



Overview of Cisco Network Modules and Service Modules for Cisco Access Routers

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This chapter provides an overview of Cisco network modules and service modules used in Cisco access routers, and contains the following sections:

- [Introduction to Cisco Network Module and Service Module Form Factors, page 1](#)
- [Cisco Access Routers and Cisco Network Modules, page 4](#)
- [Cisco IOS Software Releases and Cisco Network Modules and Cisco Service Modules, page 9](#)
- [Cisco Interface Cards Supported on Cisco Network Modules, page 9](#)
- [Using Network Modules in Service Module Slots, page 12](#)
- [Cabling for Cisco Network Modules, page 12](#)
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- [Platform Support for Cisco Network Modules, page 18](#)
- [Related Documents, page 35](#)
- [Where to Go Next, page 37](#)

Introduction to Cisco Network Module and Service Module Form Factors

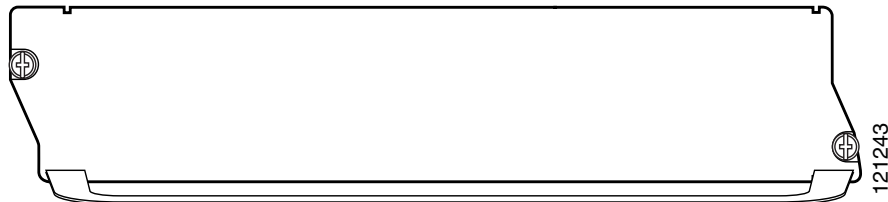
Network Module Form Factors

Cisco network modules are available in the following five form factors to provide greater modularity and functionality for users:

- Single-wide network modules, also called NM or NME (see [Figure 1](#))
- Extended single-wide network modules, also called NME-X (see [Figure 2](#))
- Double-wide network modules, also called NMD (see [Figure 3](#))
- Extended double-wide network modules, also called NME-XD (see [Figure 4](#))
- Single-wide network module with a network module adapter for use in Cisco 2900 series and 3900 series ISRs.

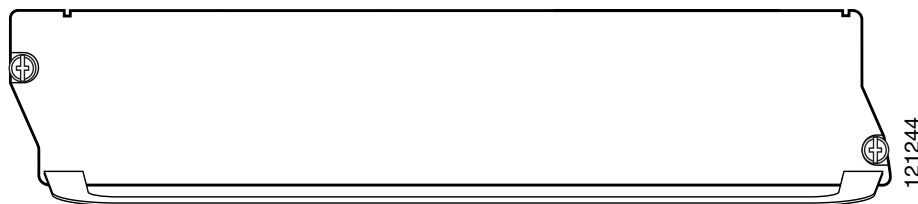
Single-wide network modules are installed in fixed network module slots on Cisco 2600 series, Cisco 3600 series, Cisco 3700 series, and Cisco MWR 1941-DC routers, and in configurable network module slots on Cisco 2811, Cisco 2821, Cisco 2851, and Cisco 3800 series routers. See [Figure 1](#) for a sample single-wide network module. Single-wide network modules are installed in Cisco 2900 series and 3900 series ISRs by using a network module adapter.

Figure 1 *Sample Single-Wide Network Module*



Extended single-wide network modules are installed in configurable network module slots on the Cisco 2821, Cisco 2851, and Cisco 3800 series routers. Extended single-wide network modules cannot be installed in Cisco 2600 series, Cisco 3600 series, Cisco 3700 series and Cisco MWR 1941-DC routers. See [Figure 2](#) for a sample extended single-wide network module.

Figure 2 *Sample Extended Single-Wide Network Module*



Double-wide network modules require the removal of the right side panel for installation in the top slot of the Cisco 3725 router, because the bottom slot only supports single-wide modules. On the Cisco 3745 router, the double-wide network module occupies two single-wide slots and is supported by removing the midwall divider. On Cisco 2851 and Cisco 3800 series routers, network module slots must be set up properly before double-wide network modules can be installed. See [Figure 3](#) for a sample double-wide network module.

Figure 3 *Sample Double-Wide Network Module*



Tip

For information on configuring network module slots to fit double-wide network modules, see the [“Preparing Cisco Router Slots for Network Module and Service Module Installation”](#) section on page 9.

Extended double-wide network modules are supported only on the Cisco 2851 and Cisco 3800 series routers. Extended double-wide network modules occupy two extended single-wide network module slots, which must be set up properly before extended double-wide network modules can be installed. See [Figure 4](#) for a sample extended double-wide network module.

Figure 4 Sample Extended Double-Wide Network Module



For information on configuring network module slots to fit extended double-wide network modules, see the [“Preparing Cisco Router Slots for Network Module and Service Module Installation”](#) section on [page 9](#).



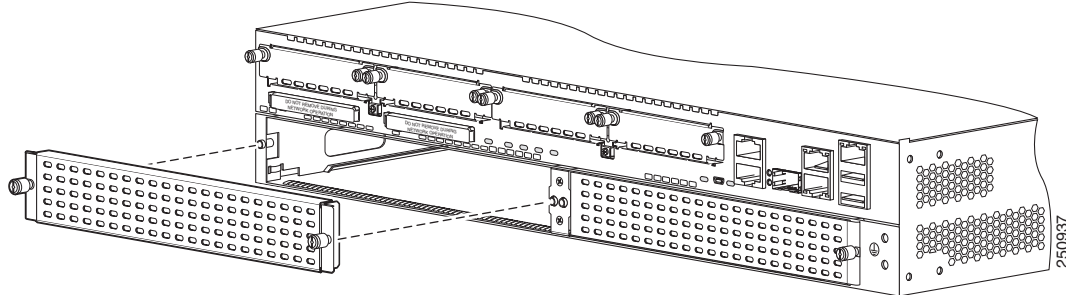
Extension modules, such as the EVM-HD-8FXS/DID, are equivalent to a single-wide network module. However, extension modules are not supported in all Cisco access router network module slots. See [Table 1](#) for information on slots supporting extension modules.

Service Module Form Factors

Cisco 2900 series and 3900 series routers have only single-wide service module (SM) slots and double-wide service module slots. There is no extended service module. Some network modules can be used in service module slots using an adapter. See [“Using Network Modules in Service Module Slots”](#) section on [page 12](#).

There is only one form factor blank panel and it is a single-wide blank panel. Two blank panels and a divider are used to cover a double-wide slot area. See [Figure 5](#).

Figure 5 *Service Module Single-Wide Blank Panel*



Cisco Access Routers and Cisco Network Modules

The Cisco network modules described in this document are supported on the following Cisco routers:

- Cisco 2600 series, including the Cisco 2610, Cisco 2610XM, Cisco 2611, Cisco 2611XM, Cisco 2612, Cisco 2613, Cisco 2620, Cisco 2620XM, Cisco 2621, Cisco 2621XM, Cisco 2650, Cisco 2650XM, Cisco 2651, Cisco 2651XM, and Cisco 2691 routers



Note References to the Cisco 2600XM routers apply to the following routers: Cisco 2610XM, Cisco 2611XM, Cisco 2620XM, Cisco 2621XM, Cisco 2650XM, and Cisco 2651XM.

- Cisco 2811, Cisco 2821, and Cisco 2851 routers
- Cisco 3600 series, including the Cisco 3620, Cisco 3631, Cisco 3640, Cisco 3640A, Cisco 3661, and Cisco 3662 routers
- Cisco 3700 series, including the Cisco 3725 and Cisco 3745 routers
- Cisco 3800 series, including the Cisco 3825 and Cisco 3845 routers
- Cisco MWR 1941-DC routers
- Cisco 2900 series and Cisco 3900 series routers support some network modules with the addition of a network module adapter. See “[Using Network Modules in Service Module Slots](#)” section on [page 12](#).

For information on these Cisco routers, see the hardware documentation described in the “[Related Documents](#)” section on [page 35](#).

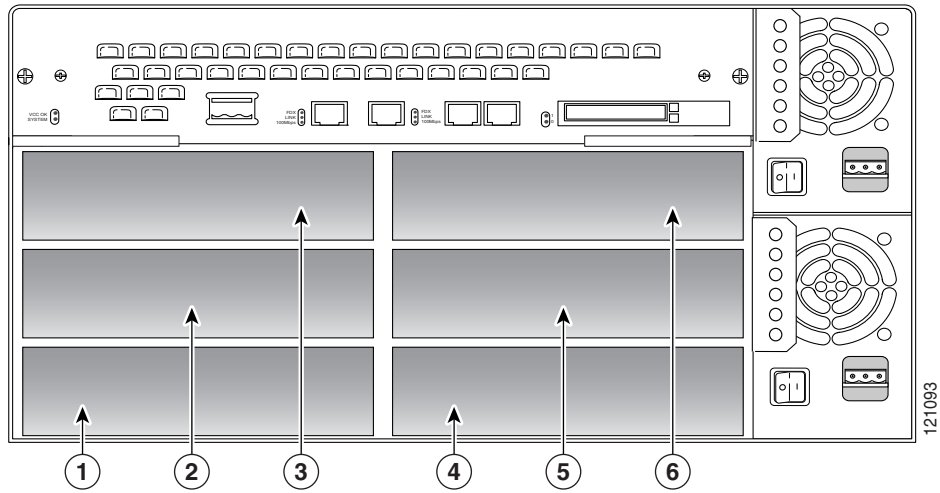
Cisco Access Routers and Cisco Service Modules

Cisco 2900 series, Cisco 3900 series, and Cisco Generation 2 ISRs have service module slots instead of network module slots. Service module slots are slightly wider than network module slots. Cisco 2900 series and 3900 series ISR service module slots accommodate some, but not all, network modules. See the document [Module Support on Cisco Integrated Services Routers Generation 2](#). Because of the physical difference, network modules require a service module adapter to fit in the Cisco 2900 and 3900 series service module slots. See “[Using Network Modules in Service Module Slots](#)” section on [page 12](#).

Network Module and Service Module Slot Locations and Numbering on Cisco Access Routers

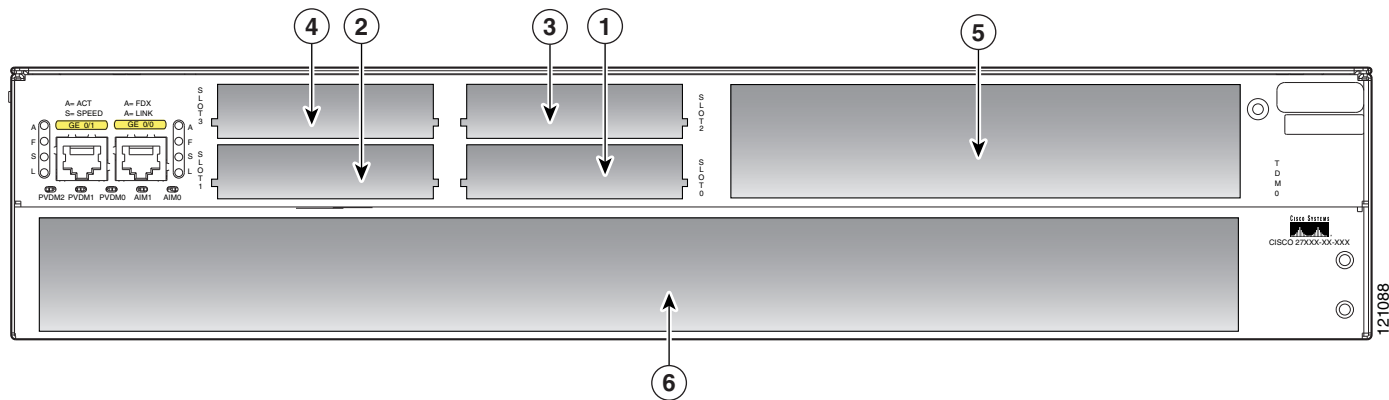
Most Cisco access router network module and service module slots are numbered from right to left, bottom to top. However, some routers use different slot numbering schemes. In Cisco ISR G2s, the interface cards and service module slots are shown in the [Overview of Cisco Interface Cards in Cisco Access Routers](#). See [Figure 6](#) and [Figure 7](#) for examples of network module slot numbering on Cisco access routers.

Figure 6 Cisco 3660 Router Rear View



1	Network module slot 2	4	Network module slot 1
2	Network module slot 4	5	Network module slot 3
3	Network module slot 6	6	Network module slot 5

Figure 7 Chassis Slot Locations in Cisco 2851 Routers



1	High-speed WAN interface card slot 0	4	High-speed WAN interface card slot 3
2	High-speed WAN interface card slot 1	5	Extension module slot
3	High-speed WAN interface card slot 2	6	Network module slot

Platform and Slot Limitations for Cisco Service Modules and Network Modules

Certain platforms have restrictions on the number of total network modules and service modules of a certain type that can be installed, and some slots do not support certain network modules.

See [Table 1](#) for information on the type and quantity of network module and service module slots available on Cisco access routers.

Table 1 Service Module and Network Module Slots Available on Cisco Access Routers

Cisco Router	Number of Slots	Slot Type	Slot Numbering	Installation Notes and Limitations
Cisco 2600 series	1	Single-wide	Slot 1	Does not support extension modules.
Cisco 2811 routers	1	Single-wide	Slot 1	Does not support extension modules.
Cisco 2821 routers	1	Single-wide Extended single-wide	Slot 1	Extension modules are not supported in standard network module slots on this platform.
	1	Extension module	Slot 2	Extension module slots do not support other single-wide network modules.
Cisco 2851 routers	1	Single-wide Extended single-wide Double-wide Extended double-wide	Slot 1	Extension modules are not supported in standard network module slots on this platform.
	1	Extension module	Slot 2	Extension module slots do not support other single-wide network modules.
Cisco 3620 routers	2	Single-wide	Slot 0–slot 1	Does not support extension modules.

Table 1 Service Module and Network Module Slots Available on Cisco Access Routers (continued)

Cisco Router	Number of Slots	Slot Type	Slot Numbering	Installation Notes and Limitations
Cisco 2911	1	1 Single-wide SM	Slot 1	Does not support extension modules. Requires a network module adapter. See “Using Network Modules in Service Module Slots” section on page 12.
Cisco 2921	1	1 Single-wide SM or 1 Double-wide SM	Slot 1 (left)	Does not support extension modules. Requires a network module adapter. See “Using Network Modules in Service Module Slots” section on page 12. Removing the right panel for a double-wide SM the double-wide slot becomes slot 1.
Cisco 2951	2	2 Single-wide SMs or 1 Double-wide SM	Slot 1, 2	Does not support extension modules. Requires a network module adapter. See “Using Network Modules in Service Module Slots” section on page 12. Removing the right panel for a double-wide SM the double-wide slot becomes slot 2.
Cisco 3925	2	2 Single-wide SMs or 1 Single-wide SM and 1 Double-wide (top slot) SM	Slot 1, 2	Does not support extension modules. Requires a network module adapter. See “Using Network Modules in Service Module Slots” section on page 12. Removing the top right panel for a double-wide SM, the double-wide top slot becomes slot 2.
Cisco 3945	4	4 Single-wide SMs or 1 Double-wide SM (top slot) and 2 Single-wide SMs	Slot 1, 2, 3, 4	Does not support extension modules. Requires a network module adapter. See “Using Network Modules in Service Module Slots” section on page 12. Removing the top right panel for a double-wide SM, the double-wide top slot becomes slot 4.
Cisco 3640 routers	4	Single-wide	Slot 0–slot 3	Does not support extension modules.
Cisco 3660 routers	6	Single-wide Double-wide	Slot 1–slot 6 (see Figure 6)	Slot 0 refers to the board carrying fixed interfaces at the top of the chassis.
Cisco 3725 routers	2	Single-wide	Slot 1–slot 2	Slot 2 accommodates double-wide network modules. Tip To install double-wide network modules, remove the slot divider. (See the “Removing Slot Dividers” section on page -13.)

Table 1 Service Module and Network Module Slots Available on Cisco Access Routers (continued)

Cisco Router	Number of Slots	Slot Type	Slot Numbering	Installation Notes and Limitations
Cisco 3745 routers	4	Single-wide	Slot 1–slot 4	Does not support extension modules.
	2	Double-wide	Slot 2, slot 4	Removing the slot divider changes slot numbering as follows: <ul style="list-style-type: none"> Slot 1 and slot 2 become slot 2 Slot 3 and slot 4 become slot 4 Tip To install double-wide network modules, remove the slot divider. (See the “Removing Slot Dividers” section on page -13.)
Cisco 3825 routers	3	Single-wide Extended single-wide Extension voice	Slot 1–slot 3	To install double-wide network modules, remove the slot divider. (See the “Removing Slot Dividers” section on page -13.) Only one extension module can be installed per chassis.
	1	Double-wide Extended double-wide	Slot 2	To install double-wide network modules, remove the slot divider. (See the “Removing Slot Dividers” section on page -13.) Only one NM-36ESW network module can be installed per chassis.
Cisco 3845 routers	4	Single-wide Extended single-wide Extension voice	Slot 1–slot 4	Only two extension modules can be installed per chassis.
	2	Double-wide Extended double-wide	Slot 1, slot 3	Removing the slot divider changes slot numbering as follows: <ul style="list-style-type: none"> Slot 1 and slot 2 becomes slot 1 Slot 3 and slot 4 becomes slot 3 Tip To install double-wide or extended double-wide network modules, remove the slot divider. (See the “Removing Slot Dividers” section on page -13.). Only two NM-36ESW network modules can be installed per chassis.
Cisco MWR 1941-DC routers	1	Single-wide	Slot 1	Cisco MWR 1941-DC routers support single-wide network modules only.

Cisco IOS Software Releases and Cisco Network Modules and Cisco Service Modules

Cisco network modules are often supported on multiple Cisco IOS releases. Cisco IOS release information is documented in the product data sheet and in Feature Navigator II, which is located on the Cisco website at <http://tools.cisco.com/ITDIT/CFN/jsp/index.jsp>

To determine which Cisco IOS releases support your particular router and combination of cards and modules, go to the Software Advisor at <http://www.cisco.com/cgi-bin/Support/CompNav/Index.pl>.

You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

Cisco Interface Cards Supported on Cisco Network Modules

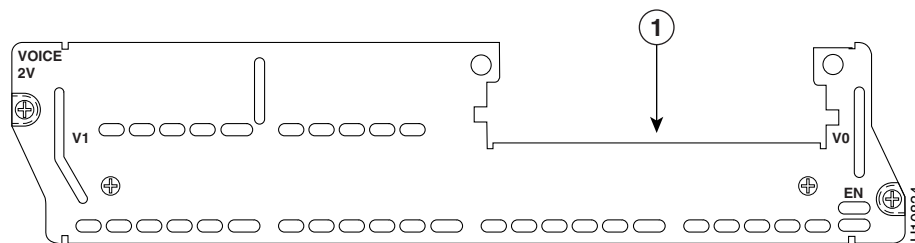
Some Cisco network modules have interface card slots to allow installation of Cisco interface cards. These network modules have either one or two interface card slots, supporting either voice or data interface cards. See [Figure 8](#) and [Figure 9](#) for sample 1- and 2-slot network modules.



Note

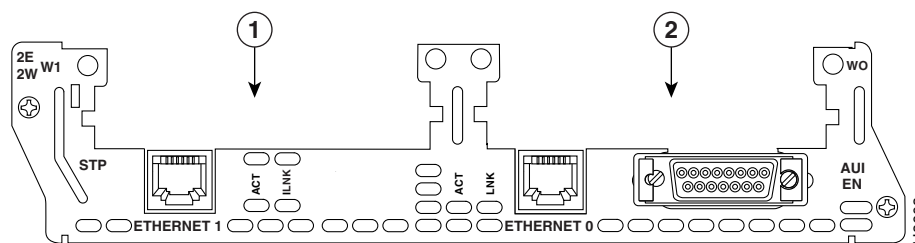
Some combination voice/data interface cards are supported on 1- or 2-slot network modules. However, interface card functionality is limited to either voice or data applications. See [Table 2](#) for more information.

Figure 8 Sample 1-Slot Network Module



- | | |
|----------|-----------------------|
| 1 | Interface card slot 0 |
|----------|-----------------------|

Figure 9 Sample 2-Slot Network Module



- | | | | |
|----------|-----------------------|----------|-----------------------|
| 1 | Interface card slot 1 | 2 | Interface card slot 0 |
|----------|-----------------------|----------|-----------------------|

For information on installing interface cards onto network modules, see the “Installing Cisco Interface Cards in 1- or 2-Slot Network Modules” section on page -28.

**Note**

High-density WAN interface cards (HWICs) are not supported on 1- or 2-slot network modules.

Table 2 Interface Cards Supported on 1- or 2-Slot Network Modules

Interface Card	Supported on					
	NM-2W NM-1FE2W NM-1FE2W-V2 NM-2FE2W NM-2FE2W-V2 NM-1FE1R2W NM-1FE1R2W-V2	NM-1V NM-2V	NM-HD-1V NM-HD-2V	NM-HD-2VE	NM-HDV NM-HDV2	NM-1A-OC3MM-1V NM-1A-OC3SMI-1V NM-1A-OC3SML-1V
WIC-1T	Yes	No	No	No	No	No
WIC-2T	Yes	No	No	No	No	No
WIC-1B-S/T	Yes	No	No	No	No	No
WIC-1B-S/T-V3	Yes	No	No	No	No	No
WIC-1B-U	Yes	No	No	No	No	No
WIC-1B-U-V2	Yes	No	No	No	No	No
WIC-2A/S	Yes	No	No	No	No	No
WIC-1DSU-56K	Yes	No	No	No	No	No
WIC-1DSU-T1	Yes	No	No	No	No	No
WIC-1ADSL	Yes	No	No	No	No	No
WIC-1ADSL-I-DG	Yes	No	No	No	No	No
WIC-1SHDSL	Yes	No	No	No	No	No
WIC-1AM	Yes	No	No	No	No	No
WIC-2AM	Yes	No	No	No	No	No
WIC-1AM-V2	Yes	No	No	No	No	No
WIC-2AM-V2	Yes	No	No	No	No	No
WIC-1AM-V2	Yes	No	No	No	No	No
WIC-2AM-V2	Yes	No	No	No	No	No
VWIC-1MFT-G703	Data only	No	No	No	No	No
VWIC2-1MFT-G703	Data only	No	No	No	NM-HDV2 only	No
VWIC-2MFT-G.703	No	No	No	Yes	No	No
VWIC2-2MFT-G703	Data only	No	No	No	Yes	No
VWIC-1MFT-T1	Yes	No	No	Voice only	Yes	Yes
VWIC-1MFT-E1	No	No	No	Voice only	Yes	Yes
VWIC2-1MFT-T1/E1	Data only	No	No	Yes	Yes	No
VWIC-2MFT-T1	Data only	No	No	Voice only	Yes	Yes

Table 2 Interface Cards Supported on 1- or 2-Slot Network Modules (continued)

Interface Card	Supported on					
	NM-2W NM-1FE2W NM-1FE2W-V2 NM-2FE2W NM-2FE2W-V2 NM-1FE1R2W NM-1FE1R2W-V2	NM-1V NM-2V	NM-HD-1V NM-HD-2V	NM-HD-2VE	NM-HDV NM-HDV2	NM-1A-0C3MM-1V NM-1A-0C3SMI-1V NM-1A-0C3SML-1V
VWIC-2MFT-E1	Data only	No	No	Voice only	Yes	Yes
VWIC2-2MFT-T1/E1	Data only	No	No	Yes	Yes	No
VWIC-2MFT-T1-DI	Data only	No	No	Voice only	Yes	Yes
VWIC-2MFT-E1-DI	Data only	No	No	Voice only	Yes	Yes
VIC-2FXS	No	Yes	No	No	No	No
VIC2-2FXS	No	No	Yes	Yes	No	No
VIC-4FXS/DID	No	No	Yes ¹	Yes ¹	No	No
VIC-2FXO	No	Yes	No	No	No	No
VIC-2FXO-M1	No	Yes	No	No	No	No
VIC-2FXO-EU	No	Yes	No	No	No	No
VIC-2FXO-M2	No	Yes	No	No	No	No
VIC-2FXO-M3	No	Yes	No	No	No	No
VIC2-2FXO	No	No	Yes	Yes	No	No
VIC2-4FXO	No	No	Yes	Yes	No	No
VIC-2E/M	No	Yes	No	No	No	No
VIC2-2E/M	No	No	Yes	Yes	No	No
VIC-2BRI-S/T-TE	No	Yes	No	No	No	No
VIC-2BRI-NT-TE	No	Yes	No	No	No	No
VIC2-2BRI-NT/TE	No	No	Yes	Yes	No	No
VIC-2CAMA	No	Yes	No	No	No	No
VIC-2DID	No	Yes	Yes	Yes	No	No

1. Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3600 series, Cisco 3700 series, and Cisco 3800 series routers support direct inward dial (DID) on the 4-port FXS/DID cards in Cisco IOS Release 12.3(14)T and later.

To find installation instructions for Cisco interface cards, see [Cisco Interface Cards Install and Upgrade Guides](#).

To find installation instructions for Cisco network modules, access the [Cisco Network Modules Install and Upgrade Guides](#).

Using Network Modules in Service Module Slots

The network module adapter is used to insert supported Cisco network modules in the service module slots in Cisco 2900 series and 3900 series routers. See [Cisco Access Routers and Cisco Service Modules, page 4](#).

Cisco 2900 series routers must be powered down before installing a network module and network module adapter. Cisco 3900 series routers may have service and network modules installed and removed with power applied using online insertion and removal (OIR). See the *Cisco 2900 Series and 3900 Series Hardware Installation* guide:

<http://www.cisco.com/en/US/docs/routers/access/2900/hardware/installation/guide/hig.html>

Cabling for Cisco Network Modules

The cables required to connect the network module to the network differ according to interface and connector type. See [Table 3](#) for more information.

**Note**

Cabling for 1- or 2-slot network modules is determined by the installed interface cards. See the [Cisco Interface Cards Install and Upgrade Guides](#) for information on specific interface cards.

Table 3 Cabling for Cisco Network Modules

Connection Type	Connector Type, Cable Color	Cable	Use with
Alarm Interface Connections			
To alarm interface patch panels or main distribution frame	50-pin D	Micro DB-50 SCSI transition	NM-AIC-64
Analog Dialup			
300 bps to 33.6 kbps analog dialup	RJ-11	RJ-11 straight-through	NM-8AM NM-8AM-V2 NM-16AM NM-16AM-V2
ATM			
ATM to ADSL	RJ-45, light green	RJ-45 UTP category 3, 4, 5 or higher	NM-1ATM-25
		RJ-45 STP category 1, 1A, 9, or 9A	
T3 ATM	BNC	BNC coaxial T3	NM-1A-T3 NM-1A-T3/E3
E3 ATM	BNC	BNC coaxial E3	NM-1A-E3 NM-1A-T3/E3
ATM, optical	Duplex or simplex SC	62.5-micron core with an optical loss of 0 to 9 dB Note Maximum path length of 2 km (1.24 miles), all cables, end to end	NM-1A-OC3-POM NM-1A-OC3MM NM-1A-OC3SMI NM-1A-OC3SML NM-1A-OC3MM-EP NM-1A-OC3SMI-EP NM-1A-OC3SML-EP NM-1A-OC3MM-1V NM-1A-OC3SMI-1V NM-1A-OC3SML-1V
		50-micron core with optical loss of 7 dB Note Maximum path length of 2 km (1.24 miles), all cables, end to end	
		9-micron core Note Maximum path length of 45 km (27.9 miles) for single-mode long (SML) reach and 15 km (9.3 miles) for single-mode intermediate (SMI) reach.	
Circuit Emulation over IP (CEoIP)			
T1/E1 CEoIP	RJ-48C	RJ-48 T1/E1 straight-through	NM-CEM-4TE1 Note To connect to a 75-ohm unbalanced E1 network, use CAB-ADP-75-120.
Serial CEoIP	60-pin D, blue	Cisco Smart serial 12-in-1—see Table 0-4 for part numbers	NM-CEM-4SER
		Cisco Smart serial extended 12-in-1—see Table 0-5 for part numbers	

Table 3 Cabling for Cisco Network Modules (continued)

Connection Type	Connector Type, Cable Color	Cable	Use with
Ethernet			
Ethernet	RJ-45, yellow	10BASE-T Category 5 or above UTP	NM-1E
	DB-15	Attachment unit interface (AUI) cable	NM-4E NM-1E2W NM-2E2W NM-1E1R2W
Fast Ethernet, copper	RJ-45	100BASE-T Category 5 or above UTP	NM-1FE-TX NM-1FE2W NM-1FE2W-V2 NM-2FE2W NM-2FE2W-V2 NM-1FE1R2W NM-1FE1R2W-V2 NM-1FE1CT1 NM-1FE2CT1 NM-1FE1CT1-CSU NM-1FE2CT1-CSU NM-1FE1CE1B NM-1FE1CE1U NM-1FE2CE1B NM-1FE2CE1U NM-16ESW NM-16ESW-1GIG NM-16ESW-PWR NM-16ESW-PWR-1GIG NM-CE-BP-20G-K9 NM-CE-BP-40G-K9 NM-CE-BP-80G-K9 NM-CE-BP-SCSI-K9 NM-CIDS-K9 NM-NAM NMD-36ESW NMD-36ESW-2GIG NMD-36ESW-PWR NMD-36ESW-PWR-2G NME-16ES-1G NME-16ES-1G-P NME-X-23ES-1G NME-X-23ES-1G-P NME-XD-24ES-1S-P NME-XD-48ES-2S-P
Fast Ethernet, optical	SC	100BASE-T MMF	NM-1FE-FX NM-1FE-FX-V2
	SC	100BASE-T SMF	NM-1FE-SMF

Table 3 Cabling for Cisco Network Modules (continued)

Connection Type	Connector Type, Cable Color	Cable	Use with
Gigabit Ethernet, copper	RJ-45	1000BASE-T Category 5 or above UTP	NM-16ESW NM-16ESW-1GIG NM-16ESW-PWR NM-16ESW-PWR-1GIG NM-1GE (through GBIC) NME-WAE-302-K9 NME-WAE-502-K9 NME-WAE-522-K9 NMD-36ESW NMD-36ESW-2GIG NMD-36ESW-PWR NMD-36ESW-PWR-2G NME-16ES-1G NME-16ES-1G-P NME-AIR-WLC8-K9 NME-AIR-WLC12-K9 NME-AON-K9 NME-NAC-K9 NME-NAM-80S NME-X-23ES-1G NME-X-23ES-1G-P NME-XD-24ES-1S-P NME-XD-48ES-2S-P
Gigabit Ethernet, optical	SC, yellow	10-micron SMF	NM-1GE (through GBIC) NME-16ES-1G NME-16ES-1G-P NME-X-23ES-1G NME-X-23ES-1G-P NME-XD-24ES-1S-P NME-XD-48ES-2S-P
	SC, orange	62.5-micron MMF	
ISDN Connections			
Channelized T1 PRI, without CSU	DB-15	DB-15 straight-through T1	NM-1FE1CT1 NM-1FE2CT1 NM-1CT1 NM-2CT1
Channelized T1 PRI, with CSU	RJ-48C, tan	RJ-48C to RJ-48C straight-through T1	NM-1FE1CT1-CSU NM-1FE2CT1-CSU NM-1CT1-CSU NM-2CT1-CSU
Channelized T1 PRI, with or without CSU	RJ-48S, tan	RJ-48S to RJ-48S straight-through T1	NM-1CE1T1-PRI NM-2CE1T1-PRI

Table 3 Cabling for Cisco Network Modules (continued)

Connection Type	Connector Type, Cable Color	Cable	Use with
Channelized E1 PRI, balanced	DB-15, tan	DB-15 to DB-15 120-ohm balanced E1	NM-1FE1CE1B
	DB-15 to twin-ax, tan	DB-15 to twin-ax 75-ohm balanced E1	NM-1FE2CE1B
	DB-15 to RJ-45, tan	DB-15 to RJ-45 120-ohm balanced E1	NM-1CE1B NM-2CE1B
	RJ-48S, tan	RJ-48S to RJ-48S straight-through 120-ohm balanced E1	NM-1CE1T1-PRI NM-2CE1T1-PRI
	RJ-48S to DB-15, tan	RJ-48S to DB-15 120-ohm balanced E1	
	RJ-48S to twin-ax	RJ-48S to twin-ax 120-ohm balanced E1	
Channelized E1 PRI, unbalanced	DB-15 to BNC, tan	DB-15 to BNC 75-ohm unbalanced E1	NM-1FE1CE1U NM-1FE2CE1U NM-1CE1U NM-2CE-1U
	RJ-48S to BNC, tan	RJ-48S to BNC 75-ohm unbalanced E1	NM-1CE1T1-PRI NM-2CE1T1-PRI
BRI S/T (external NT1)	RJ-45, orange	RJ-45 straight-through	NM-4B-S/T NM-8B-S/T
BRI U (built-in NT1)	RJ-45, red	RJ-45 straight-through	NM-4B-U NM-8B-U
Serial Connections			
Synchronous serial	60-pin D, blue	Serial transition cable (EIA/TIA-232, EIA/TIA-449, EIA/TIA-530 DTE, V.35, X.21, NRZ/NRZI)	NM-4T NM-4A/S NM-8A/S
Asynchronous serial	68-pin D to 25-pin D	DB-68 to DB-25 EIA/TIA-232 octal	NM-16A
	68-pin D to RJ-45	DB-68 to RJ-45 EIA/TIA-232 octal	NM-32A
Serial	60-pin D, blue	Cisco Smart serial 12-in-1—see Table 0-4 for part numbers	NM-16A/S
Serial surge protection		Cisco Product ID CAB-SS-SURGE	
Fractional DS3 or below, to DSU	50-pin D, blue	DB-50 HSSI DTE	NM-1HSSI
Fractional DS3 or below, to another router		DB-50 HSSI null modem	

Table 3 Cabling for Cisco Network Modules (continued)

Connection Type	Connector Type, Cable Color	Cable	Use with
Service Module Connections			
To external storage array	68-pin D	68-pin low-voltage differential (LVD) SCSI Note 36-, 91- or 108-inch (274 cm) cables can be used, depending on the distance between the network module and the external storage array.	NM-CE-BP-SCSI
Token Ring Connections			
Token Ring, shielded	DB-9	Token Ring lobe cable, shielded STP	NM-1E1R2W
Token Ring, unshielded	RJ-45	Token Ring lobe cable, unshielded UTP	NM-1FE1R2W NM-1FE1R2W-V2
WAN Connections			
T1/E1 WAN	RJ-48C/CA81A	RJ-48 T1/E1 straight-through	NM-4T1-IMA NM-8T1-IMA NM-4E1-IMA NM-8E1-IMA NM-HDV2-1T1/E1 NM-HDV2-2T1/E1
T3/DS3/E3 WAN	BNC connector	BNC T3/E3 coaxial	NM-1T3/E3 NM-1A-T3 NM-1A-E3 NM-1A-T3/E3
Wireless and Satellite Connections			
To antenna	BNC	BNC indoor IF coaxial	NM-WMDA
To satellite dish	F-connector	75-ohm F-connector shielded RG-6	NM-1VSAT-GILAT
Voice Connections			
Analog voice FXS/FXO	RJ-21	253PP10GYADI male-to-male (Graybar)	NM-HDA-4FXS
		253PC10GYADI male-to-female (Graybar)	
		AT125-SM patch panel (Graybar)	
		RJ-21 cable	EVM-HDA-8FXS/DID

**Note**

A single fiber link should not mix 62.5- and 50-micron cable.

Table 0-4 Cisco 12-in-1 Smart Serial Interface Cable Part Numbers

Interface	DCE/DTE	Cisco Cable Part Number
EIA/TIA-232	Female DCE	CAB-SS-232FC
	Male DTE	CAB-SS-232MT
EIA/TIA-449	Female DCE	CAB-SS-449FC
	Male DTE	CAB-SS-449MT

Table 0-4 Cisco 12-in-1 Smart Serial Interface Cable Part Numbers (continued)

Interface	DCE/DTE	Cisco Cable Part Number
EIA-530	Male DTE	CAB-SS-530MT
EIA-530A	Male DTE	CAB-SS-530AMT
V.35	Female DCE	CAB-SS-V35FC
	Female DTE	CAB-SS-V35FT
	Male DCE	CAB-SS-V35MC
	Male DTE	CAB-SS-V35MT
X.21	Female DCE	CAB-SS-X21FC
	Male DTE	CAB-SS-X21MT

Table 0-5 Cisco Extended 12-in-1 Smart Serial Interface Cable Part Numbers

Interface	DCE/DTE	Cisco Cable Part Number
EIA/TIA-232	Female DCE	CAB-SS-232FC-EXT
	Male DTE	CAB-SS-232MT-EXT
EIA/TIA-449	Female DCE	CAB-SS-449FC-EXT
	Male DTE	CAB-SS-449MT-EXT
EIA-530	Female DCE	CAB-SS-530FC-EXT
	Male DTE	CAB-SS-530MT-EXT
EIA-530A	Female DCE	CAB-SS-530AFC-EXT
	Male DTE	CAB-SS-530AMT-EXT
V.35	Female DCE	CAB-SS-V35FC-EXT
	Female DTE	CAB-SS-V35FT-EXT
	Male DCE	CAB-SS-V35MC-EXT
	Male DTE	CAB-SS-V35MT-EXT

Platform Support for 1900 Series, 2900 Series, and 3900 Series Modules

For a complete list of supported and unsupported modules on Cisco 1900 series, Cisco 2900 series, and Cisco 3900 series routers see the document [Module Support on Cisco Integrated Services Routers Generation 2](#).

Platform Support for Cisco Network Modules

Table 6 lists the platforms supported by each interface card. The interface cards are grouped by technology area:

- [Alarm Monitoring and Control Network Modules](#)
- [Analog and ISDN Basic Rate Voice Network Modules](#)
- [Extension Modules](#)
- [Analog Dialup and Remote Access Network Modules](#)

- [Application and Service Modules](#)
- [ATM Network Modules](#)
- [Channelized T1/E1 and ISDN Network Modules](#)
- [Circuit Emulation over IP \(CEoIP\) Network Modules](#)
- [Compression Network Modules](#)
- [Digital Dialup and Remote Access Network Modules](#)
- [Digital Voice Network Modules](#)
- [Ethernet Switching Network Modules](#)
- [LAN Network Modules](#)
- [LAN and Interface Card Slot Combo Network Modules](#)
- [LAN and T1/E1 Combination Network Modules](#)
- [Serial Connectivity Network Modules](#)
- [Wireless and Satellite Network Modules](#)

Table 6 Platform Support for Cisco Network Modules

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
Alarm Monitoring and Control Network Modules			
Alarm monitoring and control network module	NM-AIC-64	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	Connecting Cisco Alarm Interface Controller Network Modules to the Network
Analog and ISDN Basic Rate Voice Network Modules			
1-slot 2-channel voice network module	NM-1V	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Voice Network Modules
2-slot 4-channel voice network module	NM-2V	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Voice Network Modules
1-slot IP communications voice/fax network module	NM-HD-1V	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3640 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Voice Network Modules

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
2-slot IP communications voice/fax network module	NM-HD-2V	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3640 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Voice Network Modules
2-slot IP communications enhanced voice/fax network module	NM-HD-2VE	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3640 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Voice Network Modules
4-port FXS high-density analog (HDA) voice/fax network module	NM-HDA-4FXS	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3640 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco High-Density Analog Telephony Network Modules to the Network
Extension Modules			
High-density extension module	EVM-HD-8FXS/DID	Cisco 2821 Cisco 2851 Cisco 3800 series Cisco 2911 Cisco 2921 Cisco 2951 Cisco 3925 Cisco 3925E Cisco 3945 Cisco 3945E	Connecting Cisco High-Density Extension Modules to the Network
Analog Dialup and Remote Access Network Modules			
8-port analog modem network module with v.92	NM-8AM	Cisco 2600 series Cisco 3600 series Cisco 3725 Cisco 3745	Connecting Cisco Analog Modem Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
16-port analog modem network module with v.92	NM-16AM	Cisco 2600 series Cisco 3600 series Cisco 3725 Cisco 3745	Connecting Cisco Analog Modem Network Modules to the Network
8-port analog modem network module with v.92, version 2	NM-8AM-V2	Cisco 2600XM series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 2691 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Analog Modem Network Modules to the Network
16-port analog modem network module with v.92, version 2	NM-16AM-V2	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Analog Modem Network Modules to the Network
Application and Service Modules			
Cisco AON network module with 512 MB memory	NM-AON-K9	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco Application-Oriented Networking (AON) Network Modules to the Network
Cisco AON network module with 1 GB memory	NME-AON-K9	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco Application-Oriented Networking (AON) Network Modules to the Network
Cisco Application Performance Assurance enhanced network module	NME-APA-E2	Cisco 2811 Cisco 2821 Cisco 2851	Connecting Cisco Application Performance Assurance Enhanced Network Modules to the Network
Cisco Application Performance Assurance enhanced network module	NME-APA-E3	Cisco 3800 series	Connecting Cisco Application Performance Assurance Enhanced Network Modules to the Network
Cisco Content Engine network module for caching and content delivery, with 20-GB hard drive expansion module	NM-CE-BP-20G-K9	Cisco 2600 series Cisco 3640 Cisco 3660 Cisco 3700 series	Connecting Cisco Content Engine (CE) Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
Cisco Content Engine network module for caching and content delivery, with 40-GB hard drive expansion module	NM-CE-BP-40G-K9	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3640 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Content Engine (CE) Network Modules to the Network
Cisco Content Engine network module for caching and content delivery, with 80-GB hard drive expansion module	NM-CE-BP-80G-K9	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3640 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Content Engine (CE) Network Modules to the Network
Cisco Content Engine network module for caching and content delivery, with SCSI connector expansion module Note Requires an external SCSI disk array such as the Cisco SA-6	NM-CE-BP-SCSI-K9	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3640 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Content Engine (CE) Network Modules to the Network
Cisco Intrusion Detection System (IDS) network module	NM-CIDS-K9	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Intrusion Detection System Network Modules
Cisco Unity Express voice-mail network module	NM-CUE	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco Unity Express Network Modules
Cisco Unity Express voice-mail enhanced network module	NME-CUE	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco Unity Express Enhanced Network Modules

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
Cisco Network Admission Control network module	NME-NAC-K9	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting Cisco Network Admission Control Network Modules
Cisco Network Analysis Module network module	NM-NAM	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco NAM Network Modules to the Network
Cisco Network Analysis Module enhanced network module	NME-NAM-80S	Cisco 3700 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting Cisco NAM Network Modules to the Network
Cisco Unified Messaging Gateway enhanced network module	NME-UMG	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting Cisco Unified Messaging Gateway Enhanced Network Modules
Cisco Unified Messaging Gateway enhanced network module	NME-UMG-EC	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting Cisco Unified Messaging Gateway Enhanced Network Modules
Cisco WAAS enhanced network module with 80 GB hard disk and 512 MB memory	NME-WAE-302-K9	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting WAAS Enhanced Network Modules
Cisco WAAS enhanced network module with 120 GB hard disk and 1 GB memory	NME-WAE-502-K9	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting WAAS Enhanced Network Modules
Cisco WAAS enhanced network module with 160 GB hard disk and 2 GB memory	NME-WAE-522-K9	Cisco 3800 series	Connecting WAAS Enhanced Network Modules
ATM Network Modules			
1-port ATM-25	NM-1ATM-25	Cisco 2600 series Cisco 3600 series	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
1-port DS3 ATM network module	NM-1A-T3	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port E3 ATM network module	NM-1A-E3	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM T3/E3 network module	NM-1A-T3/E3	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 pluggable optical module (POM) network module	NM-1A-OC3-POM	Cisco 3825 Cisco 3845	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 multimode network module	NM-1A-OC3MM	Cisco 2691 Cisco 3600 series Cisco 3725	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 single-mode, intermediate-reach network module	NM-1A-OC3SMI	Cisco 2691 Cisco 3600 series Cisco 3725	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 single-mode, long-reach network module	NM-1A-OC3SML	Cisco 2691 Cisco 3600 series Cisco 3725	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 multimode network module with enhanced performance	NM-1A-OC3MM-EP	Cisco 3745	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 single-mode, intermediate-reach network module with enhanced performance	NM-1A-OC3SMI-EP	Cisco 3745	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
1-port ATM OC-3c/STM1 single-mode, long-reach network module with enhanced performance	NM-1A-OC3SML-EP	Cisco 3745	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 multimode network module with 1 voice interface card slot	NM-1A-OC3MM-1V	Cisco 3600 series	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 single-mode, intermediate-reach network module with 1 voice interface card slot	NM-1A-OC3SMI-1V	Cisco 3600 series	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
1-port ATM OC-3c/STM1 single-mode, long-reach network module with 1 voice interface card slot	NM-1A-OC3SML-1V	Cisco 3600 series	Connecting Cisco Asynchronous Transfer Mode (ATM) Network Modules to the Network
4-port T1 ATM network module with Inverse Multiplexing over ATM (IMA)	NM-4T1-IMA	Cisco 2600 series Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco T1 and E1 Inverse Multiplexing for ATM (IMA) Network Modules to the Network
4-port E1 ATM network module with IMA	NM-4E1-IMA	Cisco 2600 series Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco T1 and E1 Inverse Multiplexing for ATM (IMA) Network Modules to the Network
8-port T1 ATM network module with IMA	NM-8T1-IMA	Cisco 2600 series Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco T1 and E1 Inverse Multiplexing for ATM (IMA) Network Modules to the Network
8-port E1 ATM network module with IMA	NM-8E1-IMA	Cisco 2600 series Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco T1 and E1 Inverse Multiplexing for ATM (IMA) Network Modules to the Network
Channelized T1/E1 and ISDN Network Modules			
1-port channelized T1/ISDN-PRI network module	NM-1CT1	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network
2-port channelized T1/ISDN-PRI network module	NM-2CT1	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network
1-port channelized T1/ISDN-PRI network module with CSU	NM-1CT1-CSU	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
2-port channelized T1/ISDN-PRI network module with CSU	NM-2CT1-CSU	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network
1-port channelized E1/ISDN-PRI network module, unbalanced	NM-1CE1U	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network
2-port channelized E1/ISDN-PRI network module, unbalanced	NM-2CE1U	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network
1-port channelized E1/ISDN-PRI network module, balanced	NM-1CE1B	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network
2-port channelized E1/ISDN-PRI network module, balanced	NM-2CE1B	Cisco 2600 series Cisco 3600 series Cisco 3700 series	Connecting Cisco ISDN PRI Network Modules to the Network
1-port channelized T1/E1/ISDN-PRI network module with G.703	NM-1CE1T1-PRI	Cisco 2600XM series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 2691 Cisco 3631 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco ISDN PRI Network Modules to the Network
2-port channelized T1/E1/ISDN-PRI network module with G.703	NM-2CE1T1-PRI	Cisco 2600XM series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 2691 Cisco 3631 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco ISDN PRI Network Modules to the Network
4-port ISDN BRI network module—S/T interface	NM-4B-S/T	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
4-port ISDN BRI network module with integrated Network Termination 1 (NT1)—U interface	NM-4B-U	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) Network Modules to the Network
8-port ISDN BRI network module—S/T interface	NM-8B-S/T	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) Network Modules to the Network
8-port ISDN BRI network module with integrated NT1—U interface	NM-8B-U	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) Network Modules to the Network
Circuit Emulation over IP (CEoIP) Network Modules			
4-port serial CEoIP network module	NM-CEM-4SER	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Circuit Emulation Over IP (CEoIP) Network Modules to the Network
4-port T1/E1 CEoIP network module	NM-CEM-4TE1	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Circuit Emulation Over IP (CEoIP) Network Modules to the Network
Compression Network Modules			
Compression network module	NM-COMPR	Cisco 3600 series	Connecting Cisco Compression Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
Digital Dialup and Remote Access Network Modules			
6-modem digital modem network module	NM-6DM	Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Compression Network Modules to the Network
12-modem digital modem network module	NM-12DM	Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Digital Modem Network Modules to the Network
18-modem digital modem network module	NM-18DM	Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Digital Modem Network Modules to the Network
24-modem digital modem network module	NM-24DM	Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Digital Modem Network Modules to the Network
30-modem digital modem network module	NM-30DM	Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Digital Modem Network Modules to the Network
Digital Voice Network Modules			
High-density digital voice/fax network module	NM-HDV	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Voice Network Modules
IP communications high-density digital voice/fax network module	NM-HDV2	Cisco 2600XM Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Voice Network Modules
1-port T1/E1 IP communications high-density digital voice/fax network module	NM-HDV2-1T1/E1	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Voice Network Modules
2-port T1/E1 IP communications high-density digital voice/fax network module	NM-HDV2-2T1/E1	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Voice Network Modules

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
Ethernet Switching Network Modules			
16-port EtherSwitch network module	NM-16ESW	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	Connecting Cisco Ethernet Switch Network Modules to the Network
16-port EtherSwitch network module with 1-port GE expansion module	NM-16ESW-1GIG	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	Connecting Cisco Ethernet Switch Network Modules to the Network
16-port EtherSwitch network module with inline power expansion module	NM-16ESW-PWR	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet Switch Network Modules to the Network
16-port EtherSwitch network module with both 1-port GE and inline power expansion modules	NM-16ESW-PWR-1GIG	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet Switch Network Modules to the Network
36-port EtherSwitch high-density service module (HDSM)	NMD-36-ESW	Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet Switch Network Modules to the Network
36-port EtherSwitch high-density service module (HDSM) with 2 1-port GE expansion modules	NMD-36-ESW-2GIG	Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet Switch Network Modules to the Network
36-port EtherSwitch high-density service module (HDSM) with inline power expansion module	NMD-36-ESW-PWR	Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet Switch Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
36-port EtherSwitch high-density service module (HDSM) with 2 1-port GE and 1 inline power expansion modules	NMD-36-ESW-PWR-2G	Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet Switch Network Modules to the Network
16 10/100 Ethernet ports, 1 10/100/1000 Ethernet port, no StackWise connector ports, single-wide, no Power over Ethernet (PoE) support	NME-16ES-1G	Cisco 2691 (without -48 V) Cisco 3700 series Cisco 2800 series Cisco 3800 series	Connecting Cisco EtherSwitch Service Modules
16 10/100 Ethernet ports, 1 10/100/1000 Ethernet port, no StackWise connector ports, single-wide, with PoE support	NME-16ES-1G-P	Cisco 2691 (without -48 V) Cisco 3700 series Cisco 2800 series Cisco 3800 series	Connecting Cisco EtherSwitch Service Modules
23 10/100 Ethernet ports, 1 10/100/1000 Ethernet port, no StackWise connector ports, extended single-wide, no PoE support	NME-X-23ES-1G	Cisco 2851 Cisco 3800 series	Connecting Cisco EtherSwitch Service Modules
23 10/100 Ethernet ports, 1 10/100/1000 Ethernet port, no StackWise connector ports, extended single-wide, with PoE support	NME-X-23ES-1G-P	Cisco 2851 Cisco 3800 series	Connecting Cisco EtherSwitch Service Modules
24 10/100 Ethernet ports, 1 small form-factor pluggable (SFP) port, 2 StackWise connector ports, extended double-wide, with PoE support	NME-XD-24ES-1S-P	Cisco 2821 Cisco 2851 Cisco 3800 series	Connecting Cisco EtherSwitch Service Modules
48 10/100 Ethernet ports, 2 SFP ports, no StackWise connector ports, extended double-wide, with PoE support	NME-XD-48ES-2S-P	Cisco 2851 Cisco 3800 series	Connecting Cisco EtherSwitch Service Modules
LAN Network Modules			
1-port Ethernet network module	NM-1E	Cisco 2600 series Cisco 3600 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
4-port Ethernet network module	NM-4E	Cisco 2600 series Cisco 3600 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
1-port Fast Ethernet network module (100BASE-TX interface)	NM-1FE-TX	Cisco 3600 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
1-port Fast Ethernet network module (100BASE-FX interface)	NM-1FE-FX	Cisco 2691 Cisco 3600 series Cisco 3700 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
1-port Fast Ethernet network module (100BASE-FX interface), version 2	NM-1FE-FX-V2	Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
1-port Fast Ethernet network module (100BASE-SMF)	NM-1FE-SMF	Cisco 3600 series Note Not supported on Cisco 3630 routers Cisco 3700 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
1-port Gigabit Ethernet network module	NM-1GE	Cisco 2691 Cisco 3660 Cisco 3700 series Cisco 3800 series	Connecting Cisco Gigabit Ethernet Network Modules to the Network
LAN and Interface Card Slot Combo Network Modules			
2-slot network module (no LAN ports)	NM-2W	Cisco 2600 series Cisco 3600 series Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	
2-slot network module with 1 Ethernet port	NM-1E2W	Cisco 3600 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
2-slot network module with 2 Ethernet ports	NM-2E2W	Cisco 3600 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
2-slot network module with 1 Ethernet port and 1 Token Ring port	NM-1E1R2W	Cisco 3600 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
2-slot network module with 1 Fast Ethernet port	NM-1FE2W	Cisco 2691 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
2-slot network module with 1 Fast Ethernet port, version 2	NM-1FE2W-V2	Cisco 2691 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
2-slot network module with 2 Fast Ethernet ports	NM-2FE2W	Cisco 2691 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
2-slot network module with 2 Fast Ethernet ports, version 2	NM-2FE2W-V2	Cisco 2691 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
2-slot network module with 1 Fast Ethernet port and 1 Token Ring port	NM-1FE1R2W	Cisco 2691 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Ethernet, Fast Ethernet, and Token Ring Network Modules to the Network
LAN and T1/E1 Combination Network Modules			
1-port Fast Ethernet with 1-port channelized T1/ISDN-PRI network module, without CSU	NM-1FE1CT1	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
1-port Fast Ethernet with 1-port channelized T1/ISDN-PRI network module, with CSU	NM-1FE1CT1-CSU	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
1-port Fast Ethernet with 2-port channelized T1/ISDN-PRI network module, without CSU	NM-1FE2CT1	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
1-port Fast Ethernet with 2-port channelized T1/ISDN-PRI network module, with CSU	NM-1FE2CT1-CSU	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
1-port Fast Ethernet with 1-port E1/ISDN PRI, balanced	NM-1FE1CE1B	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
1-port Fast Ethernet with 1-port E1/ISDN PRI, unbalanced	NM-1FE1CE1U	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
1-port Fast Ethernet with 2-port E1/ISDN PRI, balanced	NM-1FE1CE1B	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
1-port Fast Ethernet with 2-port E1/ISDN PRI, unbalanced	NM-1FE2CE1U	Cisco 3600 series	Connecting Cisco Fast Ethernet-PRI Network Modules to the Network
Serial Connectivity Network Modules			

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
1-port High-Speed Serial interface (HSSI) network module	NM-1HSSI	Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco High-Speed Serial Interface (HSSI) Network Modules to the Network
1-port clear-channel T3/E3 network module	NM-1T3/E3	Cisco 2650XM Cisco 2651XM Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3660 Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	Connecting Cisco T3/E3 Network Modules to the Network
4-port serial network module	NM-4T	Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Serial Network Modules to the Network
4-port asynchronous/synchronous serial network module	NM-4A/S	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	Connecting Cisco Serial Network Modules to the Network
8-port asynchronous/synchronous serial network module	NM-8A/S	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	Connecting Cisco Serial Network Modules to the Network
16-port asynchronous/synchronous serial network module	NM-16A/S	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco Serial Network Modules to the Network

Table 6 Platform Support for Cisco Network Modules (continued)

Product Description	Cisco Product ID	Supported on Cisco Routers	See Document
16-port asynchronous serial network module	NM-16A	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series Cisco MWR 1941-DC	Connecting Cisco Serial Network Modules to the Network
32-port asynchronous serial network module	NM-32A	Cisco 2600 series Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3600 series Cisco 3700 series Cisco 3800 series	Connecting Cisco Serial Network Modules to the Network
Wireless and Satellite Network Modules			
Cisco wireless multipoint subscriber unit network module	NM-WMDA	Cisco 2600 series Cisco 3600 series	Connecting Wireless Multipoint Network Modules
Cisco wireless LAN controller network module	NM-AIR-WLC6	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco Wireless LAN Controller Modules
Cisco wireless LAN controller enhanced network module	NME-AIR-WLC8-K9	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco WLAN Controller Enhanced Network Modules to the Network
Cisco wireless LAN controller enhanced network module	NME-AIR-WLC12-K9	Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco WLAN Controller Enhanced Network Modules to the Network
Cisco IP VSAT satellite WAN network module	NM-1VSAT-GILAT	Cisco 2600XM series Cisco 2691 Cisco 2811 Cisco 2821 Cisco 2851 Cisco 3700 series Cisco 3800 series	Connecting Cisco IP VSAT Satellite WAN Network Modules to the Network

Related Documents

Cisco product documentation is available online at www.cisco.com (also known as Cisco.com) and is accessible through multiple navigation paths.

To access the documents and tools described in this section, you must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

To print a document in its original page format, access the online document, and click the PDF icon.



Tip

Some authors provide a full-length “book” PDF, usually located above or below the links to the book chapter files on the main book index page. Use this book-length PDF to generate printed copies of the entire book.

Hardware Documentation

Cisco hardware documentation for Cisco access routers provides the following three categories of information:

- Hardware installation—Basic to advanced hardware installation procedures
- Hardware reference information and specifications—Dimensions, operating environment, cable pinouts
- Regulatory compliance and safety information—Safety warnings translated into multiple languages and statements of compliance with regulatory requirements from various countries around the world

Installation Documents

To find chassis installation instructions for any Cisco router, access the documents located in the ***Install and Upgrade*** section of Cisco.com.

To find installation instructions for Cisco network modules, access the ***Cisco Network Modules Install and Upgrade Guides***.

To find installation instructions for Cisco interface cards, see ***Cisco Interface Cards Install and Upgrade Guides***.

Reference Documents

To find cabling specifications for Cisco modular access routers, access the ***Cisco Modular Access Router Cable Specifications*** section of Cisco.com.

Regulatory Compliance and Safety Information Documents

To find regulatory compliance and safety information for a Cisco router, access the documents located at **Support > Option2: Install and Upgrade > Routers > Router series you are using > Install and Upgrade Guides**.

To find regulatory compliance and safety information for Cisco network modules see the document ***Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information*** on Cisco.com.

Cisco IOS Software Documentation

Cisco IOS software documentation provides the following categories of information:

- Software configuration—Basic to advanced software configuration procedures, sample configurations
- Software references—Command references, system message guides
- Software release information—Supported products, caveats
- Software release tools—Cisco Feature Navigator II, Cisco IOS Upgrade Planner, software downloads, security notices and advisories

Cisco IOS Software Configuration Documents

To find initial configuration instructions specific to the Cisco router you are using, access the documents located at **Support > Option1: Routers > Router series you are using > Configure > Configuration Guides**.

To find configuration examples specific to the Cisco router you are using, access the documents located at **Support > Option1: Routers > Router series you are using > Configure > Configuration Examples and TechNotes**.

To find advanced configuration instructions for a specific feature, access the documents located at **Support > Option1: Cisco IOS Software and NX-OS Software > Cisco IOS release you are using > Configure > Feature Guides**

Cisco IOS Software Reference Documents

To find command reference information for the Cisco IOS software release you are using, access the documents located at **Support > Option1: Cisco IOS Software and NX-OS Software > Cisco IOS release you are using > Reference Guides > Command References**.



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You can also use the online [Command Lookup](#) tool, located at **Support > Tools & Resources > Command Lookup Tool**.

To find system message information for the Cisco IOS software release you are using, access the documents located at **Support > Option1: Cisco IOS Software and NX-OS Software > Cisco IOS release you are using > Troubleshoot and Alerts > Error and System Messages**.

Cisco IOS Software Release Documents and Tools

To find Cisco IOS software release information for the Cisco IOS software release you are using, access the documents located at **Support > Option1: Cisco IOS Software and NX-OS Software > Cisco IOS release you are using > General Information > Release Notes**.

To view Cisco IOS software features by release, or to compare two different Cisco IOS releases, access [Cisco Feature Navigator II](#), located at **Products and Solutions > Cisco IOS Software > All Cisco IOS Software > Cisco Feature Navigator II**.

To download Cisco IOS software, or to locate license agreements and warranty information for a Cisco IOS software release, access the [Software Center](#), located at **Support > Tools and Resources > Downloads**.

To plan for a Cisco IOS upgrade, access the [Cisco IOS Upgrade Planner](#), located at **Support > Tools and Resources > Cisco IOS Upgrade Planner**.

To view Cisco IOS security advisories that might apply to your product, access the *Cisco Product Security Advisories and Notices* website located at <http://www.cisco.com/warp/public/707/advisory.html>.

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You can also sign up to receive e-mail alerts using the [Product Alert Tool](#), located at **Support > Tools and Resources > Product Alert Tool**.

Where to Go Next

For network module installation information, go to [Chapter , “Installing Cisco Network Modules and Service Modules in Cisco Access Routers.”](#)

For regulatory compliance and safety information, see the [Cisco Network Modules and Interface Cards Regulatory Compliance and Safety Information](#) document.

For hardware information about specific network modules, use [Table 6 Platform Support for Cisco Network Modules](#) in this document to locate the appropriate chapter.

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