sudo eject -v
```

## G

### gdebi

Graphical interface Debian installer

```
Syntax: gdebi <filename>

Example: gdebi company-server-setup_1.0-1local_amd64.deb
```

## I

### install

Used with the apt-get command to install packages.

## J

### jps

Java process status. Lists the processes.

```
Syntax: jps

Example: jps
```

## L

M

### ls

List. Lists the contents of the current directory.

```
Syntax: ls [options] <names>
Example: ls
```

## M

### mkdir

Make directory. Create a directory.

```
Syntax: mkdir
Example: mkdir cdrom
```

### mount

Mount. Make a device (CD) available with a specific directory name.

```
Syntax: mount [options] <device> <directory>
Example: mount -t auto /dev/cdrom /mnt/cdrom
Options:
-t      type
       Specifies the filesystem type.
       auto
       Specifies that the filesystem type is auto-detected.
```

## R

### reboot

Reboot. Restart the system.

```
Syntax: reboot [options]
Example: reboot
```

## S

### sudo

Super user do. Allows you to run administrative commands. The first time you use the `sudo` command in a session, you are prompted for your password.

```
Syntax: sudo [options] [command]
Example: sudo mkdir cdrom
```