



Net-Net® 9200 TCM Installation Guide

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About This Guide

Overview

The Net-Net™ 9200 is a high performance, high capacity session border controller that optimally delivers interactive communications—voice, video, and multimedia sessions—across wireline, wireless, and cable IP network borders.

Audience

This guide is written for network administrators, and telecommunications equipment installers and technicians. It provides information related to the hardware components, features, installation, start-up, operation, and maintenance of the Net-Net 9200. Only experienced and authorized personnel should perform installation, configuration, and maintenance tasks.

For information about Net-Net 9200 training, contact your Acme Packet sales representative directly or email support@acmepacket.com.

Who is Acme Packet?

Acme Packet enables service providers to deliver trusted, first class interactive communications-voice, video and multimedia sessions-across IP network borders. Our Net-Net family of session border controllers satisfy critical security, service assurance and regulatory requirements in wireline, cable and wireless networks. Our deployments support multiple applications-from VoIP trunking to hosted enterprise and residential services; multiple protocols-SIP, H.323, MGCP/NCS and H.248; and multiple border points-interconnect, access network and data center.

Established in August, 2000 by networking industry veterans, Acme Packet is a public company traded on the NASDAQ and headquartered in Bedford, MA.

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Revision History

This section contains a revision history for this document.

Date	Revision Number	Description
September 15, 2008	Revision 1.00	<ul style="list-style-type: none">Initial Release
October 17, 2012	Revision 1.1	<ul style="list-style-type: none">Updated reference to additional documentation for installation of TCM

TCM Installation

Introduction

This guide provides information about how to install the TransCoding Module (TCM) Card in your Net-Net 9200's TCU.

The following is a list of the major steps required to install a TCM in a Net-Net 9200.

1. Follow preinstallation guidelines
2. Ground yourself and follow proper ESD grounding procedures
3. Remove the first TCU from the Net-Net 9200 chassis
4. Install the TCMs on the TCU
5. Replace the upgraded TCU in the Net-Net 9200 Chassis
6. Repeat Steps 3-5 for the second and third TCMs

Shipped Parts

A TCM upgrade order contains the following:

- Acme Packet TCM
- 4 x M2.5 x 6 Phillips pan head screws

Installation Tools and Parts

The following tools and parts are required to install a TCM on a TCU.

- #2 Phillips-head screwdriver
- ESD wrist strap
- ESD workbench

Preinstallation

- This upgrade should be performed during low-traffic periods or scheduled maintenance windows.
- When installing or removing TCMs, move the TCUs to an ESD safe maintenance location.
- Ground yourself using an ESD wrist strap or similar device.
- Never install or remove a TCM on a TCU that is not fully removed from the Net-Net 9200.

Note: Adding or removing TCMs from a Net-Net 9000 system is NOT hitless. You must first power down your system before performing the following procedure. Ensure that you have installed all TCMs in all TCUs before restarting the system.

Installation

ESD Grounding

When performing maintenance on Net-Net 9200 components, you must ground yourself to the chassis with an ESD wrist strap. An ESD wrist strap is used to channel static electricity to ground. Proper grounding is essential for handling static-sensitive equipment such as processing and interface units.

Alternatively, you can ground yourself according to established grounding guidelines of the location where the Net-Net 9200 resides.

The Net-Net 9200 has two grounding jacks, one on the front and one on the back of the chassis. These jacks accept banana plugs. You fasten the wrist-side of the ESD wrist strap to your wrist, and the ground side of the wrist strap is plugged into the Net-Net 9200's chassis.

Note: An ESD wrist strap is not shipped with your TCM install kit.

To connect an ESD wrist strap to the Net-Net 9200 Chassis:

1. Locate the banana jack on the front side of the chassis. Depending on your model, it will be located either on the bottom or top of the chassis.



Front-Panel Bottom



Front-Panel Top

2. Insert the banana plug into the jack.



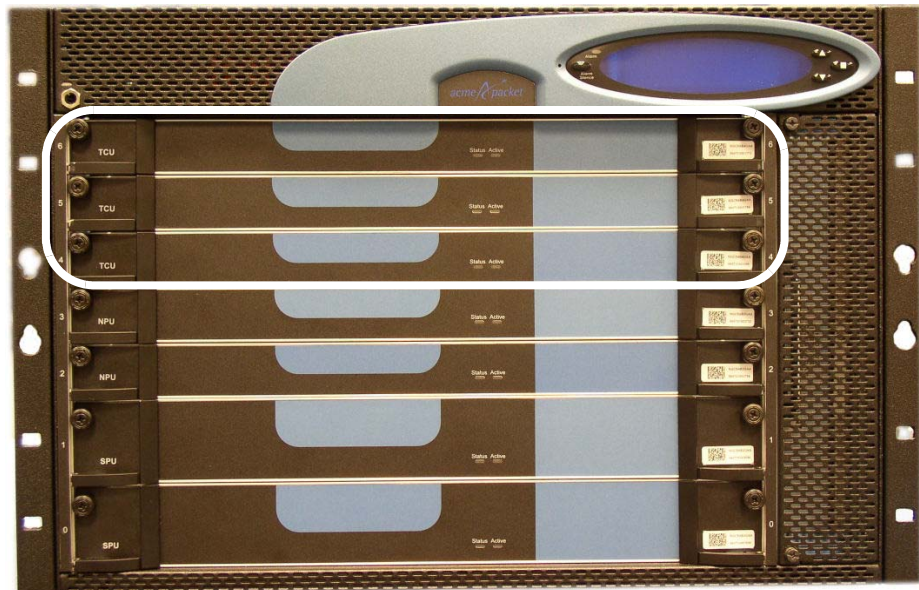
3. Attach the wrist strap to your wrist using the procedures that accompany the ESD wrist strap.



Begin performing maintenance on the Net-Net 9200.

TCU Removal

Before installing a TCM, you must remove the TCU on which the TCM will be attached. The following graphic shows the location of the three TCUs on the Net-Net 9200.



The following steps illustrate the proper way to remove a TCU. A picture of an SPU being removed is shown for illustration. The removal procedure is the same.

To remove a TCU:

1. Unscrew the two thumb screws located on each side of the processing unit with a #2 Phillips screwdriver.



The screws are spring-loaded and will be pushed forward, but will not fall out of the processing unit.

2. Place one or two fingers behind the slide latches and push each one toward the center of the processing unit. This action sends a signal to the TCU to shut down the card and perform all switchover actions if the system is powered up.



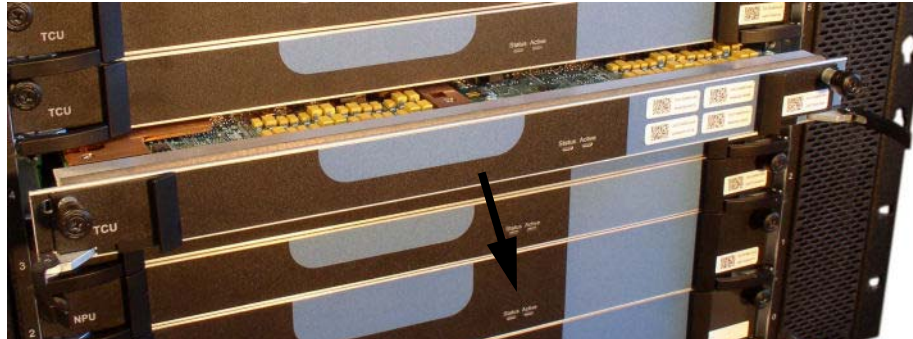
Each slide latch travels 0.28 inches (0.71 cm) before stopping.

3. Hold each ejector lever between your thumb and index finger and pivot each lever away from the center of the processing unit.



This action disengages the processing unit from the mid-plane, severing all electrical contact to the processing unit.

4. Hold the processing unit's front bezel and pull it out of the chassis.



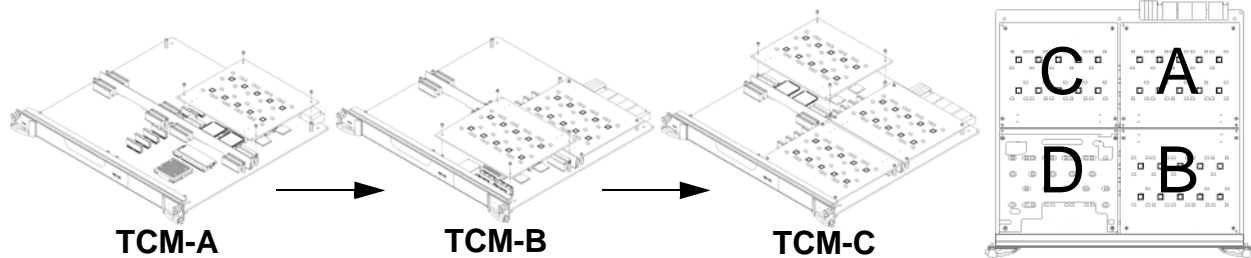
The processing unit rides on the card rails until it is completely removed from the chassis.

5. Move the TCU to an ESD approved workbench or other approved supportive surface.

TCM Installation

The TCM attaches electrically to the TCU by four board-to-board connectors. In addition, it is secured to the TCU by four screws.

When populating a TCU with TCMs, the mandatory installation order is: A - B - C - D. This configuration is shown in the following diagram.



Caution

Before handling a TCM, follow proper ESD Grounding procedures. Failure to do so could damage the TCM or the TCU processing unit.

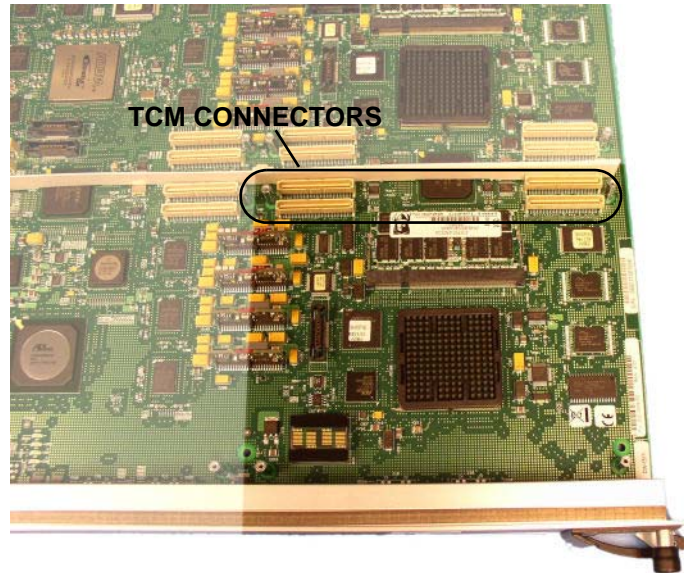
Caution

Contact TAC for information about installing a fourth TCM in the D location.



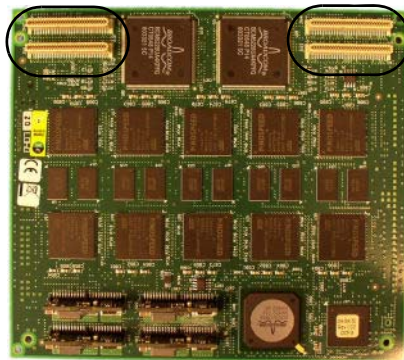
Never install a TCM without a heatsink in the D location.

1. Note the region where the TCM attaches to the TCU. In the photograph below, the four TCM connectors are circled. The TCM plugs into place here.

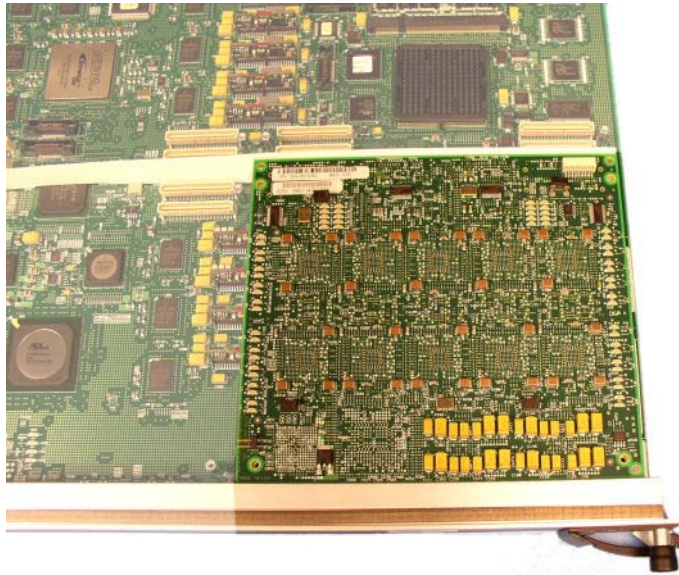


2. Note the four board-to-board connectors in the following photograph that shows the chip side of the TCM.

TCM CONNECTORS

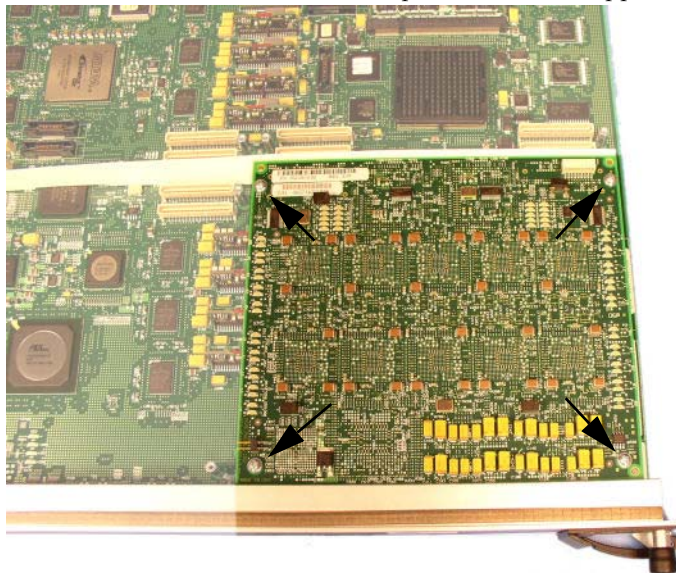


3. Place the TCM on the TCU by mating the board-to-board connectors. The TCM lines up with four threaded stand-offs so you can screw it to the TCU in the next step.



Note: Ensure that the plastic air deflector that runs parallel to the TCU bezel does not get trapped by the TCM.

4. Screw the TCM to the TCU at four points with the supplied screws.



5. Install any additional TCMs and re-insert the TCU into the Net-Net 9200 chassis.

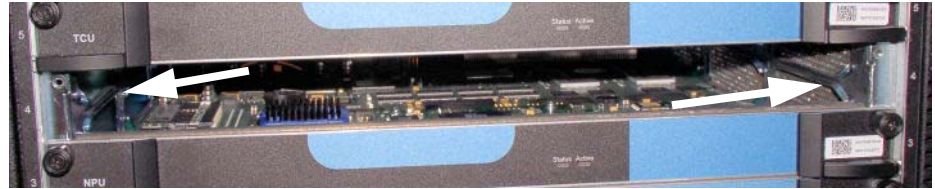
Note: Reference the following document for addition installation information. D.7.1 Maintenance and Troubleshooting Guide section 8 upgrade management TCU/TCM upgrade.

TCU Replacement

The TCU with a newly attached TCM must be replaced in the chassis. The following steps illustrate the proper way to replace the TCU, using the SPU for illustration:

To replace a processing unit:

1. Insert the processing unit into the flared opening of the upper and lower slide rails.



The rails guide the processing unit to engage the mid-plane connector squarely.

2. Push the processing unit completely into the Net-Net 9200 chassis, until it is almost flush with the front face of the chassis.

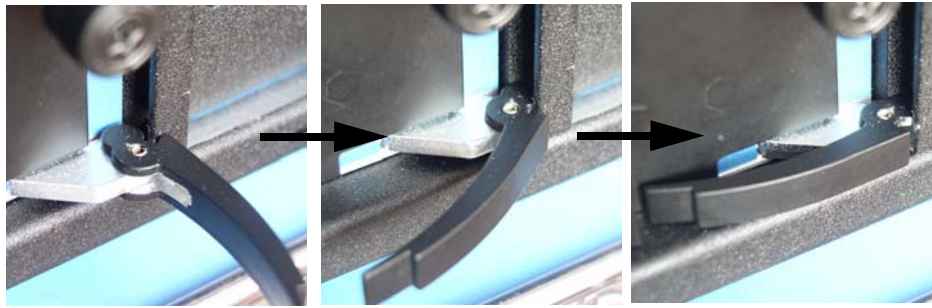


Make sure that the slide latches are pushed toward the center of the card before proceeding.

3. Swing the ejector levers so that they are perpendicular to the front face of the Net-Net 9200.

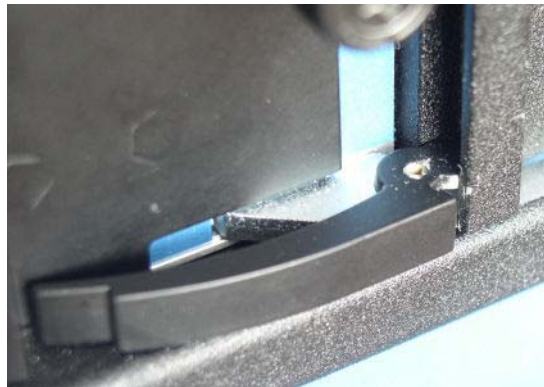


4. Pivot the ejector levers inward toward the mid plane, making sure that the notch on the outer side of each ejector lever catches the processing unit frame's front lip on the front of the chassis.



This action draws the processing unit fully into the chassis.

5. Push the ejector levers completely against the processing unit's front panel.



You will feel resistance when inserting processing units into the chassis from the EMI mesh gasket pressing on adjacent cards or on the chassis.

6. Slide the slide latches away from the center of the of the processing unit.



Each slide latch travels 0.28 inches (0.71 cm) before stopping.

Each slide latch covers the cut-out portion of the ejector levers:



7. Screw the thumb screws into the chassis with a #2 Phillips screwdriver. This creates the final connection between the processing unit and the chassis.



Note: Reference the following document for additional installation information. D.7.1 Maintenance and Troubleshooting Guide section 8 upgrade management TCU/TCM upgrade.

Redundant TCM Installation

Repeat the [TCU Removal \(7\)](#), [TCM Installation \(9\)](#), and [TCU Replacement \(12\)](#) sections for the redundant TCMs in TCU #2 and TCU #3, if applicable.

System Startup

You may now start up the Net-Net 9200 in the approved manner.