

Upgrading Memory on GE/FE and OCx/STMx ATM Line Modules

This notice describes how to upgrade the memory on GE/FE and OCx/STMx ATM line modules from 128 MB to 256 MB.

Performing the memory upgrade consists of the following tasks, in this order:

- 1** Checking the Memory Installed
- 2** Verifying the JUNOS Software and State of the Line Modules
- 3** Preparing for the Upgrade
- 4** Removing the Line Module
- 5** Removing the 128-MB SODIMM
- 6** Installing the 256-MB SODIMM
- 7** Affixing the Faceplate Label
- 8** Reinstalling the Line Module
- 9** Registering the Memory Upgrade



Warning: Do not insert any metal object, such as a screwdriver, or place your hand into an open slot or the backplane when the E-series router is on. Remove jewelry (including rings, necklaces, and watches) before working on equipment that is connected to power lines. These actions prevent electric shock and serious burns.



Caution: When handling modules, use an antistatic wrist strap connected to the E-series router's ESD grounding jack, and hold modules by their edges. Do not touch the components, pins, leads, or solder connections. These actions help to protect modules from damage by electrostatic discharge.

Checking the Memory Installed

Before you install the new memory, issue the **show hardware** command to check how much memory is currently installed. The GE/FE line module and the OCx/STMx ATM line module currently installed should each have 128 MB of memory.

To upgrade memory on the GE/FE line module or the OCx/STMx ATM line module, you need the appropriate upgrade kit for each module. Each kit contains one 256-MB small outline dual inline memory module (SODIMM). Table 1-1 identifies the memory upgrade kits that are available.

Table 1-1 256-MB Memory Upgrade Kits

Model #	Description	Assembly #
ERX-GEFE256M-UPG	256-MB Memory Upgrade Kit for GE/FE-8	370-00010
ERX-OCXA256M-UPG	256-MB Memory Upgrade Kit for OC3/OC12-ATM	370-00011

Verifying the JUNOS Software and State of the Line Modules

You must have one of the following software releases or a higher-numbered release before you proceed with the memory upgrade.

- Release 3.2.3p27-0
- Release 3.3.2p8-1
- Release 3.4.1p8-2
- Release 4.0.3
- Release 4.1.1
- Release 5.0.0

To verify that the line modules that you want to upgrade are online and are running one of the required software releases shown in the table above, issue the **show version** command. If the line modules meet these requirements, you can proceed with the upgrade.

If the line modules that you want to upgrade are not online, you must investigate and resolve the cause of the problems. For information about the states of line modules reported by the **show version** command, see *ERX System Basics Configuration Guide, Chapter 4, Managing the System*.

If the line modules you want to upgrade are not running a required software release, upgrade the software on the line module before you proceed with the memory upgrade. For instructions on installing the software, see *E-Series Installation and User Guide, Appendix B, Installing JUNOS Software*.



Note: Attempting to install a 256-MB GE/FE or OCx/STMx ATM line module with a software release that does not meet the minimum requirements may cause booting or operational problems.

Preparing for the Upgrade

Before you begin the memory upgrade, be sure you have the following items on hand:

- Phillips screwdriver
- Antistatic bag in which to temporarily store the line module
- One of the memory upgrade kits listed in Table 1-1. Each upgrade kit includes:
 - > Disposable antistatic wrist strap
 - > One 256-MB SODIMM
 - > Faceplate label for GE/FE or OCx/STMx ATM line module
 - > This document

Removing the Line Module

To remove the 128-MB GE/FE or OCx/STMx ATM line module:

- 1** (Optional) Issue the **slot disable** command to remove the line module from service. See *E-Series System Basics Configuration Guide, Chapter 5, Managing Line Modules and SRP Modules* for information about the **slot disable** command.
- 2** Ground yourself by using an antistatic wrist strap or other device.



Caution: When handling modules, use an antistatic wrist strap connected to the E-series router's ESD grounding jack. This action helps to protect the module from damage by electrostatic discharge.

- 3** Use a screwdriver to loosen the thumb screws located at the top and bottom of the module panel.

- 4 Pull the ejector handles located at the top and bottom of the module so that they are in the open position (position 1), as shown in Figure 1.

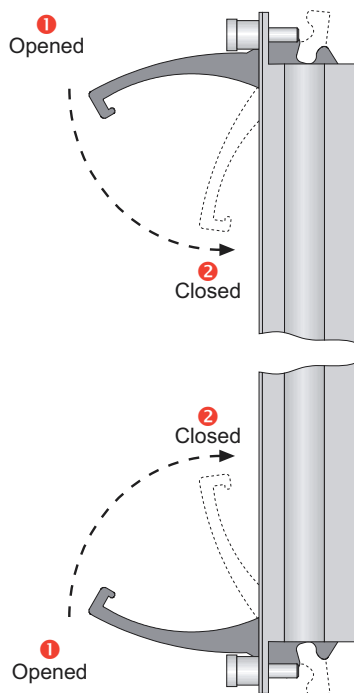


Figure 1 Positioning ejectors before removing a module



Caution: Always handle the module by its edges. Do not touch the components, pins, leads, or solder connections.

- 5 Carefully slide the module out of the chassis.
- 6 Place the module in its antistatic bag until you are ready to upgrade the memory.
- 7 Cover the empty chassis slot with a blank faceplate, and tighten the faceplate's captive screws using a Phillips screwdriver. Turn both screws several times before tightening them completely.

Removing the 128-MB SODIMM

To upgrade memory on the 128-MB GE/FE or 128-MB OCx/STMx ATM line module to 256 MB, you must first remove the single 128-MB SODIMM that is currently installed on the module. The SODIMM socket has a cream ceramic connector at one edge.

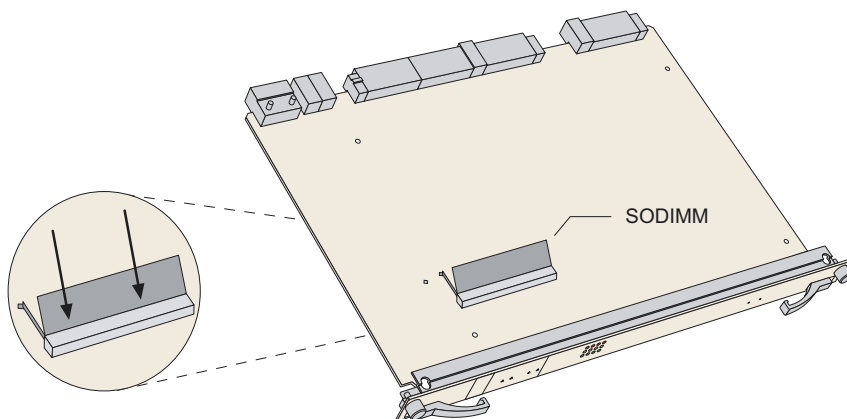
To remove the 128-MB SODIMM from the line module:

- 1 Remove the module from its antistatic bag.
- 2 Push down on the back edge of a SODIMM to release it from the socket (see Figure 2 in the next section).
- 3 Gently pull up and out to disconnect the SODIMM from the connectors and remove it from the socket.

Installing the 256-MB SODIMM

To install the 256-MB SODIMM on the line module:

- 1 Locate the SODIMM socket on the line module (see Figure 2).



- 1 Align notches in SODIMM and connector.
- 2 Push SODIMM into connector at an angle of approximately 45 degrees.
- 3 Push down on back edge of SODIMM until it snaps into socket.

Figure 2 SODIMM socket on line module

- 2 Insert the 256-MB SODIMM from the upgrade kit at an angle of approximately 45 degrees into the empty ceramic connector, so that the notch in the long gold edge of the SODIMM aligns with the notch in the connector.

The notch on the long gold edge will no longer be visible when the SODIMM is pressed in far enough.

- 3 Press the top surface downward into the socket until the socket spring snaps into place and holds it.

Affixing the Faceplate Label

After you install the 256-MB SODIMM on the line module, affix the label included in the upgrade kit to the faceplate of the line module so you can correctly identify this module for future use.

To affix the faceplate label:

- 1 Ground yourself using an antistatic wrist strap, or other device.



Caution: When handling modules, use an antistatic wrist strap connected to the E-series router's ESD grounding jack. This action helps to protect the module from damage by electrostatic discharge.

- 2 In the upgrade kit, locate the faceplate label for the line module.
- 3 Locate the faceplate on the front of the line module.
- 4 Affix the label to the faceplate above the lower ejector (see Figure 3).

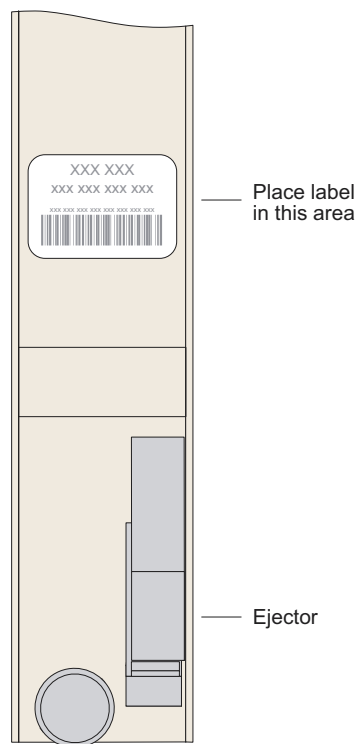


Figure 3 Affixing the faceplate label

Reinstalling the Line Module



Note: Make sure the corresponding I/O module is properly installed before you install the corresponding line module. Otherwise, the E-series router diagnostics fail, and after the line module has tried to reboot, its status will be “inactive” when you issue a **show version** command. Line modules are located in the front of the router, and I/O modules are located in the back of the router.

To reinstall the line module:

- 1 Ground yourself by using an antistatic wrist strap or other device.



Caution: When handling modules, use an antistatic wrist strap connected to the E-series router's ESD grounding jack. This action helps to protect the module from damage by electrostatic discharge.

- 2 Choose the chassis slot where you want to insert the line module. In most cases, this will be the same slot in which the module was installed before the upgrade procedure.
- 3 With a Phillips screwdriver, loosen the screws that secure the blank faceplate covering the empty chassis slot, if present, and remove the faceplate.



Caution: Always handle the module by its edges. Do not touch the components, pins, leads, or solder connections.

- 4 Verify that the ejectors are in the open position, as shown in Figure 1.
- 5 Guide the module into the chassis by placing it between the guides of the selected slot and pushing the module until it stops.

The module stops sliding when the ejectors make contact with the front of the chassis.



Caution: If you meet strong resistance when attempting to seat the module using the ejectors, remove it from the chassis and confirm that the slot is one designed to hold the module. Also, be sure that you have aligned the top and bottom edges in the correct matching tracks.

- 6 Insert the module into the midplane by simultaneously depressing both ejectors (as shown in Figure 1) and exerting forward pressure on the module.
- 7 Tighten the module's captive screws using a Phillips screwdriver. Turn each screw several times, alternating between screws, before tightening them completely to allow the module to sit correctly.
- 8 (Optional) Use the **enable slot** command if you previously entered the **slot disable** command. See *E-Series System Basics Configuration Guide, Chapter 5, Managing Line Modules and SRP Modules* for information about the **enable slot** command.

Registering the Memory Upgrade

Registering the memory upgrades ensures that we will have accurate and up-to-date information about your current hardware configuration in the event that you need technical support in the future.

After upgrading the memory on all of the GE/FE and OCx/STMx ATM line modules in a single E-series router, you must verify and register your memory upgrades.

To register the memory upgrade:

- 1** Make sure that you have reinstalled the upgraded hardware in the E-series router.
- 2** Issue the **show version** command to ensure that all upgraded line modules are operational.
- 3** Issue the **show hardware** command.
- 4** Verify that the display indicates that the upgraded hardware now has 256 MB of memory.
- 5** Issue the **show hardware > hwmemup.txt** command to save the current hardware configuration to a text file named hwmemup.txt.
- 6** Copy the file hwmemup.txt to a computer that has Internet access.
- 7** In your Web browser, go to the Juniper Networks memory upgrade registration Web site, and follow the instructions for registering your memory upgrades.

<http://www.juniper.net/support/upgrade/eseries-mem.html>

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