

Acme Packet 4500

Storage Expansion Module Installation Guide

Formerly Net-Net 4500

April 2015

Copyright © 2015, 2009 Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

About This Guide

Overview

The Acme Packet 3820 or Acme Packet 4500 Storage Expansion Module Installation Guide describes how to install an Storage Expansion Module in your Acme Packet 3820 or Acme Packet 4500 .

Audience

This guide is written for network administrators, and telecommunications equipment installers and technicians. It provides information related to hardware component installation. Only experienced and authorized personnel should perform installation, configuration, and maintenance tasks.

For information about Acme Packet 3820 or Acme Packet 4500 training, contact your Acme Packet sales representative directly or email support@acmepacket.com

This section contains a revision history for this document.

Date	Description
April 2009	<ul style="list-style-type: none">Initial Release
October 2013	<ul style="list-style-type: none">Applied standard formatting and general editing.
April 2015	<ul style="list-style-type: none">Changed the copyright page to Oracle standards for 2015.Deleted a paragraph in the introduction to the Storage Expansion Module (SEM) Installation chapter suggesting that there may be revision levels to the motherboard that may not support the SEM.Entered a note at the end of the installation chapter pointing out that after you install or replace an SEM, you must format it.

Storage Expansion Module Installation

Introduction

This document explains how to install the Storage Expansion Module in your Acme Packet 3820 or Acme Packet 4500.

Shipped Parts

The following lists the contents of one Storage Expansion Module upgrade order.

- Storage Expansion Module module



- 2 x mounting brackets



- 4 x pan head screws (M3 x 5mm)



- 4 x SEM screws (with washer) (4-40 x 1/4")



Installation Tools and Parts

The following tools and parts are required to install an Storage Expansion Module in your Acme Packet 3820 or Acme Packet 4500.

- #1 Phillips-head screwdriver
- #2 Phillips-head screwdriver
- ESD wrist strap
- Cable labels

Preinstallation

Perform the following logical and physical preparations before you install the Storage Expansion Module in your Acme Packet 3820 or Acme Packet 4500.

Logical System Removal

Be mindful of all systems and network entities that may be affected by removing a Acme Packet 3820 or Acme Packet 4500 from your network. In addition to routing calls around the Acme Packet 3820 or Acme Packet 4500, you must also prepare network monitoring and health systems to accommodate the loss of a network element.

Specific procedures for removing the Acme Packet 3820 or Acme Packet 4500 from your network are beyond the scope of this document.

Physical System Removal

After logically removing the Acme Packet 3820 or Acme Packet 4500 from your network, the following procedures must be completed before you can install the Storage Expansion Module. These are:

- Disconnection of all media network, management network, alarm and console cabling from the Acme Packet 3820 or Acme Packet 4500
- Disconnection of all power and ground system cabling
- Removal of the Acme Packet 3820 or Acme Packet 4500 from the equipment rack

Data Cabling Removal

Labeling all existing data cables will ease reconnecting the Acme Packet 3820 or Acme Packet 4500 to the network.

1. Label each cable noting which port on the Acme Packet 3820 or Acme Packet 4500 it connects to.
2. Attach the appropriate label to each cable.

Remember to label all media network cables , maintenance cabling, and console and alarm cables.

3. Disconnect all data cables from the Acme Packet 3820 or Acme Packet 4500.

Power and Ground Cabling Removal

Take care in removing power from the Acme Packet 3820 or Acme Packet 4500. Refer to the Safety chapter in the Acme Packet 3820 or Acme Packet 4500 Hardware Installation Guide for complete safety guidelines.

The following is an overview of the power and ground cabling removal process. Please refer to the Acme Packet 3820 or Acme Packet 4500 Hardware Installation Guide for detailed instructions.

1. Shut off power to the Acme Packet 3820 or Acme Packet 4500 at the circuit breaker or power source.
2. Remove the power cable(s) from the Acme Packet 3820 or Acme Packet 4500's power supplies.
3. Unscrew the two keps that secure the grounding cable lug to the Acme Packet 4500 (this step is not valid for the Acme Packet 3820).
4. Remove the ground cable. Put the keps in a safe place (this step is not valid for the Acme Packet 3820).

Chassis Removal

The Acme Packet 3820 or Acme Packet 4500 is heavy, and personal injury can result while removing and installing the chassis in an equipment rack. To prevent injury or damage to the Acme Packet system, follow these guidelines:

Caution

To prevent personal injury, we recommend that two people lift and install the chassis into the equipment rack.

- Follow your organization's best practices for lifting and installing heavy components into an equipment rack.
- Ensure that the Acme Packet 3820 or Acme Packet 4500 remains supported as you remove it from the equipment rack.

The following is an overview of the chassis removal process. Please refer to the Acme Packet 4500 Hardware Installation Guide for detailed instructions.

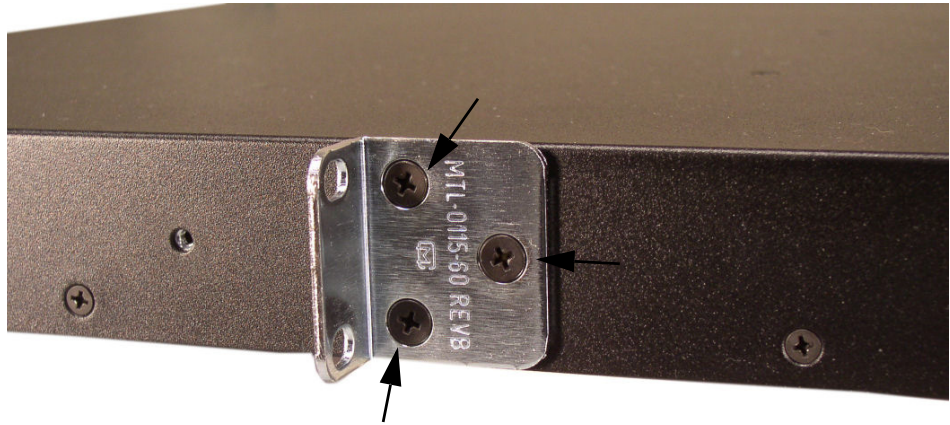
1. Use a workbench or other supportive surface, and place it nearby to set the Acme Packet 3820 or Acme Packet 4500 on after it is removed from the equipment rack.
Support the chassis before and while removing it from the equipment rack.
2. Remove the Acme Packet 3820 or Acme Packet 4500 from the rack. The number of points to unscrew depends upon whether the Acme Packet system is installed in a front- or center-mount configuration.
3. Place the chassis on a workbench.

Hardware Removal for Center-Mount Configurations

The rack ears must be removed before you can open the chassis.

To remove center-mount equipment rack hardware:

1. Remove the left rack ear by unscrewing the three screws.



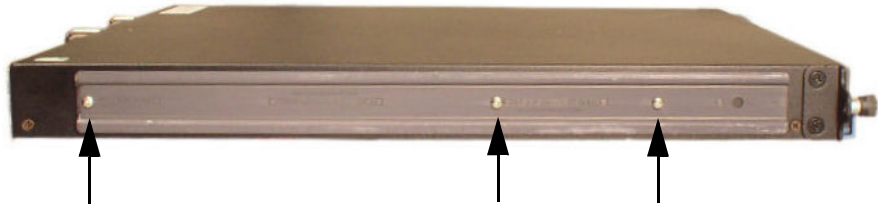
2. Remove the right rack ear by unscrewing the three screws.
3. Set the rack ears and screws aside.

Hardware Removal for Front-Mount Configurations

The chassis slides and rack ears must be removed before you can open the chassis.

To remove front-mount equipment rack hardware:

1. Remove the left chassis slide by unscrewing the three screws.



2. Remove the left rack ear by unscrewing the three screws.



3. Repeat steps 1 and 2 on the right side of the Acme Packet 3820 or Acme Packet 4500.
4. Set the rack ears and screws aside

Opening the Chassis

The chassis lid is secured to the chassis by 15 screws. Remove the screws and lift the chassis lid off the chassis.

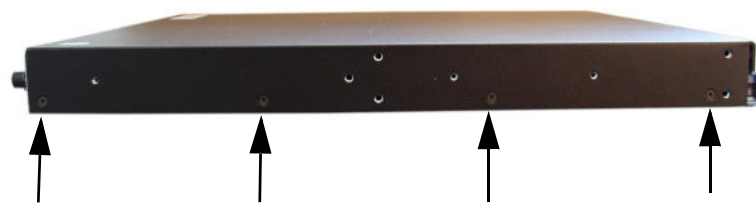
Caution

Before opening the Acme Packet 3820 or Acme Packet 4500, ground yourself using an ESD wrist strap or other comparable grounding system. Failure to do so could damage the Storage Expansion Module the Acme Packet 3820 or Acme Packet 4500.

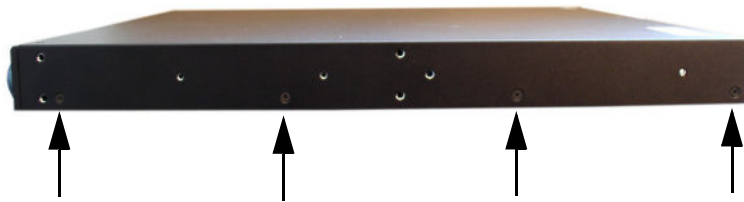
Note: Use a #2 Phillips-head screwdriver for all chassis cover and side screws.

1. Unscrew the four countersunk screws on each side of the Acme Packet 4500 that hold the chassis cover to the chassis.

LEFT SIDE

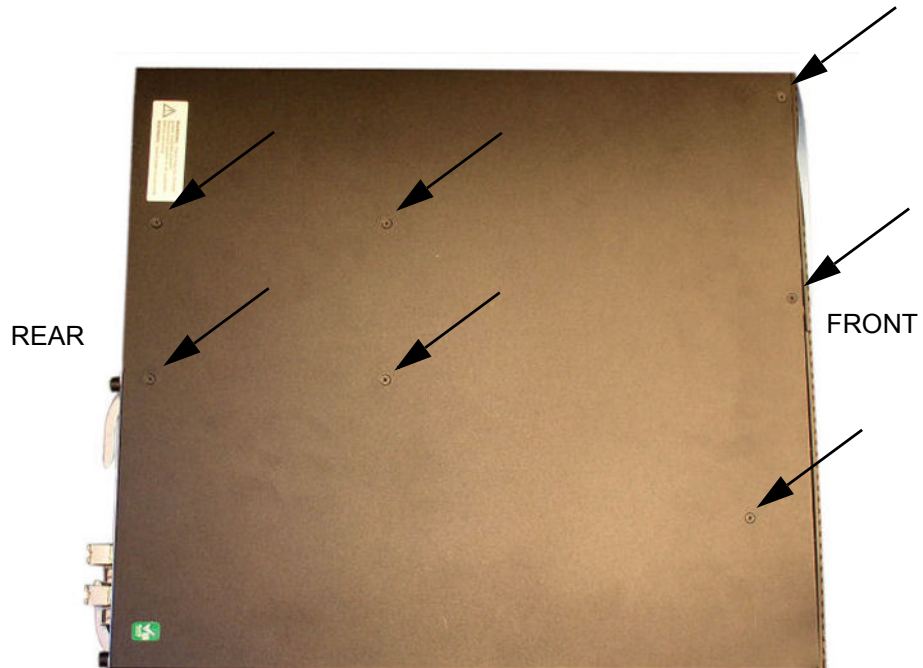


RIGHT SIDE



2. Set these screws aside.

3. Unscrew the seven countersunk screws on the top of the Acme Packet 4500 that hold the chassis cover to the chassis. The following is an image of the top of the chassis.



4. Set the lid and screws aside.
5. Lift the chassis lid off of the chassis and set aside.

Storage Expansion Module Installation

Once the Acme Packet 3820 or Acme Packet 4500 is open, the Storage Expansion Module installation is straightforward. The Storage Expansion Module attaches electrically to the Acme Packet 3820 or Acme Packet 4500 motherboard by a standard 2.5" SATA connector. In addition, it is secured to the motherboard by four screws.

Caution

Before handling the Storage Expansion Module, ground yourself using an ESD wrist strap or other comparable grounding system. Failure to do so could damage the Storage Expansion Module or the Acme Packet 3820 or Acme Packet 4500.

Storage Expansion Module Preparation

Before you can install the Storage Expansion Module, you must attach one mounting bracket to each side of the module. The mounting brackets are identical and can be attached to either side of the storage expansion module.

1. Screw one mounting bracket to one side of the storage expansion module with 2 pan head screws. Ensure that the mounting bracket's flange are on the top side of the storage module, the side with the label.



2. Repeat Step 1 for the other side of the storage expansion module.



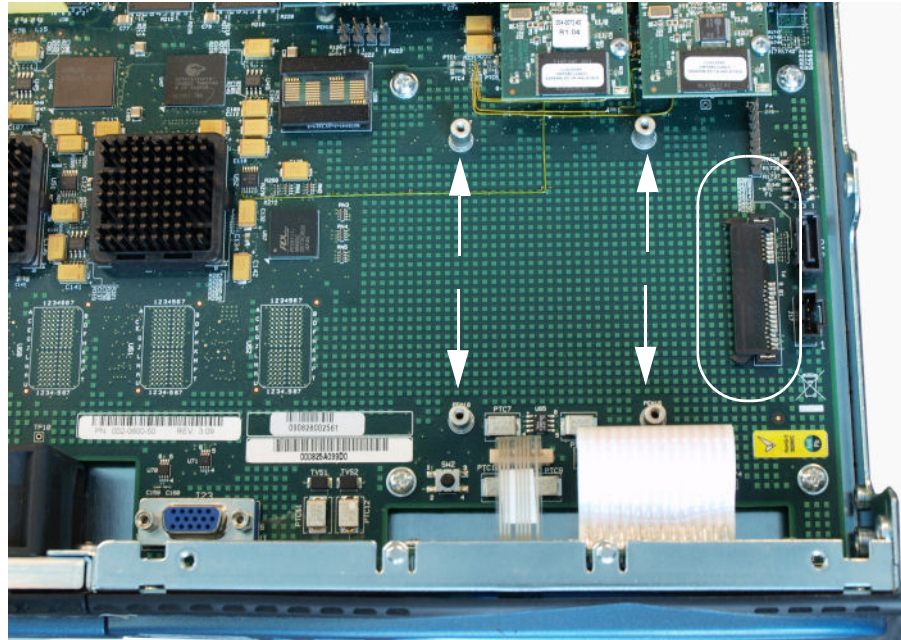
3. The storage expansion module with the mounting brackets attached resembles the following image:



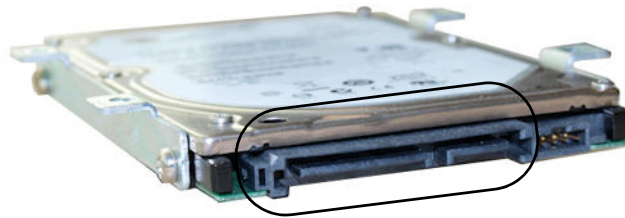
Storage Expansion Module Installation

1. Note the region on the Acme Packet 3820 or Acme Packet 4500 motherboard where the Storage Expansion Module attaches. In the photograph below, the Storage Expansion Module's SATA connector is circled. The Storage Expansion

Module plugs into place here. Note the four standoffs where you will screw the storage expansion module to the chassis in step 5.



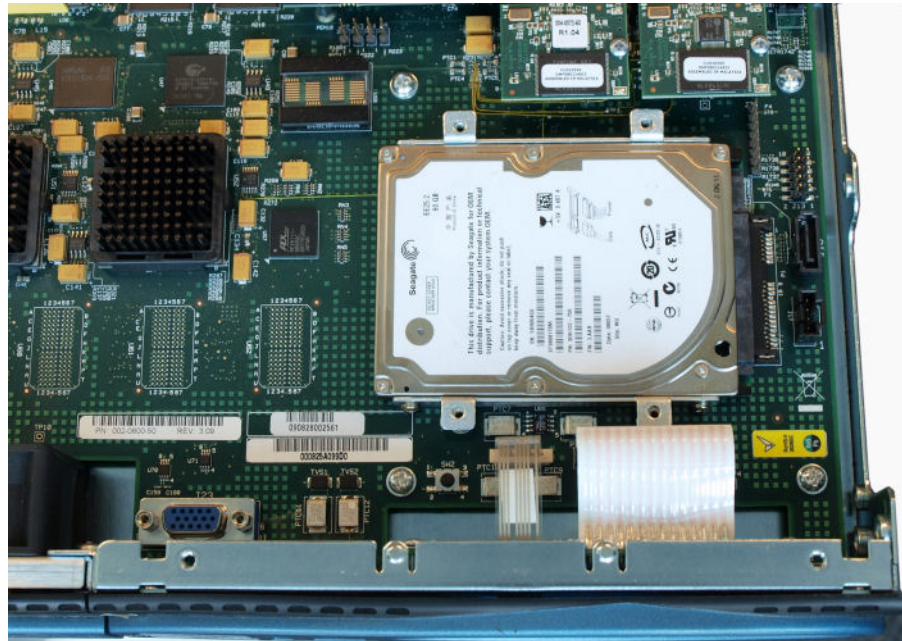
2. Note the Storage Expansion Module's SATA connector, circled in the following photograph.



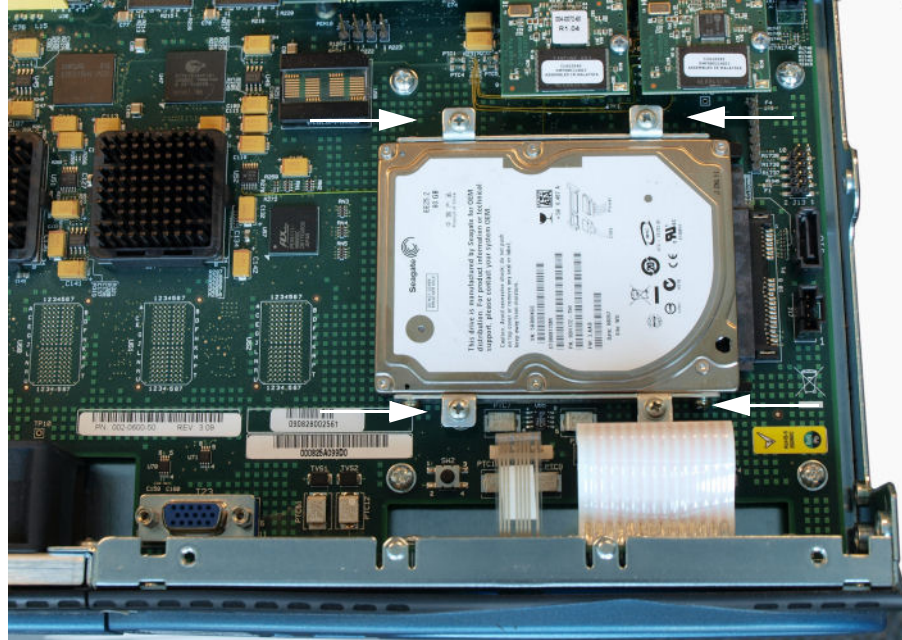
- Place the Storage Expansion Module on the Acme Packet 3820 or Acme Packet 4500 motherboard as shown in the photograph below. The Storage Expansion Module's mounting flanges should initially be placed to the left of the four standoffs.



- Slide the Storage Expansion module to the right until the SATA connector seats completely into its mate. The holes in the mounting flanges should line up with the standoffs.



5. Screw the Storage Expansion Module to the standoffs with 4 SEM screws (with washers) as shown in the following image using a #1 Phillips screwdriver.



Postinstallation

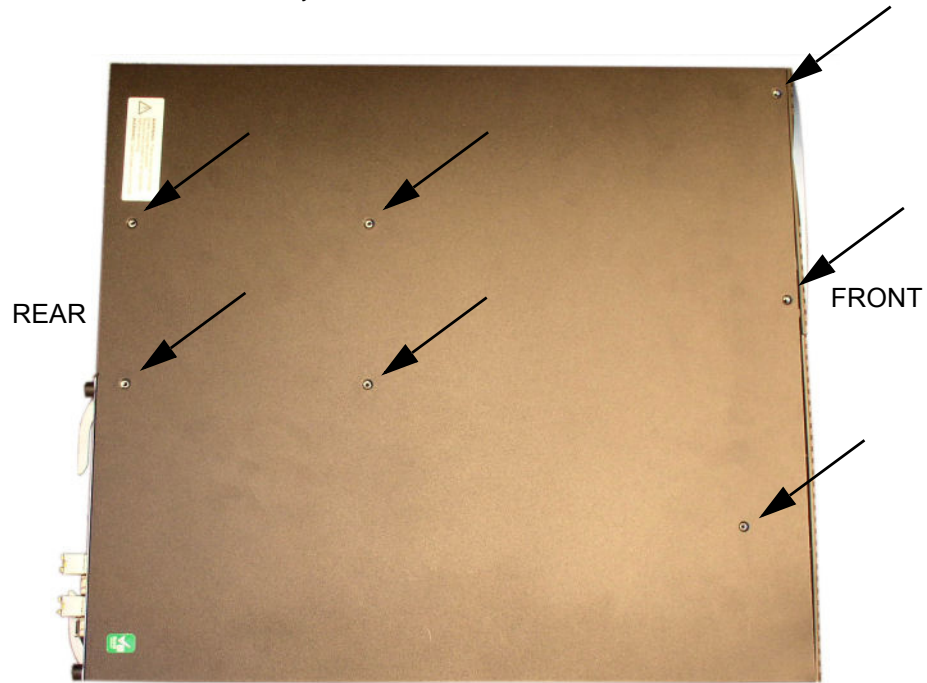
After the Storage Expansion Module has been installed in the Acme Packet 3820 or Acme Packet 4500, you can close the chassis and reinstall it in the equipment rack.

Attaching the Lid

Use a #2 Phillips-head screwdriver for all chassis cover and side screws.

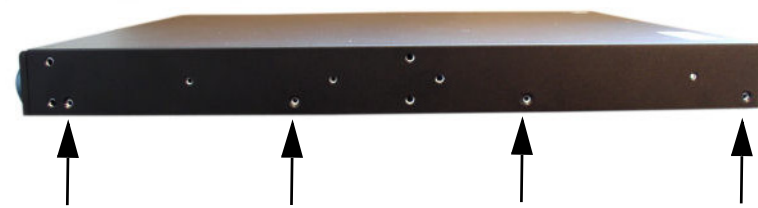
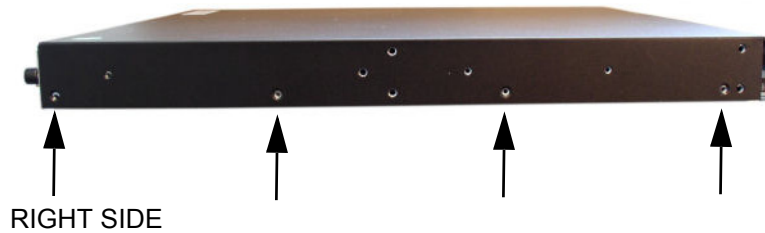
1. Set the lid on top of the Acme Packet 3820 or Acme Packet 4500 chassis. The stickers are positioned at the chassis rear.

2. Screw the eight countersunk screws into the top of the Acme Packet 4500 to secure the chassis cover to the chassis. The following is an image of the top of the chassis without any screws.



3. Continue securing the chassis lid with four screws on each side.

LEFT SIDE



Installing the Chassis in the Rack

Perform the reverse of the operations in the Physical System Removal section of this document:

Please refer to the Acme Packet 3820 or 4500 Hardware Installation Guide for full rack installation procedures.

Storage Expansion Module Validation

We recommend that you validate the Storage Expansion Module (SEM) installation by running Acme Packet 3820 or Acme Packet 4500 diagnostics. All versions from nnCX_diags110.gz and later include the appropriate tests for validating the SEM. Please refer to the diagnostic's documentation for more information.

In the following procedure, after booting into diagnostics, the circled text represents a preliminary check that the system recognizes the Storage Expansion Module.

```

Password: *****

-> dc
/boot/ - Volume is OK
      243 MB

/code/ - Volume is OK
      245 MB

/sata/ - Drive Present
      476940 MB
Starting Diagnostic Executive...
Comm Express MCH 945 Present.
AHCI Support is Enabled.

Acme Packet Net-Net 4500
Diagnostic Executive Version 1.10
Creation date: Nov 16 2009 11:08:02
Board Level Diagnostics
Date & Time: TUE NOV 17 14:56:01 2009

[diag_proc] ->
```

Formatting the Storage Expansion Module

After replacing the SEM, you must format it. Details on file system designs and the formatting procedure may be found in Chapter 9, File System Maintenance of the *Maintenance and Troubleshooting Guide* for your software release.