



# Connecting Cisco WLAN Controller Enhanced Network Modules to the Network

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This guide describes how to connect Cisco wireless LAN (WLAN) controller enhanced network modules and contains the following sections:

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## Cisco Wireless LAN Controller Network Modules

The Cisco wireless LAN (WLAN) controller network module is designed to provide 802.11 wireless networking solutions to small- and medium-sized businesses (SMBs) and enterprise branch office customers.

Two models of Cisco WLAN controller network module are available:

- NME-AIR-WLC8-K9— See [Figure 1](#)
- NME-AIR-WLC12-K9— See [Figure 1](#)

For information about the Cisco Wireless LAN controller module NM-AIR-WLC6 solution, see the *Connecting Cisco WLAN Controller Network Modules* document at the following URL:

<http://www.cisco.com/en/US/docs/routers/access/interfaces/nm/hardware/installation/guide/controll.html>



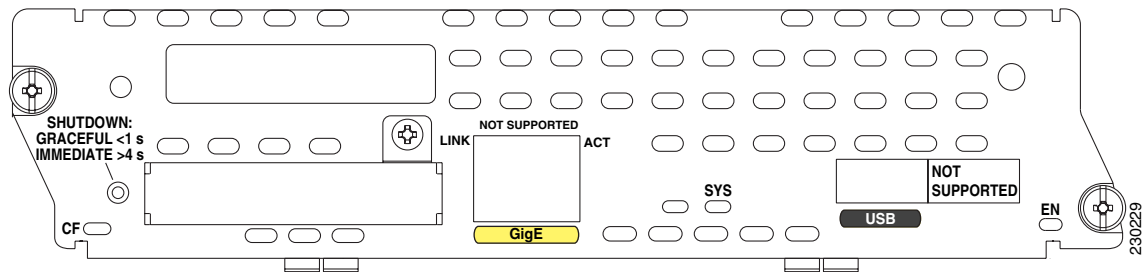
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Both models of Cisco WLAN controller enhanced network modules (NMEs) ship from the factory with the following hardware preinstalled.

| Model             | Hard Disk | Memory |
|-------------------|-----------|--------|
| NME-AIR-WLC8-K9=  | N/A       | 256 MB |
| NME-AIR-WLC12-K9= | N/A       | 256 MB |

Figure 1 Cisco WLAN Controller Network Module Faceplate



|                |   |
|----------------|---|
| <b>LINK</b>    | <p>Status of Gigabit Ethernet link</p> <p>On—Link is enabled.</p> <p>Off—Link is disabled.</p> <p><b>Note</b> This interface is not supported in this Cisco IOS software release.</p>   |
| <b>ACT</b>     | <p>Status of Gigabit Ethernet activity</p> <p>On—Active.</p> <p>Off—Inactive.</p>   |
| <b>PWR/SYS</b> | <p>Status of system shutdown</p> <p></p> <p><b>Caution</b> Do not remove power without first shutting down the application.</p> <p>On—Application is stable.</p> <p>Off—System is shut down and ready for host power down.</p> <p>Flashing—System shutdown is in progress.</p> |
| <b>EN</b>      | <p>Status of the network module</p> <p>On—Detected by the host Cisco IOS software and enabled.</p> <p>Off—Disabled.</p>   |
| <b>CF</b>      | <p>Status of the CompactFlash</p> <p>Off—CompactFlash is not used.</p> <p>Flashing—Application detected CompactFlash at bootup.</p>   |

## Shutting Down the WLAN Controller

Insert a narrow pin into the shutdown opening on the faceplate, and press the button for *less than 2 seconds* to perform a graceful shutdown of the hard disk before removing power from the router or before starting an online insertion and removal (OIR) sequence on the router. The application may take up to 2 minutes to fully shut down.

**Caution**

If you press the shutdown button for *more than 2 seconds*, an immediate shutdown of the hard disk will occur and may cause file corruption on the network module's hard disk. After an immediate shutdown, the HD and SYS LEDs remain lighted. Press the shutdown button for *less than 2 seconds* to gracefully reboot the network module.

## Establishing a Gigabit Ethernet Internal Connection

The Cisco WLAN controller-enhanced network module lets you establish an internal Gigabit Ethernet connection between an onboard small-form-factor pluggable (SFP) Gigabit Ethernet module and a WLAN controller-enhanced network module installed in Cisco 3700 series routers, Cisco 2800 Integrated Services Routers (ISR), or Cisco 3800 ISRs.

**Note**

The Cisco 2801 Integrated Services Router does not support the Cisco WLAN controller network module.

Internal connections must be established as follows:

- Cisco 2811 router—Install the WLAN controller network module in slot 1
- Cisco 2821 router—Install the WLAN controller network module in slot 1
- Cisco 2851 router—Install the WLAN controller network module in slot 1
- Cisco 3725 router—Install the WLAN controller network module in slot 1
- Cisco 3745 router—Install the WLAN controller network module in any of slots 1 through 4
- Cisco 3825 router—Install the WLAN controller network module in slots 1 and 2
- Cisco 3845 router—Install the WLAN controller network module in any of slots 1 through 4

## Online Insertion and Removal of Cisco Network Modules

Some Cisco 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 a module provides uninterrupted operation to network users, maintains routing information, and ensures session preservation.

**Caution**

Cisco routers support OIR with similar modules only. If you remove a module, install another module exactly like it in its place. If you remove a 2-slot 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 router.

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

**Step 1** Initiate a network module session by using the following command:

Press RETURN to get started!

```
Router> enable
Router# service-module integrated-service-engine 1/0 session
Trying 10.10.10.1, 2065 ... Open
User:
```

**Step 2** Exit the network module session by pressing **Control-Shift-6**, and then pressing **x**.

**Step 3** Save the running configuration of the network module by using the following command from the **router # prompt**:

```
Router# copy running-config tftp tftp-server-address filename
```

**Step 4** On the router, clear the integrated-service-engine console session by using the following command:

```
Router# service-module integrated-service-engine slot/unit session clear
```

**Step 5** Perform a graceful shutdown of the network module disk drive by using the following command:

```
Router# service-module integrated-service-engine slot/unit shutdown
```

**Step 6** Shut down the network module interface:

```
Router (config)# interface integrated-service-engine slot/unit
Router (config-if)# shutdown
Router (config-if)# exit
```

**Step 7** Loosen the two captive screws holding the network module in the chassis slot.

**Step 8** Slide the network module out of the slot.

**Step 9** Align the replacement network 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 10** Push the module into place until you feel its edge connector mate securely with the connector on the backplane.

**Step 11** Check that the network module LEDs are on and that the power (PWR) and enable (EN) LEDs on the front panel are also on. This inspection ensures that connections are secure and that the new unit is operational.

**Step 12** Initiate a network module session by using the following command:

```
Router# service-module Integrated-Service-Engine 2/0 session

Trying 21.21.21.1, 2130 ... Open

(Cisco Controller) >
```

- Step 13** Restore the network module running configuration by using the following command from the service module prompt:

```
Router# copy tftp running-config tftp-server-address filename
```

- Step 14** On the router, clear the network module session by using the following command:

```
Router# service-module integrated-service-engine slot/unit session clear
```

## Related Documents

For additional information, see the following documents and resources.

| Related Topic  | Document Title   |
|--|--|
| 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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