



# Connecting Cisco NAM Network Modules to the Network

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This guide describes how to connect Cisco Network Analysis Module (NAM) network modules to your network. It contains the following sections:

- [Network Analysis Module Overview, page 1](#)
- [Online Insertion and Removal with a Cisco Network Analysis Module, page 3](#)
- [Related Documents, page 4](#)
- [Obtaining Documentation, Obtaining Support, and Security Guidelines, page 5](#)

## Network Analysis Module Overview

This section provides information on the network analysis module (NM-NAM). (See [Figure 1](#).)



### Note

The Network Analysis Module (NAM) is available in multiple hardware forms for some Cisco routers and Catalyst switches. This document applies only to the NAM for branch routers, also known as modular access, multiservice, or integrated services routers.

All network modules have an enable (EN) LED. This LED indicates that the module has passed its self-tests and is available to the router.

All network analysis modules display an additional power (PWR) LED, a disk (DISK) LED, and two additional LEDs for the Fast Ethernet port (see [Figure 1](#)).



### Caution

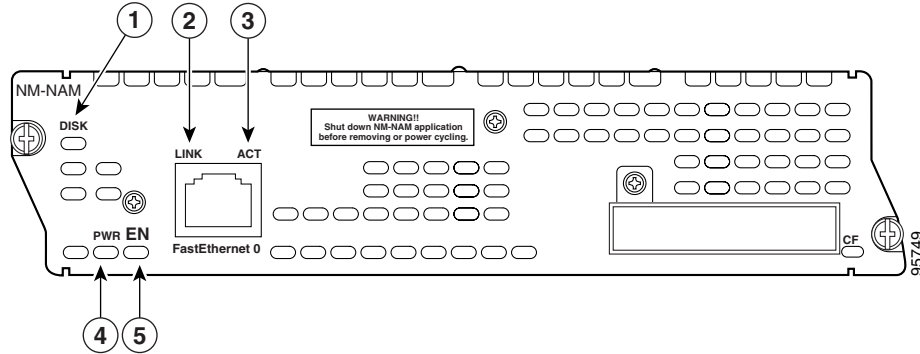
To comply with the Telcordia GR-1089 NEBS standard for electromagnetic compatibility and safety, connect the network analysis module (NM-NAM) only to intrabuilding or nonexposed wiring or cabling. The intrabuilding cable must be shielded and the shield must be grounded at both ends.



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**Figure 1** Cisco Network Analysis Module (NM-NAM) Faceplate and LEDs



Callout	LED	Meaning
1	DISK	There is activity on the hard drive.
2	LINK	The Fast Ethernet connection is available to the network module.
3	ACT	There is activity on the Fast Ethernet connection.
4	PWR	Power is available to the network module.
5	EN	The module has passed self-test and is available to the router.

## Connecting Cisco Network Analysis Modules to the Network

To connect a network analysis module to the network, use a straight-through 2-pair Category 5 unshielded twisted-pair (UTP) cable to connect the RJ-45 port on the network analysis module to a switch, hub, repeater, server, or other network device. (See [Figure 2](#).)



### Caution

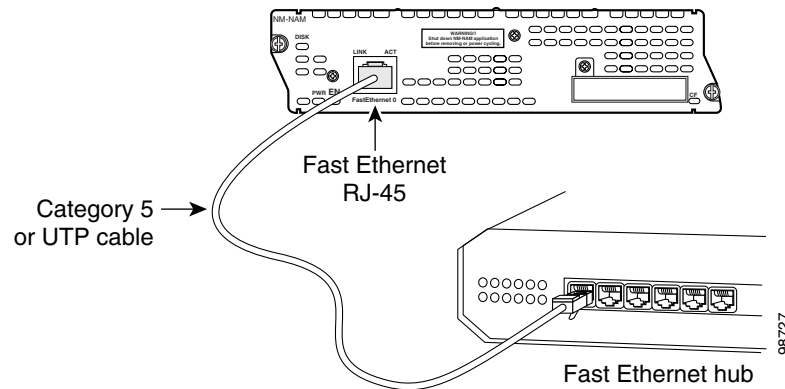
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### Note

RJ-45 cables are not available from Cisco Systems. These cables are widely available and must be Category 5 cables.

**Figure 2** Connecting a Cisco Network Analysis Module to a Fast Ethernet Hub



## Online Insertion and Removal with a Cisco Network Analysis Module

Some Cisco modular access routers allow you to replace network modules without switching off the router or affecting the operation of other interfaces. This feature is called *online insertion and removal* (OIR). OIR of network modules provides uninterrupted operation to network users, maintains routing information, and ensures session preservation.



### Caution

Unlike other network modules, network analysis modules use hard disks. Online removal of disks without proper shutdown can result in file system corruption and might render the disk unusable. The operating system on the network analysis module must be shut down in an orderly fashion before the network module is removed.



### Caution

Cisco routers support OIR with similar modules only. If you remove a network module, install another module exactly like it in its place. If you remove a two-slot network module (along with any installed WAN or voice interface cards), install another module and card combination exactly like it.

For a description of informational and error messages that may appear on the console during this procedure, see the hardware installation guide for your type of router.

To perform online removal of a network analysis module and insertion of a replacement, follow these steps with the router in privileged EXEC mode:

**Step 1** Perform a graceful halt of the network analysis module by using the following command:

```
Router# service-module analysis-module slot/0 shutdown
```

```
Shutdown is used for Online removal of Service Module.
Do you want to proceed with shutdown? [confirm]
Use service module reset command to recover from shutdown
```

**Step 2** Press **Enter** to confirm the request. Wait for the following status message (it may take a minute or two):

```
%SERVICEMODULE-5-SHUTDOWN2:Service module NAM-Sensor1/0 shutdown complete
```

- Step 3** Unplug the network interface cable from the network analysis module.
- Step 4** Loosen the two captive screws holding the network analysis module in the chassis slot.
- Step 5** Remove the network analysis module from the slot.
- Step 6** Align the replacement network analysis module with the guides in the chassis slot, and slide it gently into the slot.



**Note** If the router is not fully configured with network modules, make sure that blank panels fill the unoccupied chassis slots to provide proper airflow.

- Step 7** Push the module into place until you feel the edge connector mate securely with the connector on the backplane.
- Step 8** Reconnect the network interface cable previously removed in [Step 3](#).
- Step 9** Tighten the two captive screws on the faceplate.
- Step 10** Reset the network analysis module using the **reset** command.
- ```
Router# service-module analysis-module slot/0 reset
```
- Use reset only to recover from shutdown or failed state  
Warning: May lose date on the hard disc!  
Do you want to reset?[confirm]
- Step 11** Press **Enter** to confirm the request. The network analysis module resets itself.
- Step 12** Check that the network module LEDs are on and that the power and enable LEDs on the front panel also are on. This inspection ensures that connections are secure and that the new unit is operational.

## Related Documents

For additional information, see the following documents and resources.

| Related Topic                                          | Document Title                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network Analysis Module software configuration         | <i>Network Analysis Module (NM-NAM)</i><br><a href="http://www.cisco.com/en/US/docs/routers/access/interfaces/nm/hardware/installation/guide/nm_network_nam.html">http://www.cisco.com/en/US/docs/routers/access/interfaces/nm/hardware/installation/guide/nm_network_nam.html</a> |
| Regulatory compliance and safety information           | <i>Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information</i><br><a href="http://www.cisco.com/en/US/docs/routers/access/interfaces/rcsi/IOHrcsi.html">http://www.cisco.com/en/US/docs/routers/access/interfaces/rcsi/IOHrcsi.html</a>             |
| Cisco IOS software website and reference documentation | <i>Cisco IOS Software</i><br><a href="http://www.cisco.com/web/psa/products/index.html?c=268438303">http://www.cisco.com/web/psa/products/index.html?c=268438303</a>                                                                                                               |

# Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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