CISCO SYSTEMS

Cisco 2600 Series Modular Access Router Family
including the 261x, 262x, 265x, and 2691

Includes the Cisco 2612, 2600XM, and 2691 Models

The Cisco 2600 series is an award-winning family of modular multiservice access routers, providing flexible LAN and WAN configurations, multiple security options, voice/data integration, and a range of high performance processors. The wide range of features, interfaces, and flexibility of adding over 50 modules makes the Cisco 2600 family the ideal branch-office router for today's and tomorrow's customer requirements.

The Cisco 2600 Series family of Modular Routers include the Cisco 2612, Cisco 2600XM models and Cisco 2691. These models deliver extended performance, high density, enhanced security performance and concurrent application support to meet the growing demands of branch offices. In addition, a number of 2600 Series product bundles have been introduced including the 2651XM-V and 2651XM-V-SRST voice gateway router bundles, 2600XM and 2691VPN bundles, and 2600XM DSL

bundles. These bundles offer an additional cost savings and provide easy ordering to meet branch office requirements.

Cisco 2600 Series Modular Access Router Family: Introduction

As companies grow, the diversity of protocols, increased performance, LAN media, WAN services, and networking equipment required to support mission-critical network services expand dramatically. With extensive support for multiprotocol data routing, voice/data integration, DSL access, ATM, dial access services, and integrated switching, the Cisco 2600 Series provides a flexible, scalable integrated solution that simplifies the process of deploying and managing the branch office network solutions.

The Cisco 2600 Series offers a comprehensive feature set ideal for solutions requiring the following support:

• Multiservice voice/data integration

• VPN access with Firewall and Encryption options

• Analog dial access services

• Routing with bandwidth management

• Inter-VLAN routing

• Delivery of high-speed business class DSL access

• Cost effective ATM access

Figure 1
Cisco 2600 Series Modular Access Routers
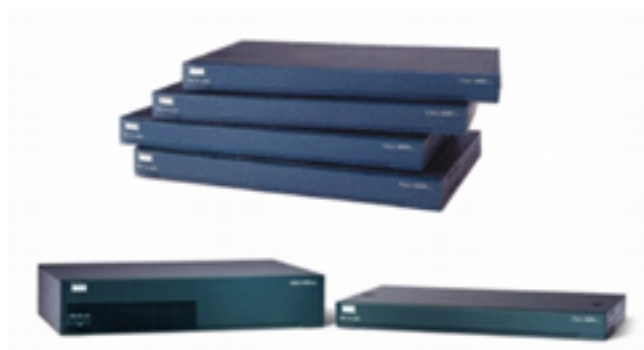
- Integration of flexible routing and low density switching
- Integration of Content Networking
- Integration of Intrusion Detection Systems

The foundations of these solutions are the Cisco IOS elements of security, availability, Quality of Service (QoS), manageability, and integration. Combined, these features support the delivery of distributed intelligence that extends to the branch office. By delivering powerful business tools and applications to the branch, enterprises can realize the business benefits of increased productivity, cost reductions and scalable exchange of information.

The modular architecture of the Cisco 2600 Series allows interfaces to be upgraded to accommodate network expansion or changes in technology as new services and applications are deployed. Modular interfaces are shared with the Cisco 1700 and 3700 Series, providing unrivaled investment protection and reducing the complexity of managing the remote network solution by integrating the functions of multiple separate devices into a single, compact unit. Network modules available for the Cisco 2600 and 3700 Series support a broad range of applications, including multiservice voice/data integration, integrated switching, analog and ISDN dial access, and serial device concentration.

The integration of field-installable AIMs enhance the performance of the Cisco 2600 Series by off-loading processor-intensive functions onto a dedicated coprocessor while preserving external interface slots for other applications. A variety of AIMs are currently supported on all Cisco 2600 and Cisco 3700 Series routers, providing high-performance hardware-assisted data compression, data encryption, ATM, and DSP functionality for up to 30 digital voice channels

Cisco Systems delivers enterprise and provider class versatility, integration, and power to branch offices with the Cisco 2600 Series Modular Router Family. The Cisco 2600XM models and Cisco 2691, the latest additions to the Cisco 2600 Series routers, provide increased performance, higher service density and greater flexibility for service options to address evolving branch office requirements.

Cisco 2600 Series Modular Access Router Family: Overview

Driven by a powerful CPU processor along with high-performance DSPs and auxiliary processors on various interfaces, the Cisco 2600 Series supports the advanced QoS, security, and network integration features required in today's evolving branch offices.

Each of the Cisco 2610XM through Cisco 2651XM versions supports one Network Module (NM) slot, two WAN Interface Card slots, and one AIM slot. One NM slot is provided on the Cisco 2691, offering the same format as the Cisco 2600XM series of routers, but the 2691 also includes one additional WIC and AIM slot for applications that require increased service requirements. These slots share more than 50 different modules across three Cisco product lines-the Cisco 1700 Series, the Cisco 2600 Series, and the Cisco 3700 Series.

Table 1 Platform Overview

Platform	NMs	AIMs	WICs	Fixed LAN Ports	Performance (Up to Kpps)	DRAM (Default MB/Max MB)	FLASH (Default MB/Max MB)	Included IOS Feature Set
CISCO2610XM/ 11XM	1	1	2	1 FE/2FE	20	96/128	32/48	IOS IP Base
CISCO2612	1	1	2	1TR/1E	15	32/64	8/16	IOS IP
CISCO2620XM/ 21XM	1	1	2	1 FE/2FE	30	96/128	32/48	IOS IP Base
CISCO2650XM/ 51XM	1	1	2	1 FE/2FE	40	128/128	32/48	IOS IP Base
CISCO2691	1	2	3	2 FE	70	128/256	32/128	IOS IP Base

Key Benefits

The Cisco 2600 Series supports a wide range of performance and scalability for Branch Office networking solutions, allowing businesses to extend a cost-effective, seamless network infrastructure to the branch office with the following benefits:

- *Investment protection*—Support for field-upgradeable modular components on the Cisco 2600 Series allows customers to easily change network interfaces without a "forklift upgrade" of the entire branch office network. The AIM slot(s) further protect investments by offering the expandability to support advanced services such as hardware-assisted data compression, data encryption, ATM data/voice access, or DSP digital voice applications.

- *Lower cost of ownership*—By integrating the functions of switches, CSU/DSUs, ISDN Network Termination (NT1) devices, firewall, modems, compression or encryption devices, and other equipment found in branch office wiring closets in a single, compact unit, the Cisco 2600 Series provides a space-saving solution that can is more manageable.

- *Integrated Flexible Routing and Low Density Switching*—With support of an optional 16-port 10/100 EtherSwitch network module, branch offices can take advantage of the flexibility of integrated routing and switching functions in one unit for low port densities. This offers high-speed connections between individual desktops, servers, and other network resources in a single unit for Layer 2 and allows WAN connection at Layer 3 through the router. An optional external power chassis provides in-line power to IP Phones and to Aironet 802.11 Base Stations.

- *Integration of Content Networking and Branch-Office Routing*—-With the integration of an optional Content Engine Network Module with branch-office routing, Cisco offers the industry's first and only router-integrated content-delivery system. Combining intelligent caching, content routing and management with robust branch-office routing, WAN bandwidth is conserved for important branch IP services such as voice over IP (VoIP), while simplifying \configuration, deployment, and operations.

- *Voice/Data integration*—Cisco offers the industry's broadest, most scalable multiservice voice/data integration solution set. The Cisco 2600 Series allows network managers to provide scalable analog and digital telephony without investing in a one-time solution, allowing enterprises greater control of their converged telephony needs. Using the Voice/Fax modules, the Cisco 2600 Series may be deployed in both Voice over IP (VoIP) and Voice over Frame Relay (VoFR) networks. The packet voice trunk network module supports up to 60 simultaneous voice calls as well as supporting routing and other services. When used with the ATM-AIM, VoATM using AAL2 or AAL5 can be deployed.

- *Enterprise/Provider class solution*—Meets the requirements of multiservice enterprises and their managed service CPE providers with high reliability features, multiple WAN connections, and the ability to migrate from data-only to time-division multiplexing (TDM) voice and data to packetized voice and data infrastructure.

- *Security*—With the integration of optional VPN Modules, Cisco IOS based Firewall and IDS, Content Engine Network Modules, or Intrusion Detection Network Modules, Cisco offers the industry's most robust and adaptable Security Solution for Branch Office Routers. VPN Modules can be used to provide up to 10 times the performance over software only encryption. Additionally, the new Cisco Intrusion Detection System Network Module allows decryption, tunnel termination and traffic inspection at the first point of entry into the network while freeing the router CPU from process-intensive IDS tasks.

- *Business-Class DSL Connectivity*—With the WIC-ADSL, WIC-1ADSL-I-DG, and WIC-1SHDSL, offers a broad range of business-class broadband options with scalable performance, flexibility, and security for branch and regional offices. The Cisco 2600 Series provides an ideal solution for a variety of businesses requiring high-speed business-class DSL connectivity on a secure, high-performance modular platform.

Key Features and Benefits

The Cisco 2600 Series brings a cost-effective combination of versatility, integration, and increased performance to remote branch offices with the key features listed in Table 2.

Table 2 Cisco 2600 Series Key Features and Benefits

Feature	Benefit
Versatility and Investment Protection	
Modular Architecture which shares interfaces with Cisco 1700 and 3700 Series Routers	• Network interfaces are field-upgradeable to accommodate future technologies • Additional services can be added on an "integrate as you grow" basis • Leverages the large existing portfolio of WICs, VICs, NMs and AIMs shared across platforms to reduce sparing, training, configuration and installation and maintenance costs
LAN/WAN connectivity integrated into chassis	• Voice/WAN Interface Card support can be used for WAN (data-only) connectivity then re-deployed to support channelized voice and data or packet voice applications • Integrated 10/100 Ethernet ports on most platforms • Combination of AIMs and WICs along with NMs provides greater flexibility to create new configurations as requirements change

Table 2 Cisco 2600 Series Key Features and Benefits (Continued)

Feature	Benefit
Flexible voice gateway and IP Telephony configurations	• Enables incremental migration from TDM infrastructure to IP Telephony • Compatibility with over 90% of the world's TDM PBXs • Configuration options for higher density and mixed analog/digital gateway configurations • New 2651XM-V and 2651XM-V-SRST voice gateway bundles include the features needed for immediate integration of voice and data
Advanced Integration Module slot	• Expandability for integration of advanced services such as hardware-assisted data compression, encryption, Voice and ATM • Maximizes performance by off-loading processor intensive applications to a coprocessor • Provides expanded services, freeing the NM slot for other applications
DC power supply option platforms	• Allows deployment in DC power environments such as telecommunications carrier central offices
Enterprise/Managed Service CPE-Class Performance	
High-Performance architecture	• Support for advanced QoS features such as the Resource Reservation Protocol (RSVP), Weighted Fair Queuing (WFQ), and IP Precedence to reduce recurring WAN costs • Support for cost-effective, software-based data compression and data encryption • Integration of legacy networks via data link switching plus (DLSW+) and Advanced Peer-to-Peer Networking (APPN) • High-speed routing performance of up to 70,000 packets per second for maximum scalability to support more concurrent functions (Cisco 2691)
Security	• Cisco IOS Firewall feature sets provide support for advanced security features such as Context-Based Access Control (CBAC), Java blocking, denial of service protection, intrusion detection, and audit trails • Enables security features such as data encryption, tunneling, and user authentication and authorization for VPN access • Provides support for Advanced Encryption Standard (AES) • Optional encryption AIMs are offered, providing up to 80-Mbps of encryption performance • Optional Intrusion Detection System Network Module capable of monitoring up to 45Mbps of traffic.
Cisco IOS software	• Supports common Cisco IOS feature sets as used on the Cisco 2600 and 3700 routers • New releases of Cisco IOS software add support for new services and applications • Enables end to end solution support for Cisco IOS-based QoS and Security mechanisms • Full range of VoIP and Security/Routing feature
Reliability	
Support for optional redundant power	• Accommodates optional RPS and minimizes network downtime • RPS can be shared with other network components such as the Cisco Catalyst 2950 Series to protect the network from downtime due to power failures
Survivable Remote Site Telephony	• Enables branch offices to leverage centralized voice applications while cost-effectively providing backup redundancy

Table 2 Cisco 2600 Series Key Features and Benefits (Continued)

Feature	Benefit
Dial-on-Demand routing	• Allows automatic backup of WAN connection in case of a primary link failure
QoS	
Full support for Cisco IOS-based QoS mechanisms	• Enhanced utilization of network resources and guarantees quality, reliability and efficiency in voice and data service delivery
Simplified Management	
Security Device Manager	• The Cisco Security Device Manager (SDM) is an intuitive, easy to use, web-based device management tool embedded within the Cisco IOS access routers. SDM enables resellers and customers to quickly and easily deploy, configure and monitor a Cisco access router without requiring knowledge of IOS Command Line Interface (CLI).
Integrated CSU/DSU, add/ drop multiplexers, Analog Modems and NT1 options	• Enables remote management of all Customer Premise Equipment (CPE) elements for higher network availability and lower operational costs
Enhanced setup feature	• Context-sensitive questions guide the user through the router configuration process, allowing faster deployment
Support for Cisco AutoInstall	• Configures remote routers automatically across a WAN connection to save cost of sending technical staff to the remote site
VLAN support	• Enables inter-VLAN routing via the Cisco Inter-Switch Link (ISL) protocol and 802.1Q

Cisco 2600 Series Hardware/Software Options

Cisco 2600 Series routers offer a choice of Ethernet, Token Ring, and autosensing 10/100 Ethernet LAN interfaces. In addition, depending on the model, one Network Module slot, two or three WAN Interface Card slots, and one or two AIM slots as well as one 115.2 Kbps console port and one 115.2Kbps auxiliary asynchronous port.

Network Module Options

NMs enable the Cisco 2600 Series to be customized to meet the needs of virtually any branch office. These modules support a broad range of applications, including multiservice voice/data integration, analog and ISDN dial access, ATM access, integration of low density switching, intrusion detection systems, content networking and serial device concentration (refer to Appendix A for the complete list of supported Network Modules for the Cisco 2600 Series).

Other advantages of the NM are to provide integrated services onto one platform for greater management of services and ease of operations. By offering NMs such as the Etherswitch, Content Engine, and Intrusion Detection Network Modules, more services are integrated onto a single platform. These modules provide the advantage of integrating switching, content networking, or intrusion detection with routing onto one platform for greater management and ease of operation.

The Cisco 16-port 10/100 EtherSwitch module combines robust Layer 3 flexible WAN routing with low-density line-rate Layer 2 switching, providing straightforward configuration, easy deployment and integrated management in a single platform. The EtherSwitch modules utilize the powerful features available in both Cisco IOS® software and Catalyst switching, with hardware supporting 802.1p Layer 2 prioritization, while Cisco IOS software supports Layer 3 DiffServ and Class of Service (CoS) markings for critical business data.

Figure 2
16-Port Etherswitch Network Module

Cisco's Content Engine Network Modules offer the industry's first and only router-integrated content-delivery system. Combining intelligent caching, content routing, and management with robust branch-office routing conserves WAN bandwidth for important branch IP services such as voice over IP (VoIP), while simplifying \configuration, deployment, and operation.

Figure 3
Content Engine Network Modules

The Cisco® IDS Network Module is part of the Cisco integrated intrusion detection system (IDS) network security solutions that enable organizations to protect assets and reduce operating costs.

The Cisco IDS Network Module for the Cisco 2600XM, and 2691 routers is an integrated network module that delivers full-featured intrusion protection. The Network Module runs the latest Cisco IDS Sensor Software and is at feature/functionality parity with the Cisco IDS Sensor portfolio. For the first time you can now locate IDS as an integral part of the branch office router, and monitor traffic from all interfaces on that router. If VPN GRE/IPSec tunnels are terminating at the router, the module is able to monitor the decrypted traffic through a collaboration with IPsec VPN and Generic Routing Encapsulation (GRE) traffic—an industry first in VPN deployments. The Network Module can be deployed at branch offices and used to protect branch office networks, thereby isolating threats from the corporate site.

Figure 4
Cisco Intrusion Detection Network Module NM-CIDS-K9

Multiflex Voice/WAN Interface Card and WAN Interface Card Options

The Cisco 2600 Series WIC slots now support 20 interface cards with the introduction of the 1-port xDSL and 1 or 2-port analog modem WICs. The Cisco 2600 Series of modular routers support both ADSL and the G.shdsl WICs. These offerings bring high-speed business class broadband service to the award winning Cisco 2600 Series of multiservice routers. Now small- to medium-businesses, enterprise branch offices, and service provider managed service users can take advantage of a highly flexible and scalable solution for data only or voice and data integration, with secure VPN options.

The single and dual port Multiflex VWICs combine WAN Interface Card and VIC functionality to provide unparalleled flexibility, versatility, and investment protection from its many uses. Supporting up to T1 and E1 rates with integrated T1 CSU/DSUs or E1 DSUs, the Multiflex VWICs can be used in data-only, channelized (drop and insert) voice/data integration applications as well as packet voice/data connections to a PBX or the PSTN (packet voice requires the use of the high density voice trunk network module). Unlike legacy multibox voice and data components, when used in a Cisco 2600 or 3700, the T1/E1 Multiflex VWICs deliver a single-box voice and data platform providing a graceful migration from data only, to channelized voice and data, to packet voice and data (Refer to Appendix B for the complete list of supported Voice/WAN modules for the Cisco 2600 Series).

Figure 5
Dual-Port Multiflex T1 VWIC with Drop and Insert
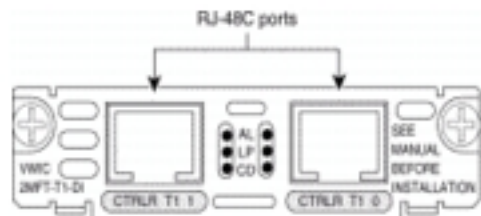
The dual-port serial WICs feature the Cisco new, compact, high-density Smart Serial connector to support a wide variety of electrical interfaces when used with the appropriate transition cables. Ports on each card can be configured individually to support a variety of synchronous or asynchronous protocols.

Advanced Integration Module Options

All Cisco 2600 Series are equipped with an internal slot to support one or two field-installable AIMs. AIMs use function-specific hardware to off-load the main router CPU and accelerate processor- or resource-intensive services, yielding dramatically higher throughput and higher performance than a software-only implementation. The AIM slot has access to virtually all of the router's resources, including the main system bus. The TDM bus and the serial communications controllers make this a very flexible and powerful feature. Since the AIM is internally mounted, external slots remain available for integration of other modular components such as CSU/DSUs, WAN interfaces, or other devices such as modems, or packetized voice/fax processors.

For example, the Data Encryption AIM offloads encryption processing from the Cisco 2600 Series CPU, providing 10 times the performance over software-only encryption. The new AIM-VPN/BPII and AIM-VPN/EPII supports a maximum number of 800 remote access tunnels when using the Cisco 2600 models. These modules offer hardware accelerated DES/3DES and the new AES (Advanced Encryption standard) encryption at speeds up to 80-Mbps performance (max based on 1400 byte packet size). In addition the AIM-VPN/BPII and AIM-VPN/EPII support hardware-assisted layer-3 compression services where bandwidth conservation may lower network connection costs.

Figure 6
VPN/EPII Encryption AIM

The AIM-ATM provides a high-performance hardware-based ATM access solution for one to four T1 or E1 connections supported by the T1 or E1 VWICs (for example, VWIC-1MFT-T1). This frees the network module slot to support other functions. When used in combination with a high-density voice network module (NM-HDV-xxx), the ATM AIM supports ATM adaptation layer (AAL) 2 and AAL5 VoATM. In addition, the AIM-VOICE-30 and AIM-ATM-VOICE-30 AIMs provides a cost effective solution for supporting voice services or digital voice over ATM (AAL2 and AAL5) support, without the use of a network module (refer to Appendix C for the complete list of supported AIM modules for the Cisco 2600 Series).

Cisco IOS Software

The Cisco 2600 Series a wide range of Cisco IOS features. This includes a variety of intranet, multiprotocol, QoS, and Security applications in use today. Beginning in 12.3 Mainline the Cisco 2600 Series features sets have been condensed into eight cross platform feature sets and up to nine additional special purpose feature sets.

The cross platform feature sets are:

- IP Base
- IP Voice

- Enterprise Base
- Enterprise Services
- Advanced IP Services
- Advanced Enterprise Services
- SP Services
- Advanced Security

The following Special Purpose feature sets are offered in addition to the above base feature sets:

- Enterprise/SNASw Plus IPSec 3DES
- Enterprise/SNASw Plus
- Enterprise Services
- Enterprise Plus/H.323 MCM
- Enterprise SSG (2650/51XM only)
- Voice IP to IP Voice Gateway (2600XM only)
- Voice IP to IP Voice Gateway IPSec 3DES (2600XM only)
- IP/H.323
- Telco Feature Set (2600XM only)

12.3Mainline and prior contain a legacy set of features sets including IP, IP Plus, Enterprise, and many others.

A more detailed list of features and memory requirements for specific feature sets by version can be found in the Cisco IOS release notes for the Cisco 2600 series.

Technical Specifications

The Cisco 2600 Series provides unparalleled flexibility and port density options for branch offices. The following table highlights a few of the Cisco 2600 configuration possibilities:

Table 3 Maximum Cisco 2600 Port Densities

Application	Max. # Cisco 2612	Cisco 2610-51XM	Cisco 2691
Simultaneous Voice Calls as a stand-alone voice gateway	up to 48 digital[1] 2 to 16 analog	up to 90 digital[1] 2 to 16 analog	120 digital 16 analog
T1/E1 Connections (including ATM)	8	8	10
Integrated Analog Modems	16	16	22
ISDN PRI (B channels)	64	64	64
ISDN BRI	12	12	14
Asynchronous Serial	37	37	39
Synchronous Serial	12	20	22
DSL Connections	4	4	5
EtherSwitch ports	16	16	16

1. Requires a 265xXM for 90 channels

Table 4 Cisco 2600 Series System Specifications

Cisco 2600 Series Models	2612	2610/11XM	2620/21XM	2650/51XM	2691
Flash Memory (Default/Max)	8MB/16MB	32MB/48MB	32MB/48MB	32MB/48MB	32MB/128MB (Compact Flash)
System Memory (Default/Max)	32MB/64MB	96MB/128MB	96MB/128MB	128MB/128MB	128MB/256MB
Integrated WIC Slots	2	2	2	2	3
Onboard AIM (Internal) Slot	1	1	1	1	2
Console Port (up to 115.2 kbps)	1	1	1	1	1
Aux Port (up to 115.2 kbps)	1	1	1	1	1
Minimum Cisco IOS Release	11.3T or later and 12.0.1 mainline	12.1(14) mainline, 12.2(12) mainline, 12.2(8)T1or later	12.1(14) mainline, 12.2(12) mainline, 12.2(8)T1or later	12.1(14) mainline, 12.2(12) mainline, 12.2(8)T1or later	12.2(8)T1 or later
Onboard LAN Ports	1 Ethernet and 1 Token Ring port	1 to 2			
10/100 FE ports	1 to 2				
10/100 FE ports	1 to 2				
10/100 FE ports	2 10/100 FE ports				
Redundant Power Supply	External only	External only	External only	External only	External only
Rack Mounting	Yes, 19' and 23" options	Yes, 19' and 23" options	Yes, 19' and 23" options	Yes, 19' and 23" options	Yes, 19' and 23" options
Wall Mounting	Yes	Yes	Yes	Yes	No
Power Supply	50W Maximum (+5V,+12V, -12V) AC power supply	50W Maximum (+5V,+12V, -12V) AC power supply	50W Maximum (+5V,+12V, -12V) AC power supply	50W Maximum (+5V,+12V, -12V) AC power supply	105W Maximum (+5V,+3.3V,+12V,-12V) AC power supply
Power Output	5V@9.5A, 12V@1.20A, -12V@0.5A	5V@9.5A, 12V@1.20A, -12V@0.5A	5V@9.5A, 12V@1.20A, -12V@0.5A	5V@9.5A, 12V@1.20A, -12V@0.5A	5V@15A, 3.3V@12A, 12V@5A, -12V@2A

Table 4 Cisco 2600 Series System Specifications (Continued)

Cisco 2600 Series Models	2612	2610/11XM	2620/21XM	2650/51XM	2691
AC Input Voltage	100–240VAC	100–240VAC	100–240VAC	100–240VAC	100–240VAC
AC Input Current	1.5 A	1.5 A	1.5 A	1.5 A	2 A max @ 100VAC; 1A max @ 240VAC
AC Frequency	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz	47–63 Hz
DC Input Voltage	-38 to -75VDC	-38 to -75VDC	-38 to -75VDC	-38 to -75VDC	-18 to -75V DC
DC Input Current	Current: 2.0 amps	Current: 2.0 amps	Current: 2.0 amps	Current: 2.0 amps	8 A @ 24VDC
Power Dissipation	75W (max), 260 Btus/hr	75W (max), 260 Btus/hr	75W (max), 260 Btus/hr	75W (max), 260 Btus/hr	215W (max), 745 BTU/hr
Operating Temperature	-32–104 F (0–40 C)	-32–104 F (0–40C)	-32–104 F (0–40C)	-32–104 F (0–40C)	-32–104 F (0–40 C)
Nonoperating Temperature	-40–158 F (-40–70 C)	-40–158 F (-40–70 C)	-40–158 F (-40–70 C)	-40–158 F (-40–70 C)	-40–158 F (-40–70 C)
Relative Humidity Noncondensing	5–95%	5–95%	5–95%	5–95%	5–95%
Operation Altitude (derate 1C per 1,000 ft.)	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C
Dimensions (HxWxD)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	3.46" x 17.0" x 11.20" (8.78 x 43.18 x 28.45 cm)
Rack Height	1RU	1RU	1RU	1RU	2RU
Weight (min.)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)	15 lb (6.80 kg)
Noise Level (min.)	38-dbA	38-dbA	38-dbA	38-dbA	45-dbA
Safety					
Regulatory Compliance					

The Cisco 2600 Series conforms to a number of safety, EMI, immunity, and network homologation standards. Additional details can be obtained through your Cisco reseller or account manager.

Summary

The Cisco 2600 Series Modular Routers extends the versatility, integration, and power to corporate branch offices, by providing more performance and increased density for multiple applications. Companies can consolidate the functions of multiple separate devices into a single, compact package that can be managed remotely. Because the Cisco 2600 Series is modular, interface configurations are easily customized to accommodate a wide variety of network applications, such as branch office data access, integrated switching, multiservice voice/data integration, dial access services, VPN access and firewall protection, inter-VLAN routing and serial device concentration. The Cisco 2600 Series is ideal for sites and solutions requiring the highest levels of integration at the edge for Branch Office IP Telephony, voice gateway, and integrated flexible routing with low-density switching solutions.

Cisco Service and Support

Leading-edge technology deserves leading-edge support. SMARTnet technical support for the Cisco 2600 Series is available on a one-time or annual contract basis. Support options range from help desk assistance to proactive, onsite consultation. All support contracts include:

- Major Cisco IOS software updates in protocol, security, bandwidth, and feature improvements
- Full access rights to Cisco.com technical libraries for technical assistance, electronic commerce, and product information
- 24-hour-a-day access to the industry's largest dedicated technical support staff

Contact your local sales office for further information.

For More Information on Cisco Products, Contact:

U.S. and Canada: 800 553-NETS (6387)

Europe: 32 2 778 4242

Australia: 612 9935 4107

Other: 408 526-7209

Web: www.cisco.com

Module Support

Appendix A: Cisco 2600 Series NMs

Product Number	Description	Cisco 2612	Cisco 2600XM	Cisco 2691
Serial and ATM NMs (requires IOS release 11.3 (3)T or later)				
NM-4T1-ATM[1, 2]	4-port T1 ATM with IMA NM	X	X	X
NM-4E1-ATM[1, 2]	4-port E1 ATM with IMA NM	X	X	X
NM-8T1-ATM[1, 2]	8-port T1 ATM with IMA NM	X	X	X
NM-8E1-ATM[1, 2]	8-port E1 ATM with IMA NM	X	X	X
NM-1A-OC3MM	Single port ATM OC-3 Multimode network module (up to 2 km)			X
NM-1A-OC3MI	Single port ATM OC-3 Single mode intermediate reach network module (up to 15 km)			X
NM-1A-OC3ML	Single port ATM OC-3 Single mode long reach network module (up to 45 km)			X
NM-1A-T3[1, 4]	1-Port DS3 ATM NM	X	X	X
NM-1A-E3[1, 4]	1-Port E3 ATM NM	X	X	X
NM-16A	16-port high density async NM	X	X	X
NM-32A	32-port high density async NM	X	X	X
NM-4A/S	4-port low speed (128 Kbps max) async/sync serial NM	X	X	X
NM-8A/S	8-port low speed (128 Kbps max) async/sync serial NM	X	X	X
NM-16A/S	16-port async/sync serial NM		X	X
NM-4T	4-port Serial network module			X
LAN/LAN/WAN NMs				
NM-2FE2W	2 10/100 Ethernet 2 WAN Card Slot network module			X
NM-1FE2W	1 10/100 Ethernet 2 WAN Card Slot network module			X
NM-1FE1R2W	1 10/100 Ethernet 14/16 Token-Ring 2 WAN Card Slot network module			X
NM-1FE-FX	One port Fast Ethernet network module, FX Only			X
NM-1FE-FX-V2	One port Fast Ethernet network module, FX Only			X

Product Number	Description	Cisco 2612	Cisco 2600XM	Cisco 2691
NM-2W	Two-WAN interface card slot network module, (WAN I/F cards offered separately)	X	X	X
NM-1E	1-port Ethernet network module	X	X	
NM-4E	4-port Ethernet network module	X	X	
NM-1ATM-25	1-port ATM 25Mbps network module	X	X	
NM-1GE	1 port Gigabit Ethernet Network Module			X
NM-1T3/E3[12]	1 port Clear Channel		X	X
Dial, ISDN, Analog Modems & Chan Serial NM (11.3 (4) T or later)				
NM-1CE1T1-PRI	1-port channelized E1/T1/ISDN PRI network module		X	X
NM-2CE1T1-PRI	2-port channelized E1/T1/ISDN PRI network module		X	X
NM-1CT1	1-port channelized T1/ISDN PRI network module	X	X	X
NM-1CT1-CSU	1-port channelized T1/ISDN PRI with CSU network module	X	X	X
NM-2CT1	2-port channelized T1/ISDN PRI network module	X	X	X
NM-2CT1-CSU	2-port channelized T1/ISDN PRI with CSU network module	X	X	X
NM-1CE1B	1-port channelized E1/ISDN PRI balanced network module	X	X	X
NM-1CE1U	1-port channelized E1/ISDN PRI unbalanced network module	X	X	X
NM-2CE1B	2-port channelized E1/ISDN PRI balanced network module	X	X	X
NM-2CE1U	2-port channelized E1/ISDN PRI unbalanced network module	X	X	X
NM-4B-S/T	4-port ISDN BRI network module (S/T interface)	X	X	X
NM-4B-U	4-port ISDN BRI with NT-1 network module (U interface)	X	X	X
NM-8B-S/T	8-port ISDN BRI network module (S/T interface)	X	X	X
NM-8B-U	8-port ISDN BRI with NT-1 network module (U interface)	X	X	X
NM-8AM	8 analog modem network module	X	X	X
NM-16AM	16 analog modem network module	X	X	X

Product Number	Description	Cisco 2612	Cisco 2600XM	Cisco 2691
NM-1HSSI	1-port HSSI network module			X
Voice/Fax NMs				
NM-HDV-1T1-12[1, 2]	12-channel T1 high density voice/fax network module	X	X	X
NM-HDV-1E1-12[1, 3]	12-channel E1 high density voice/fax network module	X	X	X
NM-HDV-1T1-24[1, 2]	24-channel T1 high density voice/fax network module	X	X	X
NM-HDV-1T1-24E[1, 2]	24-channel T1 enhanced high density voice/fax network module	X	X	X
NM-HDV-1E1-30[1, 3]	30-channel E1 high density voice/fax network module	X	X	X
NM-HDV-1E1-30E[1, 3]	30-channel enhanced E1 high density voice/fax network module	X	X	X
NM-HDV-2T1-48[1, 2]	48-channel T1 high density voice/fax network module	X	X	X
NM-HDV-2E1-60[1, 3]	60-channel E1 high density voice/fax network module	X	X	X
NM-1V[1]	1-slot voice/fax network module	X	X	X
NM-2V[1]	2-slot voice/fax network module	X	X	X
NM-16ESW-PWR[5]	16Port 10/100 Etherswitch NM with Power card	X	X	X
NM-16ESW[5]	16Port 10/100 Etherswitch NM	X	X	X
EM-HDA-8FXS[5]	8 port voice/fax expansion module FXS	X	X	X
NM-HDA-4FXS[5]	High Density analog voice/fax network module with 4 FXS	X	X	X
EM-HDA-4FXO[5]	4 port voice/fax expansion module FXO	X	X	X
NM-HDV-1J1-30[7]	1-Port 30-Channel J1 High-Density Voice Network Module	X	X	X
NM-HDV-1J1-30E[7]	1-Port 30-Enhanced Channel J1 High-Density Voice Network	X	X	X
NM-HDV-FARM-C36[10]	Network Module 36 Port DSP Farm Bundle	X[11]	X	X
NM-HDV-FARM-C54[10]	Network Module 54 Port DSP Farm Bundle	X[11]	X	X
NM-HDV-FARM-C90[10]	Network Module 90 Port DSP Farm Bundle	X[11]	X	X

Product Number	Description	Cisco 2612	Cisco 2600XM	Cisco 2691
NM-HD-1V	One-slot IP Communications Voice/Fax Network Module		X	X
NM-HD-2V	Two-slot IP Communications Voice/Fax Network Module		X	X
NM-HD-2VE	Two-slot IP Communications Enhanced Voice/Fax Network Module		X	X
Alarm Interface Controller (AIC) Network Module				
NM-AIC-64[6]	Alarm monitoring and control NM; 64 contact points and 16 control points	X	X	X13
Intrusion Detection System Network Modules				
NM-CIDS-K9	Cisco IDS Network Module, 20-GB IDE hard disk		X	X
Content Engine Network Modules				
NM-CE-BP-20G-K9[9, 10]	Content Engine Network Module, basic performance, 20-GB IDE hard disk	X	X	X
NM-CE-BP-40G-K9[9, 10]	Content Engine Network Module, basic performance, 40-GB IDE hard disk	X	X	X
NM-CE-BP-SCSI-K9[9, 10]	2-port E&M voice/fax interface card for voice/fax network module	X	X	X

1. The voice/fax and ATM NMs require a Cisco IOS Plus feature set.
2. Requires Cisco IOS Version 12.05XK, 12.07T, 12.1, 12.1T, 12.2, 12.2T or later.
3. Requires Cisco IOS Version 12.07XK, 12.12T, 12.2, 12.2T or later.
4. Requires Cisco IOS Version 12.1.2T or later.
5. Requires Cisco IOS Version 12.2(2)XT, 12.2(8)T or later
6. Requires Cisco IOS Version 12.2(2)XG and 12.2(7)T or later
7. Requires Cisco IOS Version 12.2(8)T or later
8. Scheduled for future support on the Cisco 2691
9. Requires Cisco IOS Version 12.2(11)YT
10. Requires Cisco IOS Version 12.2(13)T
11. Available on 2650 or 2651 only
12. Available on 2650XM or 2651XM only
13. Requires 12.3(2)T or later on the Cisco 2691

Appendix B: Cisco 2600 Series Voice and WAN Interface Cards

Voice Interface Cards Supported for use with the Voice/Fax NMs

Product Number	Description	Cisco 2612	Cisco 2600XM	Cisco 2691
VIC-2BRI-S/T-TE[1]	2-port BRI S/T terminal equipment voice/fax interface card for voice/fax NM	X	X	X
VIC-2BRI-NT/TE[3]	2-port BRI (NT and TE) Voice Interface module	X	X	X
VIC2-2BRI-NT/TE	2-port BRI (NT and TE) Voice Interface module		X	X
VIC-2FXS	2-port FXS voice/fax interface card for voice/fax NM	X	X	X
VIC2-2FXS	Two-port Voice Interface Card—FXS		X	X
VIC-4FXS/DID	4-port FXS voice/fax interface card. (Note: The DID feature is not supported at this time.)		X	X
VIC-2FXO-M1[2]	2-port FXO voice/fax interface card for voice/fax NM w/ Caller ID & supervisory disconnect (North American version and other countries)	X	X	X
VIC-2FXO	2-port FXO voice/fax interface card for voice/fax network module (North American version and other countries)	X	X	X
VIC2-2FXO	Two-port Voice Interface Card—FXO (Universal)		X	X
VIC2-4FXO	Four-port Voice Interface Card—FXO (Universal)		X	X
VIC-2FXO-M2[2]	2-port FXO voice/fax interface card with Caller ID and supervisory disconnect (Europe version)	X	X	X
VIC-2FXO-EU	2-port FXO voice/fax interface card (Europe version)	X	X	X
VIC-2FXO-M3	2-port FXO voice/fax interface card for Australia	X	X	X
VIC-2E/M	2-port E&M voice/fax interface card for voice/fax network module	X	X	X
VIC2-2E/M	2-port E&M voice/fax interface card for voice/fax network module		X	X
VIC-2DID	2-port DID (Direct Inward Dial) voice/fax interface card	X	X	X
VIC-2CAMA[3]	Two-port CAMA trunk interface card	X	X	X

1. Supported with Cisco IOS 12.0(3)T or later
2. Supported with Cisco IOS 12.1(2)XH or later
3. Supported with Cisco IOS 12.2(11)T or later

Cisco 2600 Series Multiflex Voice/WAN and WICs

Product Number	Description	Cisco 261x-265x	Cisco 2600XM	Cisco 2691
VWIC-1MFT-T1[1]	1-port T1/Fractional T1 Multiflex Trunk with CSU/DSU	X	X	X
VWIC-2MFT-T1[1]	2-port T1/Fractional T1 Multiflex Trunk with CSU/DSU	X	X	X
VWIC-2MFT-T1-DI[1]	2-port T1/Fractional T1 Multiflex Trunk with CSU/DSU and Drop & Insert	X	X	X
VWIC-1MFT-E1[1]	1-port E1/Fractional E1 Multiflex Trunk with DSU	X	X	X
VWIC-2MFT-E1[1]	2-port E1/Fractional E1 Multiflex Trunk with DSU	X	X	X
VWIC-2MFT-E1-DI[1]	2-port E1/Fractional E1 Multiflex Trunk with DSU and Drop & Insert	X	X	X
VWIC-1MFT-G703[2]	1-port G.703 Multiflex Trunk	X	X	X
VWIC-2MFT-G703[2]	2-port G703 Multiflex Trunk	X	X	X
WIC-1DSU-T1[1, 6]	T1/Fractional T1 CSU/DSU	X	X	X
WIC-1DSU-T1-V2	T1/Fractional T1 CSU/DSU (Replaces WIC-1DSU-T1)		X	X
WIC-1DSU-56K[4]	1-port four-wire 56/64 Kbps CSU/DSU	X	X	X
WIC-1T[6]	1-port high speed serial	X	X	X
WIC-2T	2-port high speed serial	X	X	X
WIC-2A/S	2-port async/sync serial	X	X	X
WIC-1B-S/T	1-port ISDN BRI	X	X	X
WIC-1B-U-V2	1-port ISDN BRI with NT1	X	X	X
WIC-1AM[5]	1-port Analog Modem interface card	X	X	X
WIC-2AM[5]	2-port Analog Modem interface card	X	X	X
WIC-1ADSL[3]	1-port ADSL over POTs WAN Interface	X	X	X
WIC-1ADSL-I-DG	1-port ADSL over ISDN WAN Interface		X	X
WIC-1SHDSL[4, 6]	1-port G.SHDSL WAN Interface	X	X	X

1. Requires Cisco IOS 12.0(5)XK or later.
2. Requires Cisco IOS 12.1(1)T or later.
3. Requires Cisco IOS 12.1(5)YB, 12.2(2)XK, 12.2(4)T or later.
4. Requires Cisco IOS 12.2(4)XL or later.
5. Requires Cisco IOS 12.2(2)XB or later.
6. Requires Cisco IOS Version 12.2(11)YT, 12.2(13)T or later for Cisco 2691

Appendix C: Cisco 2600 Series AIMs

Product Number	Description	Cisco 2612	Cisco 2600XM	Cisco 2691
AIM-COMPR2	Data Compression AIM for the Cisco 2600 Series (requires IOS software release 12.02T or later)	X	X	
AIM-COMPR4[2]	Data Compression AIM for the Cisco2691, 3660 and 3700 Series			X
AIM-VPN/BP	DES/3DES Data VPN Encryption AIM for the Cisco 2600 series	X	X	
AIM-VPN/BPII	DES/3DES/AES VPN Encryption & Compression Module for 2600XM		X	
AIM-VPN/EP[1]	DES/3DES Data VPN Encryption AIM for the Cisco 2600 series	X	X	X
AIM-VPN/EPII[3]	DES/3DES/AES VPN Encryption & Compression Module for 2691/3725			X
AIM-ATM[2]	High Performance ATM Advanced Integration Module	X	X	X
AIM-VOICE-30[2]	30 Channel T1/E1 Digital Voice Module (requires IOS software release IOS 12.2(2)XB or later)	X	X	X
AIM-ATM-VOICE-30[2]	ATM SAR and 30 Channel T1/E1 Digital Voice Module (requires IOS software release IOS 12.2(2)XB or later)	X	X	X

1. Recommended with the Cisco 265x, 265xXM, and 2691 only.
2. Requires Cisco IOS Version 12.2(11)YT, 12.2(13)T for Cisco 2691
3. Requires Cisco IOS Version 12.2(13)T for Cisco 2691

CISCO SYSTEMS

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