Installing Acme Packet Software on HP Platforms

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ORACLE

Contents

About This Guide

Overview

This document describes how to install Acme Packet software onto Acme Packet-supported HP hardware platforms.

Audience

This guide is written for technicians who will be installing Acme Packet software onto any of the HP hardware platforms. Only experienced and authorized personnel should perform these installation tasks.

Revision History

This section contains a revision history for this document.

Date	Revision Number	Description
November 1, 2013	Revision 1.0	• First release

Installing Acme Packet Software on HP-Supported Platforms

Overview

This document describes how to install Acme Packet S-CZ or E-CZ software onto the following Acme Packet-supported HP platforms:

- HP DL360p Gen8
- HP BL460c Gen8

Obtaining the Acme Packet Acme USB Module and License Key

The S-Cz software is available directly from your Acme Packet customer support representative. The software is pre-installed onto a Acme USB module. When you receive the USB module, a document is included that presents the software license key.

Installing Acme Packet Software Onto a HP Server

This section describes in general the steps to take to install Acme Packet software onto a HP server. Detailed procedures for each of these steps is provided in the remainder of this document.

Prerequisite:

- Acme Packet Acme USB module containing S-Cz
- Acme Packet License Key that comes with the Acme USB module
- HP DL360p Gen8 Server or HP BL460c Gen8 Server running the iLO4 Web Interface

To install Acme Packet software onto a HP server:

1. Check the current firmware revisions.
2. Upgrade the firmware revisions if necessary.
3. Change the BIOS settings.
4. Create a single RAID logical volume that spans all physical disks.
5. Shut down and disconnect power from the HP server.
6. Install the Acme Packet Acme USB module into any internal USB port.
7. Connect power and power up the HP server.
8. The HP server automatically installs software from the USB key onto the hard drive(s). Then the USB key automatically reboots the server.

9. Log in to the ACLI and enable super user mode.
10. Format the hard disk.
11. Install the Acme Packet license key.
12. Reboot.
13. Log in to the ACLI and enable user mode.

    The Acme Packet software is now licensed and the system is ready to be configured. Refer to the *Net-Net Administration and Configuration Guide* for the Acme Packet software product being used to configure the wancom0 management network interface and other boot parameters.

Checking Current Firmware Versions

The current list of supported firmware versions of the HP server can be obtained from the bill of material available from your Acme Packet customer service representative.

To check the current firmware versions, in the iLO4 web interface, navigate to Information > System Information > Firmware.[1] The Firmware tab displays a list of the firmware and firmware version numbers in use on the system.

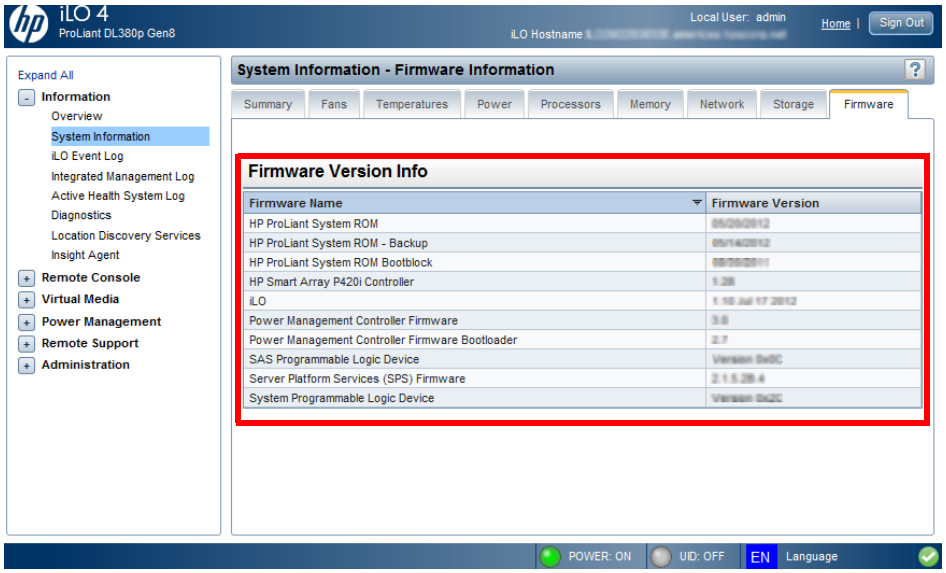

Figure 4 - 1. iLO4 Firmware Tab

Upgrading the Firmware Version

This section presents the recommended way to update the firmware on the Acme Packet-supported HP server with the HP Service Proliant Pack (SPP) or SPP components using the iLO manager by remotely booting an SPP image file. The SPP

1. For information on accessing iLO4, please refer to the *Net-Net 7000 Series Hardware Installation Guide* (for the HP DL360p Gen 8) or the *Net-Net 17350 Series Hardware Installation Guide* (for the HP BL460c Gen8).

release set contains a comprehensive collection of firmware and system software components, all tested together as a single solution stack for HP servers, their options, and limited external storage.

> **Note:** Please contact your Acme Packet Customer Support representative for a list of the most current supported firmware version for the Acme software release you are installing.

Prerequisites:

- Download the latest Acme-specified version of SPP .ISO image file
- Create a connection to the iLO web interface. (Consult your HP iOL4 documentation to determine how to do this.)
- HP iLO4 Advanced license installed. The user may purchase this license, or obtain a free 60-day trial copy of the license at this link: *http://h18013.www1.hp.com/products/servers/management/iloadvanced/index.html*.

To update your HP server's firmware:

1. Once you are at the iLO web interface, expand the Remote Console node on the left pane and click the revealed Remote Console option as shown below. Next, click the Launch button in the Integrated Remote Console section.

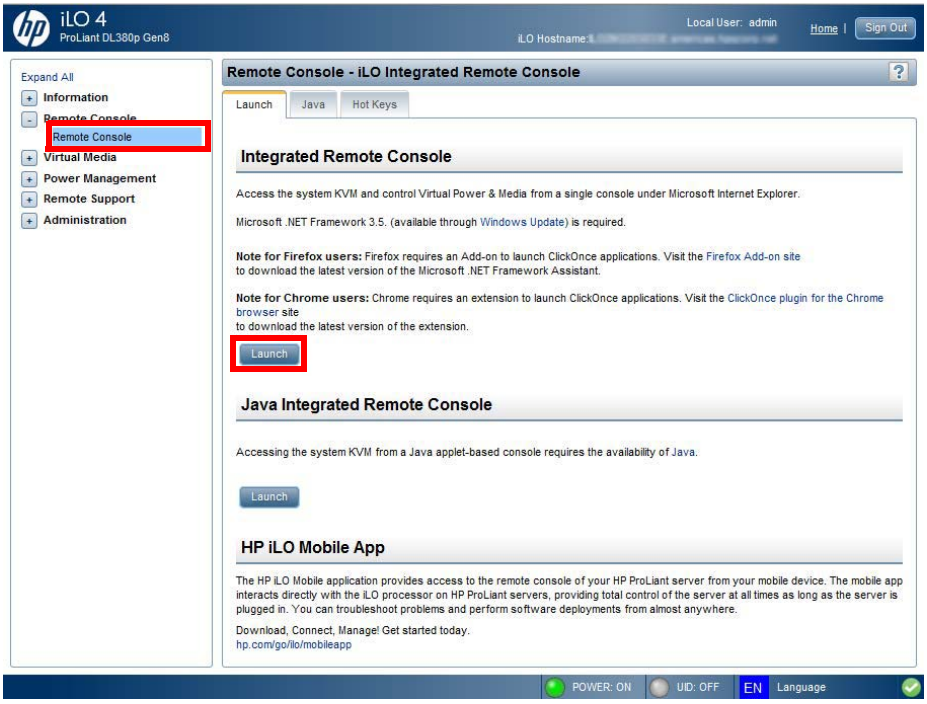

Figure 4 - 2. Launching the Integrated Remote Console

2. In the integrated remote console window that pops up, click the Virtual Drive menu. Click the image file choice and select the ISO that you downloaded from the HP web site.
3. Click the Power switch menu, and click the reset option. The server will reboot.

4. As the server reboots, press the F10 key quickly to access the boot menu.

Figure 4 - 3. Splash Page

5. When the boot options appear, select option 1) One Time Boot to CD-ROM.

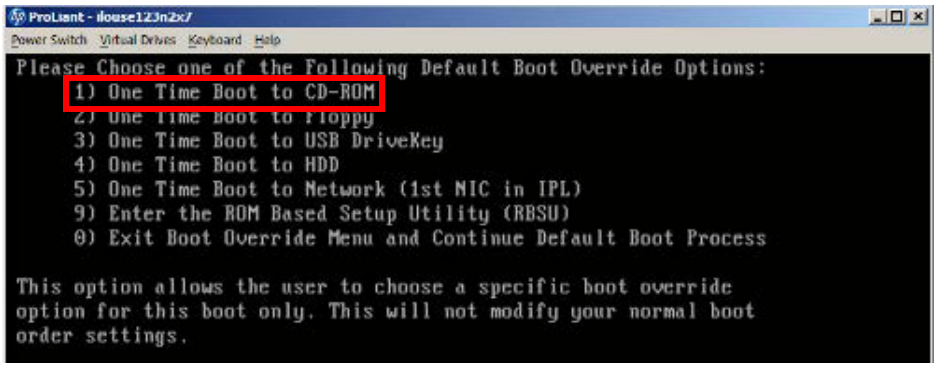

Figure 4 - 4. Selecting a Boot Option from CD-ROM

6. Select the Interactive Firmware Update option from the list. This will boot HP Linux.

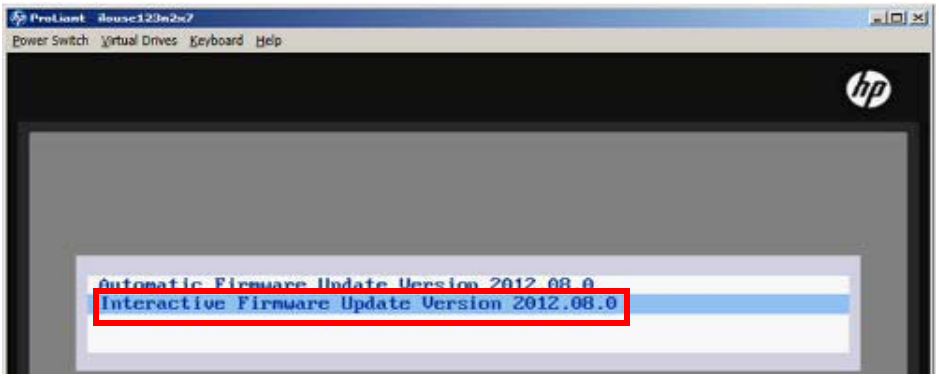

Figure 4 - 5. Selecting the Interactive Firmware Update Option

7. Select English.
8. After reading the EULA, click the license agreement radio button to accept the license terms, and then click Next.

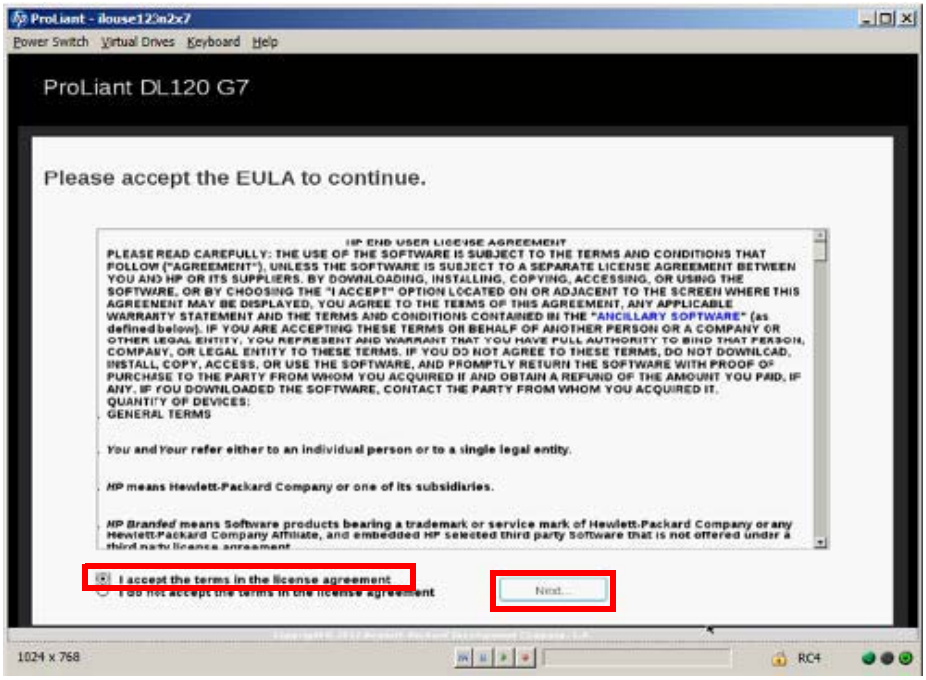

Figure 4 - 6. Accepting the License Agreement

9. Select Launch HP SUM to begin the HP Smart Update Manager.

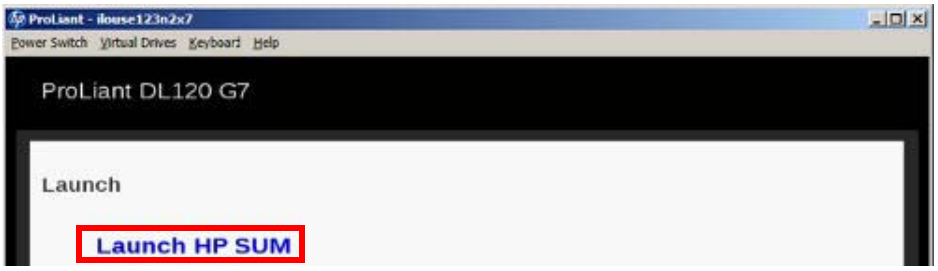

Figure 4 - 7. Launching the HP Smart Update Manager

10. Review the HP SUM overview screen carefully and click Next.

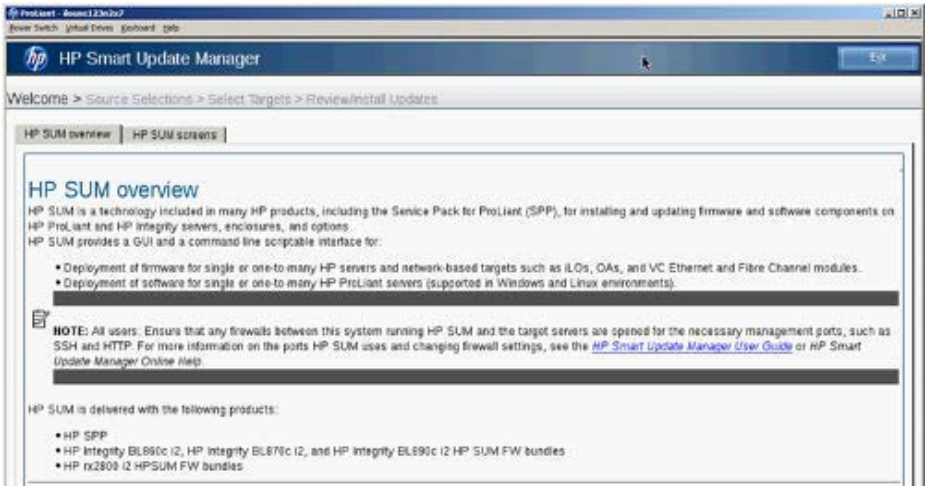

Figure 4 - 8. HP Smart Update Manager Overview

11. The self discovery process begins. Status bars indicate the progress of the process.

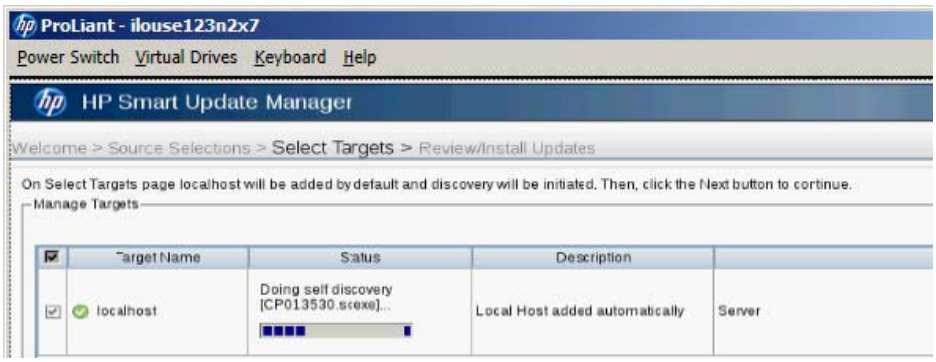

Figure 4 - 9. Self Discovery In Process

12. After self discovery concludes, click Next. Then click the Installation Options button.

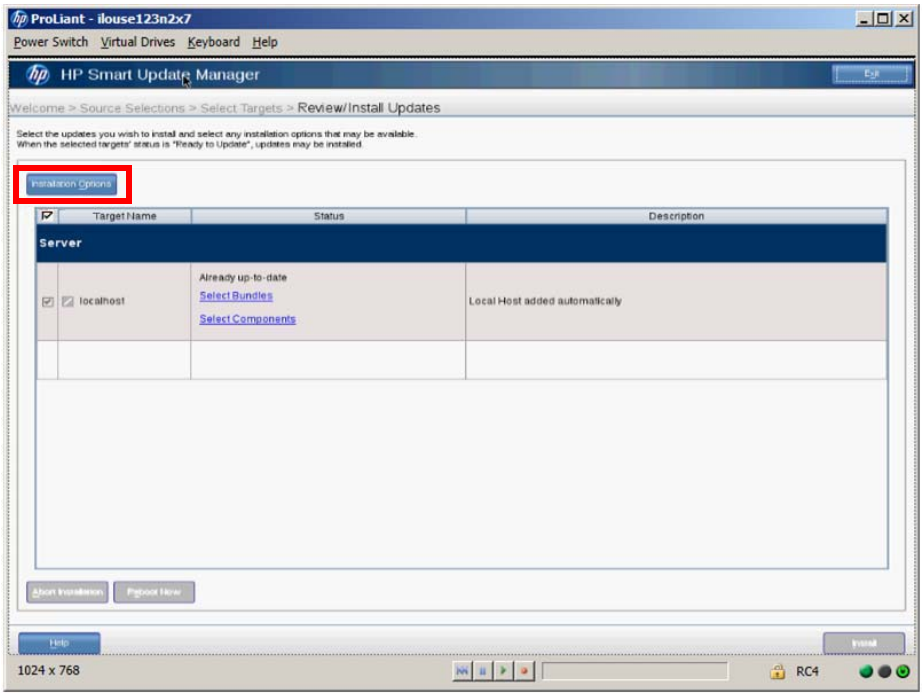

Figure 4 - 10. Installation Options Selection

13. Click the checkboxes for these options to enable them and then click OK:

- Enable force options
- Downgrade
- Firmware

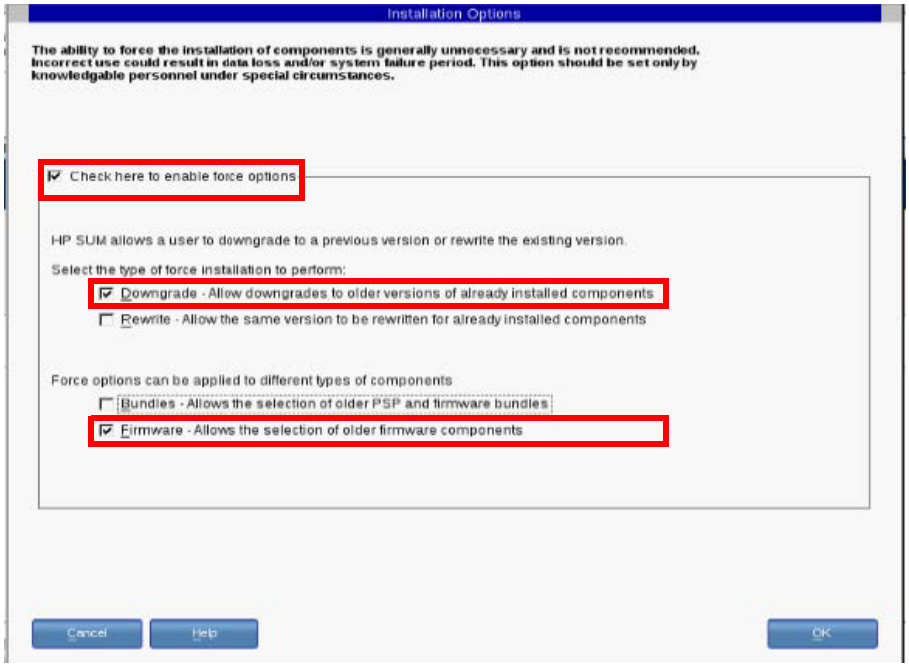

Figure 4 - 11. Enabling Options

14. From the Review/Install Updates page, click the Select Components link of the localhost server row.

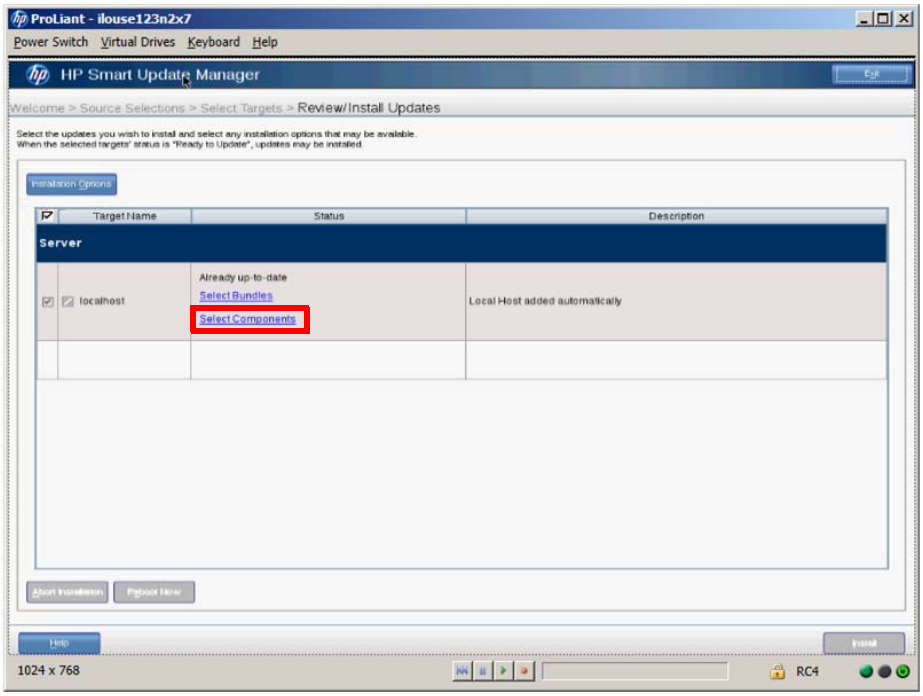

Figure 4 - 12. Installation Options Selection

15. For each component that does not match the SPP version, click the appropriate checkbox to enable installation (upgrade or downgrade). This will force the use of the SPP firmware over previously installed versions to ensure the correct baseline firmware set is used.

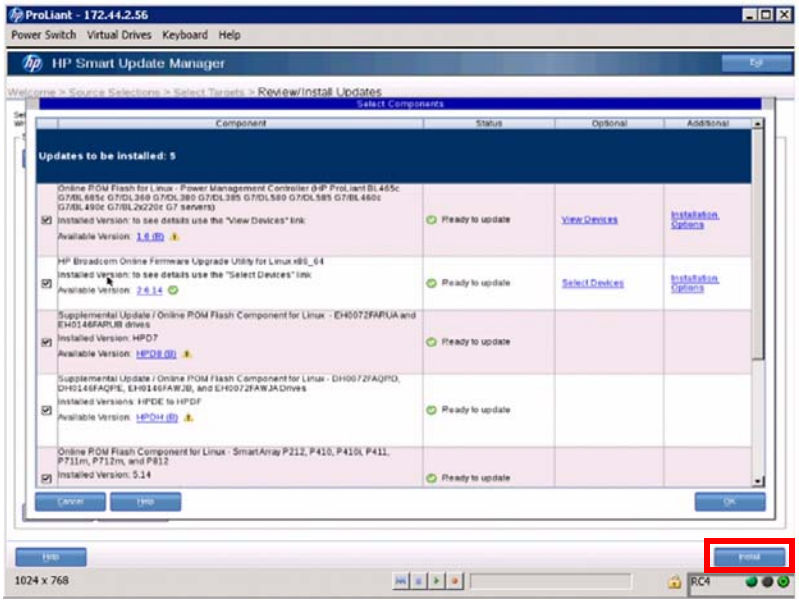

Figure 4 - 13. Selecting Updates

16. Click the Install button.

Note: The installation process may take up to 45 minutes to complete.

Note: If iLO firmware is required, an iLO restart may disconnect the Integrated Remote Console. If this happens, reconnect to the iLO4 web interface. The iLO upgrade status will be displayed at the bottom of the window. After the iLO upgrade has completed, it will reboot. Repeat the procedure starting at step 1 to update firmware on the remaining components.

After all firmware has been updated, the Reboot button will be enabled.

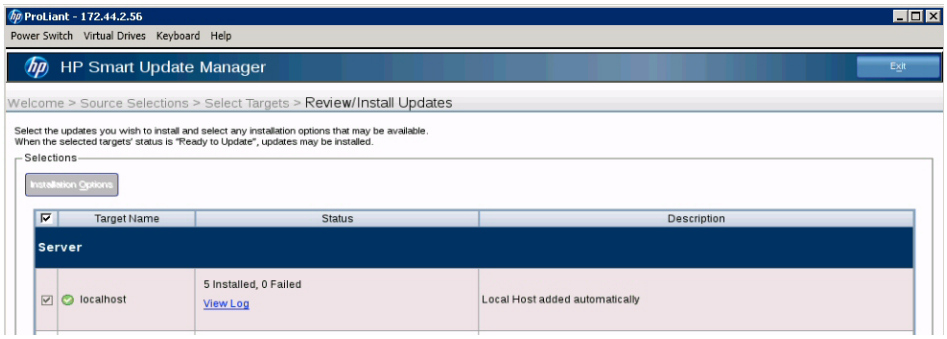

Figure 4 - 14. Installation Progress

17. Select the Click to Reboot option. The server reboots.

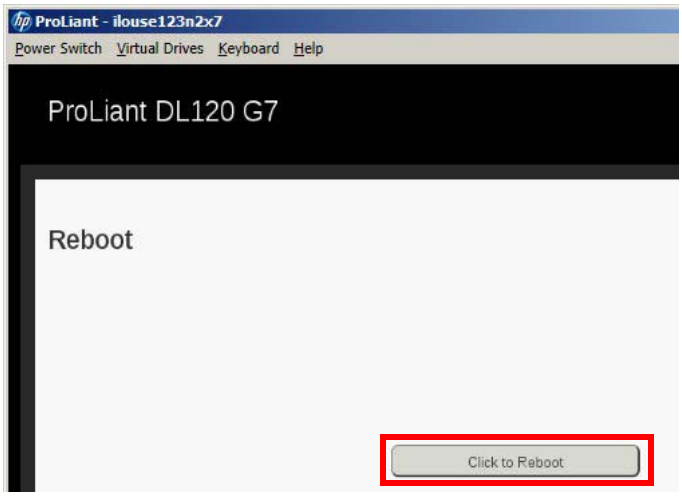

Figure 4 - 15. Rebooting the Server

Setting the HP Server BIOS

The BIOS of the supported HP server must be configured appropriately prior to installing the Acme Packet software.

The following procedure describes the required BIOS settings to make in the ROM-Based Setup Utility (RBSU) of the HP DL360p Gen8 or HP BL460c.

To set the BIOS on Acme Packet-Supported HP Servers:

1. Boot the server. Near the end of the boot process, the boot options screen is displayed for several seconds before the system boots from the supported boot device. During this time, press F9 to access the RBSU.
2. Set USB to the first boot device followed by the disk controller. To set the standard boot order, select the option Set the IPL Device Boot Order to 3.

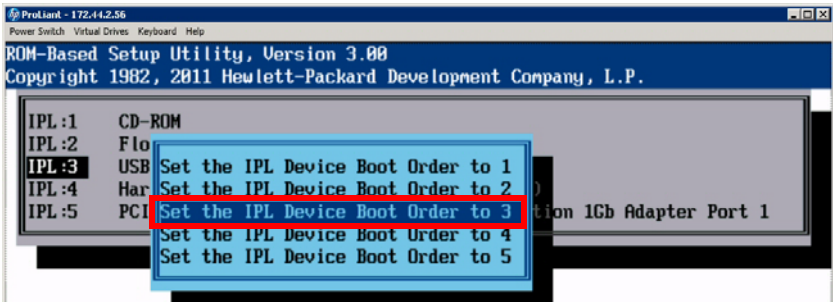

Figure 4 - 16. Selecting the Option to Boot from the Acme USB Module

3. Set the HP Power Profile to Maximum Performance by navigating to Power Management Options > HP Power Profile > Maximum Performance.

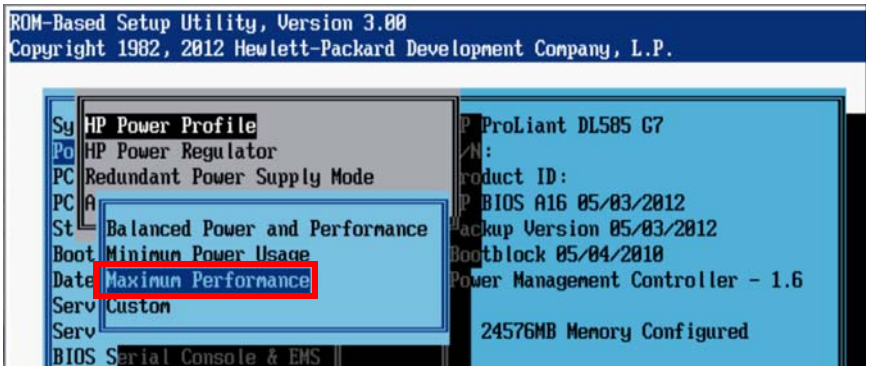

Figure 4 - 17. Setting the HP Power Profile

4. Set the HP Power Regulator by navigating to Power Management Options > HP Power Regulator > HP Static High Performance Mode. Note that when you set that option, the HP Power Profile will automatically change to Custom.

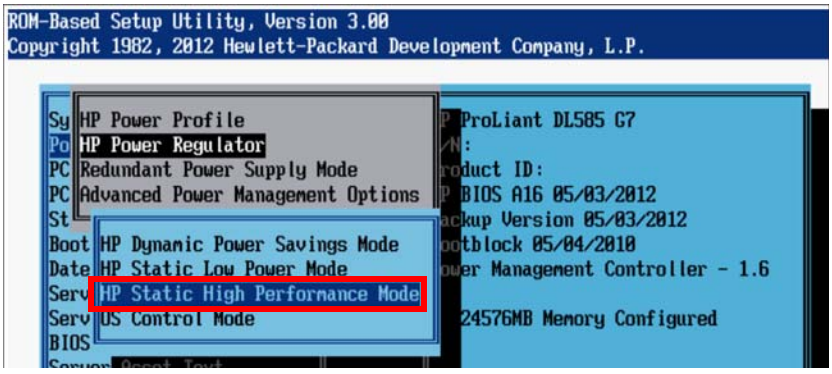

Figure 4 - 18. Setting HP Static High Performance Mode

5. Disable Intel Hyper-Threading by navigating to System Options > Intel (R) Hyperthreading Options > Disabled. (Note that Hyperthreading may be re-enabled for VM deployments only.)

Figure 4 - 19. Disabling Intel Hyperthreading Options

6. Disable the EMS Console by navigating to BIOS Serial Console & EMS > EMS Console > Disabled.

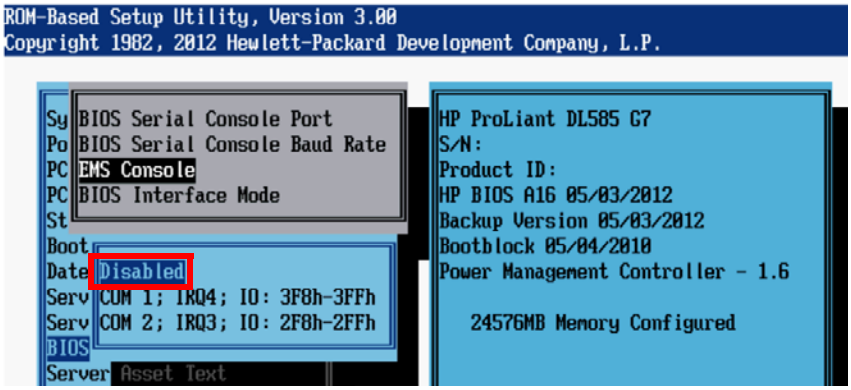

Figure 4 - 20. Disabling the EMS Console

7. Set the serial console to COM 1 by navigating to BIOS Serial Console & EMS > BIOS Serial Console Port > COM 1.

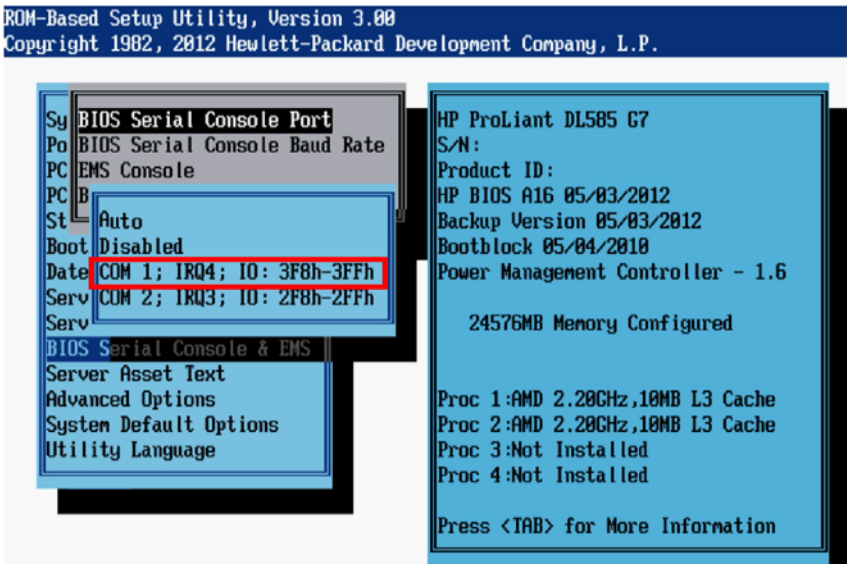

Figure 4 - 21. Setting the Serial Console to COM 1

8. Set the serial console baud rate to 115200 by navigating to BIOS Serial Console & EMS > BIOS Serial Console Baud Rate > 115200.

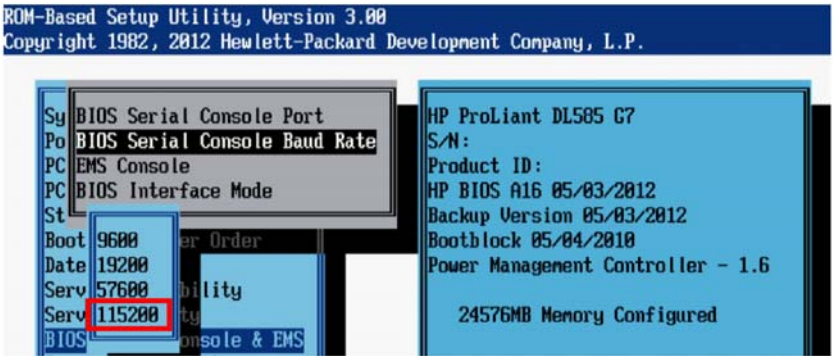

Figure 4 - 22. Setting the Serial Console Baud Rate

9. Press Esc until the main menu is displayed.
10. At the main menu, press F10. The HP server automatically restarts.

Creating a Single RAID Logical Volume Spanning All Physical Disks

The Acme Packet OS supports only a single disk, so if multiple physical disk drives are present in the system, the drives must be presented to the Acme Packet OS as a single volume (i.e., through the use of RAID aggregation).

Configurations with more than one logical volume presented by RAID, or systems with more than one non-RAID physical disk (e.g., multiple SATA or SAS not in a RAID volume) are not supported and will result in system failure.

The HP Array Configuration Utility (ACU) is used for creating RAID drives. The ACU can be accessed on the HP server from either BIOS or HPIP. Similar to the

ROM Based Setup Utility (RBSU), it is accessed indirectly via HPIP by pressing F10 during startup, or directly from BIOS using F5 during the controller POST.

Shown below is an example of the HP ACU displaying a single logical volume for two physical drives in a RAID1 mirror.

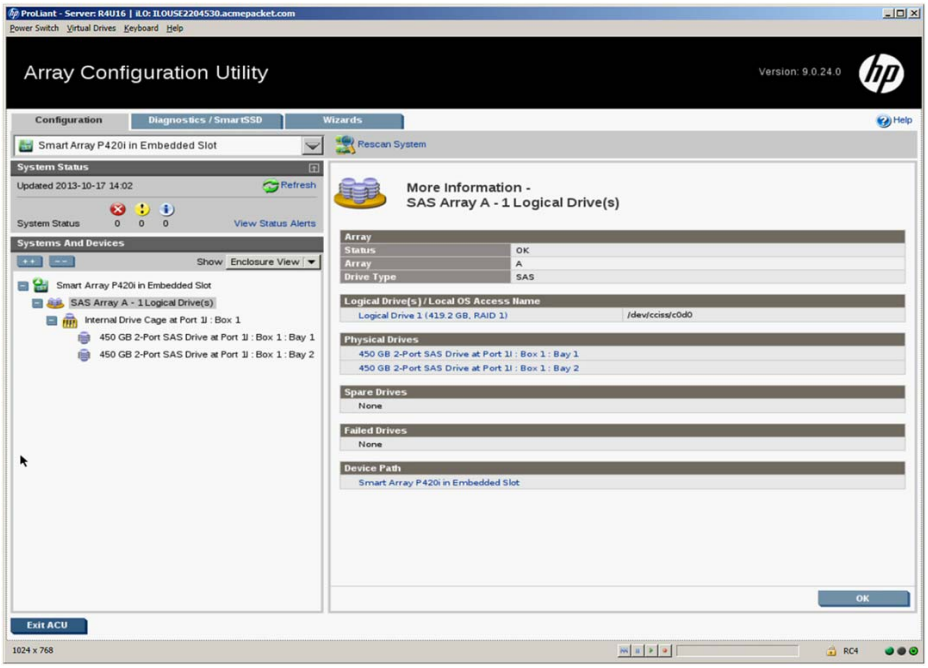

Figure 4 - 23. Single Logical Volume for 2 Physical Drives in a RAID Mirror in ACU

Consult the HP documentation on the HP ACU for specific information in configuring a RAID volume.

Physically Installing the Acme USB Module Onto the HP Server

Please use the following procedure to install the Acme USB module onto the HP server.

Prerequisite:

- Acme USB module containing S-Cz
- HP DL360p Gen8 Server or HP BL460c Gen8 Server running the iLO4 Web Interface

To install the Acme USB module onto a HP server:

1. Power down and remove the power cords from the HP server.
2. Remove the top cover of the HP server. Consult your HP documentation for information on removing the cover.
3. Install the Acme USB module into any internal USB port.

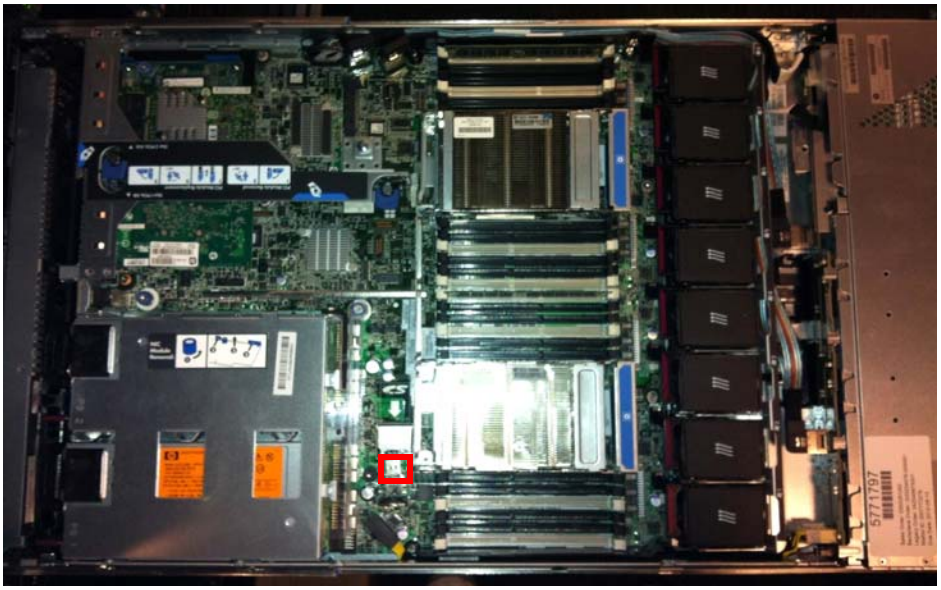

Figure 4 - 24. Location for Acme USB Module for HP DL360p Gen8

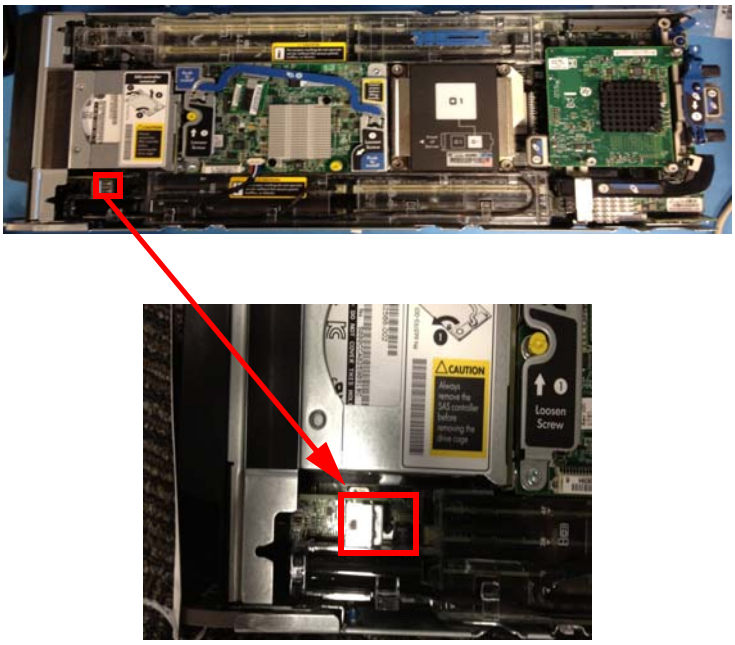

Figure 4 - 25. Location for Acme USB Module for HP BL460c Gen8

4. Reinstall the cover onto the HP server.
5. Connect power to the HP server, and power on the HP server.

Logging In to the ACLI and Enabling User/Super User Modes

The following procedure describes how to log in to the Acme Packet software and enter both user mode and super mode.

To log in to the ACLI and enable user/super user modes:

1. After the server boots, the **Password:** prompt appears.
2. To enter user mode, at the **Password:** prompt type your password and then press Return. The **Acme>** prompt appears and user mode is enabled.
3. To enable super user mode, at the **Acme>** prompt type **enable** and then press Return. The **Password:** prompt appears. Enter the super user password and then press Return. The **Acme#** prompt appears and super user mode is enabled.

Formatting the Hard Drive

Capacity Requirements

The storage device format scheme is dependent on the size of the drive and the total amount of system RAM installed.

The minimum storage required for system operation is 12GB, plus either 8GB or 2xRAM GB whichever is the larger.

For example:

- If RAM is 2GB, the minimum storage would be 12+8 = 20GB.
- If RAM is 4GB, the minimum storage would be 12+(2x4) = 20GB.
- If RAM is 32GB, the minimum storage would be 12+(2x32) = 76GB

For devices larger than the minimum requirements, any additional capacity can be formatted for storage of user data.

File System Volumes

System volumes are allocated as follows:

/boot	**2GB**
/code	**2GB**
/opt	**8GB**
/opt/crash	**8GB or 2*RAM, whichever is larger**

Note the following:

- /boot and /code (2GB each) are created during software installation when the Acme USB module is first booted.
- /opt (8GB) is primarily intended for core dumps, log files, CDRs, and HDR data.
- /opt/crash is used for crash files with an 8GB minimum, 2xRAM maximum.

Optional user data volumes can be configured as alternative storage for CDR logs and other non-system related data.

> **Note:** Important: By default, /opt volume will use a RAM-based file system after initial installation.

Acme Packet recommends formatting at least the system disk volumes, to enable persistent logging between reboots.

Default Format Plan

The storage device format scheme is dependent on the size of the drive. With a large storage device, you can accept the file system's default partition configuration, or you can create your own scheme.

The volumes */boot* and */code* are stored on the hard disk. These folders are created when the USB is first booted during software installation.

By default, */opt* volume will use a RAM-based file system. Therefore, there is no persistent storage for logs, crash files, or CDR logs.

The command *format hard-disk* initiates the mass storage of logs, crash files and CDR accounting records located on the hard disk */opt* volume.

Local File System

The file system consists of two essential volumes and one or more user-defined volumes.

The Acme Packet software maintains */boot* and */code* partitions that are each 2 GB in size. These volumes are located on internal 4GB flash drives. Once a storage device is installed in the system, the */opt* and */opt/crash* volumes are moved there.

- */opt* is located on the first system partition and is always 8 GB. Although it can be used for many purposes, it is primarily intended for core dumps, log files, CDRs, and HDR data.
- */opt/crash* is located on the second system partition. It is the remainder of the storage device with an 8GB minimum. The folder */opt/crash* is used for crash files.

Default Format Plan

When formatting a storage device larger than 40 GB, the volumes */mnt/sys* and */mnt/app* are created in the data partition. Their relative sizes are based on the drive size as shown here.

Table 4 - 1. Default Hard Drive Format Plan

Volume Number	Volume Name	Volume Size
system partition	/opt	8 GB
system partition	/opt/crash	2 x RAM size (to less than 8 GB)
data partition	/mnt/sys	20% remaining space
data partition	/mnt/app	80% remaining space

Custom Format Plan

You can customize the format plan when a storage device larger than 40 GB is installed in your system. Before formatting the storage device, plan the number of volumes, volume names, and relative percentage of storage device disk space. A maximum of four volumes in the data partition are allowed.

Table 4 - 2. Custom Hard Drive Format Plan

Volume Number	Volume Name	Volume Size
system partition	/opt	8 GB

Table 4 - 2. Custom Hard Drive Format Plan *(continued)*

Volume Number	Volume Name	Volume Size
system partition	/opt/crash	2 x RAM size (to less than 8 GB)
data partitions 1-4	/mnt/<user-label>	user-defined percentage of remaining space

Formatting Procedure

The *format* command requires **one** of the following arguments:

- *system-disk* — formats and creates these two system partitions: */opt* and */opt/crash*
- *data-disk* — formats and creates one or more data partitions with the default (*/mnt/sys and /mnt/app*) or user-defined volumes
- *hard-disk* — formats and creates both the system partition and data partition

After the drive(s) are formatted, the system mounts the newly created partitions.

Example of Format Command Process

The following example shows the format command process. Note where user input is required (in red typeface) to specify the number of volumes, their names and sizes.

```
ACMEPACKET# format hard-disk
WARNING: Please ensure device is not currently in use by any
applications before proceeding
Continue [y/n]?: y
The following system partitions will now be created:
1: /opt 8000000 bytes
2: /crash 16218284032 bytes
Create the system partitions and filesystems as configured above
[y/n]?: y
******************************************************
WARNING: All system logs and data on the disk will be
permanently erased and unrecoverable.
Are you sure [y/n]?: y
The format process will take a few minutes. Once
the format process begins, it cannot be stopped.
Please do not power down or reboot the system until
the format process is complete.
Continue [y/n]?: y
Suspending logging to hard disk
Stopping tLogCleaner task
Relocating logging onto RAM drive
Initializing /opt/ Cleaner
Starting tLogCleaner task
*** Removing previous system partitions - please wait ***
*** Creating new system partitions - please wait ***
*** Formatting partition /opt. Please wait... ***
[...]
This filesystem will be automatically checked every 23 mounts or
```

```
180 days, whichever comes first. Use tune2fs -c or -i to override.
*** Formatting completed successfully ***
*** Formatting partition /crash. Please wait... ***
[...]
This filesystem will be automatically checked every 31 mounts or
180 days, whichever comes first. Use tune2fs -c or -i to override.
*** Formatting completed successfully ***
e2fsck 1.41.14 (22-Dec-2010)
opt: clean, 11/1960 files, 1323/7812 blocks
e2fsck 1.41.14 (22-Dec-2010)
crash: clean, 11/991232 files, 104681/3959542 blocks
```

The following section of the format hard-drive walk-through shows the data partition creation. The following system output shows that the user has chosen to define a custom data partition scheme by typing *n* at the **Use factory default data partitions [y/n]?:** prompt.

```
Suspending logging to RAM drive
Stopping tLogCleaner task
Relocating logging onto hard disk
Initializing /opt/ Cleaner
Starting tLogCleaner task
Disk space used by system:
16226317824 bytes
Use factory default data partitions [y/n]?: n
Enter the number of data partitions to create: 3
Total unallocated space = 100 %
Enter the name of volume 1 (or 'q' to quit): VOLUME1
Enter the size of the volume (in %): 20
Total unallocated space = 80 %
Enter the name of volume 2 (or 'q' to quit): VOLUME2
Enter the size of the volume (in %): 40
Total unallocated space = 40 %
Enter the name of volume 3 (or 'q' to quit): VOLUME3
Enter the size of the volume (in %): 40
The following data partitions will now be created:
/VOLUME1 96776308838 bytes
/VOLUME2 193552617676 bytes
/VOLUME3 193552617676 bytes
Create the data partitions and filesystems as configured above [y/n]?: y
*****************************************************
WARNING: All non-system data on the disk will be
permanently erased and unrecoverable.
Are you sure [y/n]?: y
The format process will take a few minutes. Once
the format process begins, it cannot be stopped.
Please do not power down or reboot the system until
the format process is complete.
```

```
Continue [y/n]?: y
*** Beginning format process ***
*** Removing previous data partitions - please wait ***
*** Creating new data partitions - please wait ***
*** Formatting partition /VOLUME1. Please wait... ***
mke2fs 1.41.14 (22-Dec-2010)
[...]
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
This filesystem will be automatically checked every 37 mounts or
180 days, whichever comes first. Use tune2fs -c or -i to override.
*** Formatting completed successfully ***
*** Formatting partition /VOLUME2. Please wait... ***
mke2fs 1.41.14 (22-Dec-2010)
[...]
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
This filesystem will be automatically checked every 23 mounts or
180 days, whichever comes first. Use tune2fs -c or -i to override.
*** Formatting completed successfully ***
*** Formatting partition /VOLUME3. Please wait... ***
mke2fs 1.41.14 (22-Dec-2010)
[...]
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
This filesystem will be automatically checked every 31 mounts or
180 days, whichever comes first. Use tune2fs -c or -i to override.
*** Formatting completed successfully ***
*** Format finished successfully
New partitions have been created ***
*** Mounting partitions ***
e2fsck 1.41.14 (22-Dec-2010)
VOLUME1: clean, 11/5914624 files, 418265/23626953 blocks
/VOLUME1 mounted
e2fsck 1.41.14 (22-Dec-2010)
VOLUME2: clean, 11/11821056 files, 789884/47254150 blocks
/VOLUME2 mounted
e2fsck 1.41.14 (22-Dec-2010)
VOLUME3: clean, 11/11821056 files, 789884/47253628 blocks
/VOLUME3 mounted
```

Licensing Acme Packet Software

This section describes the licensing of the Acme Packet software, how to obtain the software license key and how to install the license key to your server.

Each Acme Packet Acme USB module is shipped with a document containing the software license key for the use of that software functionality. The key must be present on the system at all times for the Acme Packet software to work.

> **Note:** Failure to detect the USB key is equivalent to license expiration and results in the loss of the associated functionality. If the Acme USB module is removed and later re-installed, the functionality is restored when the server is rebooted.

Installing the Acme Packet License Key

The following procedure describes how to install an Acme Packet license key on your server.

> **Note:** If an additional Acme Packet drive key is obtained following the installation of the license key, repeat this procedure using the new license key.

Prerequisites:

- The Acme Packet Acme USB module should already be installed on the server.
- Acme Packet license key for the Acme USB module

To install the Acme Packet license key on your server:

1. Log in to the ACLI.
2. At the **Acme#** prompt, enter the following text, and then press Return:

   con t

The configure prompt (**Acme(configure)#**) appears.

3. At the configure prompt, enter the following text, and then press Return:

   sys lic

The license prompt (**Acme(license)#**) appears.

4. At the license prompt, enter **add** followed by a space and the license key (where ***string*** is the license key string) as shown in the following; then press Return to complete the license key process:

   add *string*

For example: **add jgi30sei2j1id930492gbdeoslwe339fle9jf99gj5wb49w0pgj49jie9c**

5. To display the information associated with the installed Acme Packet license key, enter the following text at the license prompt and then press Return:

   show

An example of the output of the show command is shown here:

License #1: Acme Developer License!, 32000 sessions, SIP, MGCP, H323, IWF, QOS, ACP, Routing, Load Balancing, Accounting, High Availability, PAC, LI, External BW Mgmt, TLS, Software TLS, External CLF Mgmt

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