



Cisco 3600 Series Multiservice Platforms

## Cisco 3600 Series Multifunction Platforms (3620 and 3640/3640A)

### Data Sheet

#### Cisco 3600 Series Multifunction Platform (Cisco 3620, 3640, 3620-DC, 3640-DC, 36XX-RPS)

**The Cisco 3600 is the industry's first true multifunction platform with the versatility to support branch/enterprise hybrid dial access applications, LAN-to-LAN or routing applications, and multiservice applications in a single platform. It provides unprecedented modularity options with a broad range of available network modules, enormous flexibility with a variety of configurable options for customer-specific application scenarios, and, above all, high-performance to support any of these applications.**

The Cisco 3640/3640A server is equipped with four network module slots, and the Cisco 3620 has two network module slots. Dial connectivity is supported with a series of network modules offering Integrated Services Digital Network (ISDN), Primary Rate Interface (PRI), ISDN Basic Rate Interface (BRI), integrated digital and analog modems, very high density asynchronous interfaces, two and four port Voice/Fax, 25-Mbps ATM, low-speed asynchronous/synchronous serial, and hardware compression assisted network modules. LAN and WAN connectivity are provided by a series of mixed-media cards supporting Ethernet, Token Ring, and a variety of WAN technologies. Routing applications are supported with high-density Ethernet and a single-port, autosensing, Fast Ethernet network module. Voice and Fax multiservice applications are also supported with integrated voice network modules and voice interface cards.

The Cisco 3600 is an ideal upgrade to branches that have outgrown their current routing hardware and require the next generation of hardware for their "power branch" applications. The flexibility of the Cisco 3600 Series enables you to support a variety of solutions for the power branch office environment. No matter how much your requirements may vary from place to place, the Cisco 3600 platform has the performance and diversity to meet your needs at a very cost-effective price. For instance, a branch office using ISDN to connect to the main office may require dedicated Frame Relay service in a year's time with increased traffic on the network—without a forklift upgrade in the wiring closet. As a multifunction solution, you can rely upon the outstanding performance, reliability, security, and flexibility of the Cisco 3600 platform to meet your needs for many years. Multiple devices become quite expensive to manage, configure, and support when compared to a single, multifunction device with integrated management, configuration, and single vendor support.

Finally, Cisco IOS<sup>®</sup> software contains many features that provide security, reliability, and WAN optimization. In any application, the Cisco IOS features can be used to control ongoing WAN costs. For example, the Cisco 3600 server supports dial-on-demand routing (DDR) and dial backup, as well as protocol spoofing and snapshot routing to reduce unnecessary WAN traffic. To further reduce WAN costs and increase effective bandwidth, Cisco IOS software supports data compression over Frame Relay, dedicated leased line, and dial networks. Cisco IOS software has extensive multimedia capabilities that enable companies to support new applications such as teleconferencing over the WAN. Features such as the Resource Reservation Protocol (RSVP), Protocol Independent Multicast (PIM), generic traffic shaping, Committed Access Rate (CAR), custom and priority queuing, and Weighted Fair Queuing (WFQ) ensure a consistent quality of service and high applications availability.

#### Multifunction Capabilities of the Cisco 3600 for the Power Branch

The Cisco 3600 is targeted at meeting the evolving requirements of the power branch. A power branch can be defined as one that has outgrown its initial networking hardware, and needs to add functionality such as high-density dial access server support, multiservice integration of voice and fax, advanced Quality of Service (QoS), security, ATM and, at the same time, provide an open architecture for future requirements such as Digital Subscriber Line (DSL), video, and advanced voice features. The Cisco 3600 has the performance built-in to handle these diverse needs, and also has power to address the future branch requirements, in a modular chassis with network module options that provide the ultimate investment protection.

For example, as an ISDN access solution, a Cisco 3600 ISDN PRI access server with integrated digital modems is ideal for branch offices with limited rack space. Customers or telecommuters save line costs by dialing a local access number, and then are routed to services over the WAN. A backup T1 serial connection using a mixed-media LAN module with T1 WAN interface cards also provides LAN access. Up to 60 digital modems may be installed in a Cisco 3640/3640A chassis to simplify management, conserve rack space, and ensure interoperability with the rest of your Cisco network.

As a remote distributed access server, the Cisco 3600 is optimal for deploying in a dispersed dial infrastructure. For example, geographic concerns require a service provider to deploy a large number of small points of presence (POPs) that are geographically dispersed. The Cisco 3600 with its redundant high-speed serial ports provides for backhaul of data to points of aggregation, while its redundant LAN interfaces, including the ability to provide Fast Ethernet and Token Ring, provide the maximum flexibility of deployment in a variety of LAN environments.

## Cisco 3600 Provides Multiprotocol Dial Access into Enterprises

Increasingly, enterprises and branch offices are experiencing the need to extend network access to a broad range of remote users, including employees, vendors, customers, and partners. Successful remote access means being able to connect these users from practically any location with support for any protocol, almost transparently. Varying demands of telecommuters and mobile users necessitate both ISDN and async connections. Today, users expect to get the same access and quality of service they receive when connected locally. To meet this requirement, the remote access server must be part of the total network solution and scale with it to meet the growing remote access needs.

The Cisco 3600 supports the most complete set of access protocols of any access server in the industry, including, Point-to-Point Protocol (PPP), and Multilink PPP (MP), integrated analog and digital modems, 56 Kbps/V.90, dial-out and fax-out, Modem over BRI, R2, and CAS signaling. The flexible configuration options of the Cisco 3600, when combined with the power of the Cisco IOS software, meet the requirements for secure, reliable, dial-in connections with rich software support of this critical multiprotocol, dial access application.

### Features

#### Full Power of Cisco IOS Software

The Cisco 3600 is a component of the Cisco complete end-to-end solution set for dial connectivity. No other vendor can offer remote users as many options for Internet access and enterprise extension. This offering is also boosted considerably by the ability of the Cisco IOS software to affordably deploy dial virtual private networks (Dial VPNs). Users can also save through bandwidth optimization techniques such as data compression and can deploy high-quality network security firewalls and data encryption.

#### Security

The primary concern for most network managers today is security. The Cisco 3600, along with the popular and robust Cisco IOS software, provides comprehensive security throughout customer core networks. For remote user environments, the Cisco 3600 extends that proven core security to mixed-media dial-in sites. Among the security features supported by the Cisco IOS software are, IOS Firewall Features, DES, and 3DES data encryption, extended access lists, violation logging, Remote Access Dial-In User Service (RADIUS), Kerberos V, and TACACS+ with authentication, authorization, and accounting (AAA).

#### Management

The Cisco 3600 offers a complete graphical user interface (GUI) management tool called CiscoWorks and CiscoWorks 2000, providing for graphical configuration, monitoring, and debugging of the Cisco 3600 chassis and its associated network modules. The Cisco configuration management capabilities provide network managers with complete control over network statistics and the ability to configure and tune network operations from a central location. Comprehensive debugging tools are available in Cisco IOS software to substantially reduce the time and cost associated with problem isolation and recovery.

To address the internal modems available in the Cisco 3600, an optional, advanced, modem management feature set is available, which provides extensive bandwidth optimization features to help branch and enterprise customers lower the recurring costs associated with operating a geographically dispersed wide-area network.

The modem management feature set includes call-inprogress monitoring, hard and soft busy out, grouping, a user-defined threshold for alarms, and statistics. Administrators can view real-time information (for current or previous calls) such as modem modulation scheme, modem protocol, modem EIA/TIA-232 signal states, modem transmit and receive rates, and analog signal-to-noise ratio. The modems can be managed via the same tools used to manage the rest of the network, providing network managers with one solution at a central management point.

#### Scalability

The Cisco implementation of the Multichassis Multilink Point-to-Point Protocol (MMP) allows customers to start small and scale additional access servers as required, while still being able to dial into one center. Enterprise and branch office network managers with medium dial-in pools can easily scale and integrate their access infrastructures to aggregate multiple calls on multiple servers, providing a higher-bandwidth solution to their end users. These scalability features are critical for service providers and enterprise customers as they build resilient systems that leverage distributed network reliability. Multilink Point-to-Point-Protocol (MP) allows users to take advantage of ISDN connections and achieve a raw 128-kbps data throughput using two B channels. Async users can also take advantage of this feature, if supported on their workstation, with two modems connected over two phone lines.

MMP support is a key factor in scaling the Cisco 3600 solution to meet expanding user requirements. MMP allows calls to be "linked," regardless of the physical chassis each call is placed to, allowing Cisco 3600 chassis to be stacked and viewed as one dial-in pool.

### World Class Support

#### Life Cycle-Focused Support Solutions

The Cisco comprehensive support portfolio delivers solutions that enhance the network throughout its life cycle. From design and installation, to preventive and scheduled maintenance, to performance optimization, Cisco's solutions promote network reliability, efficiency, and flexibility. Designed to function as an integral product component, these programs deliver seamless support.

Together, they proactively help organizations sharpen their competitive edge. Through access to the Cisco Connection Online (CCO) Web site, customers can both use and market expanded functionality and new features as soon as they become available. Moreover, access to the Cisco technical expertise is available around the clock and around the globe. This virtual team of the world's top networking engineers is equipped to address every need, from troubleshooting to network design and planning.

### Key Features and Benefits

The 3600 Series Modular Access routers provide value added end-to-end networking solutions with the following benefits:

- **Multiservice Integration**—Complementing the Cisco 2600 Series, the Cisco 3600 Series extends the versatility, integration, and power to larger remote branch offices. The Cisco 3600 Series leads the way in Cisco's commitment to add multiservice voice/data integration capabilities to its product portfolio, enabling corporate customers to control costs and allowing service providers to offer broader managed service options.
- **Investment Protection**—The ability of the Cisco 3600 series to support field-upgradable modular components, customers can easily change network interfaces without a "forklift upgrade" of the entire remote branch office solution.
- **Lower Cost of Ownership**—Integrating the functions of CSU/DSUs, ISDN Network Termination (NT1) devices, and other equipment found in branch office wiring closets in a single, compact unit provides a space-saving solution that can be managed remotely using network management applications such as CiscoWorks and CiscoView.
- **Part of the Cisco end-to-end solution**—As a key part in the Cisco comprehensive end-to-end solution, the 3600 series allows businesses to extend a cost-effective, seamless network infrastructure to the remote branch office location.

**Table 1** Key Features and Benefits

Feature	Benefit
<b>Versatility</b>	<ul style="list-style-type: none"> <li>• Network Interfaces are field-upgradable to accommodate future technologies while providing solutions for today</li> <li>• Additional Interfaces can be added on a "pay as you grow" basis to allow network growth</li> <li>• LAN and WAN interface configuration is easily customized for individual needs</li> </ul>
WAN Interface cards and Network Modules Shared with Cisco 1600 and 2600 Series Routers	<ul style="list-style-type: none"> <li>• Reduced cost of maintaining inventory of Cisco 1600, 2600, and 3600 Series modular components</li> <li>• Lower training costs for support personnel</li> </ul>
DC Power Supply Option	<ul style="list-style-type: none"> <li>• Allows deployment of DC power environments such as telecommunications carrier central offices</li> </ul>
<b>Power</b>	
High-Performance RISC Architecture	<ul style="list-style-type: none"> <li>• Support for advanced QoS features such as RSVP, WFQ, CAR, and IP Precedence to reduce recurring WAN costs</li> <li>• Enables security features such as data encryption, tunneling, and Radius, TACACS, and AAA to protect data assets</li> <li>• Integration of legacy networks via data link switching plus (DLSW+) and Advanced Peer-to-Peer Networking (APPN)</li> <li>• High-speed Fast Ethernet to Fast Ethernet routing (50-70kpps) for maximum scalability</li> </ul>
Full Cisco IOS Support	<ul style="list-style-type: none"> <li>• Provides the widest array of networking and routing protocol support in the industry for large-scale end-to-end network solutions</li> </ul>
<b>Manageability</b>	
Integrated DSU/CSUs and NT1 Options	<ul style="list-style-type: none"> <li>• Enables remote management of all CPE elements for higher network availability and lower operational costs</li> </ul>
Modem Management, Including Modem Statistics, Real-Time Call in Progress, Monitoring Modem Activity Log and Modem Hard/Soft Busy Out.	<ul style="list-style-type: none"> <li>• Enhanced monitoring of modem call progress and statistics in real time to reduce problem detection and resolution time</li> </ul>

Support for CiscoWorks, CiscoWorks2000, and CiscoView	<ul style="list-style-type: none"> <li>Allows simplified management of all integrated and stackable components</li> </ul>
Support for Cisco Voice Manager (CVM)	<ul style="list-style-type: none"> <li>Reduces the costs of deploying and managing integrated voice/data solutions</li> </ul>
Enhanced Setup Feature	<ul style="list-style-type: none"> <li>Context-sensitive questions guide the user through the router configuration process, allowing faster deployment</li> </ul>
Autoinstall	<ul style="list-style-type: none"> <li>Configures remote routers automatically across a WAN connection to save the cost of sending technical staff to remote sites</li> </ul>

### Reliability

Redundant Power Supply Options	<ul style="list-style-type: none"> <li>RPS unit can be shared with other network components such as the Cisco Catalyst 1900, 2500, 2600, and 4000 Series to protect the network from downtime due to power failures</li> </ul>
Dial-on-Demand Routing	<ul style="list-style-type: none"> <li>Allows automatic backup of WAN connections in case of a primary link failure. Supported over ISDN, or low and high speed asynchronous/synchronous lines</li> </ul>
Dual Bank Flash memory	<ul style="list-style-type: none"> <li>Backup copy of Cisco IOS can be stored in Flash memory</li> </ul>

### Ergonomic Design

LED Status Indicators	<ul style="list-style-type: none"> <li>Provides at-a-glance indications for power, RPS status, network activity, and interface status</li> </ul>
All Network Interfaces Located on Back of Unit	<ul style="list-style-type: none"> <li>Simplifies installation and cable management for maximum uptime</li> </ul>
Easy-to-Open Chassis Design	<ul style="list-style-type: none"> <li>Allows fast and easy access for installation or upgrading of Flash or DRAM memory</li> </ul>

### The Cisco 3600 Platforms

The Cisco 3600 Series Modular Access routers provide amazing versatility to support branch/enterprise dial access applications, LAN-to-LAN or routing applications, and multiservice applications in a single chassis. These unique features make the Cisco 3600 the ideal platform for the power branch. Cisco continues to develop new solutions for the Cisco 3600 Series that help you stay ahead. Cisco provides unprecedented modularity options with a broad range of available network modules, enormous flexibility with the variety of configurable options for customer-specific application scenarios, and, above all, high-performance to support any of these applications.

### Cisco 3600 Family Overview

Tables 2 through 5 detail the current network modules, WAN Interface cards, and Voice Interface cards available in the Cisco 3600 Series.

### Cisco 3620-DC and 3640-DC/3640A-DC Routers

For telco customers, where DC power is the only option available, the Cisco 3600 products are available in DC versions. These power supplies can also be ordered as spares, and they are field-replaceable units (FRUs). The spare power supplies are listed as PWR-3620-DC= and PWR-3640-DC=.

### Summary

As increasing computing capabilities change the landscape of the power branch office network, the Cisco 3600 Series Modular Access routers protect your investment for years to come. Cisco continues to develop new solutions for the Cisco 3600 Series that help you stay ahead. The amazing versatility to support branch/enterprise hybrid dial access applications, LAN-to-LAN or routing applications, ATM, and multiservice applications in a single chassis make the Cisco 3600 the ideal platform for the power branch. It provides unprecedented modularity options with a broad range of available network modules, enormous flexibility with the variety of configurable options for

customer-specific application scenarios, and, above all, high performance to support any of these applications.

The benefits of a single-vendor, end-to-end networking solution are compelling. As part of a globally networked business, power branch offices must be positioned to take advantage of emerging, powerful, multimedia applications that define Internet/intranet networking today and tomorrow.

The Cisco 3600 Series meets the challenge ahead with a comprehensive solution that you can depend upon for performance and flexibility.

You know you're partnering with a vendor you can trust. Cisco Systems stands behind every product it builds with outstanding service and support, and a proven record for performance, reliability, and standard-setting technology.

### Cisco IOS Software Subsets

Full Cisco IOS software support with a variety of Cisco IOS feature sets (IP through Enterprise with APPN)

Platform	Minimum IOS Release
<b>CISCO3640</b>	11.1(7)AA
<b>CISCO3640-DC</b>	11.1(7)AA
<b>CISCO3640-RPS</b>	11.2(7)P
<b>CISCO3640A</b>	12.0(24) M, 12.1(17) M, 12.2(12) M, and 12.2(11) T1
<b>CISCO3640A-DC</b>	12.0(24) M, 12.1(17) M, 12.2(12) M, and 12.2(11) T1
<b>CISCO3640A-RPS</b>	12.0(24) M, 12.1(17) M, 12.2(12) M, and 12.2(11) T1

**Table 2 Hardware Comparison**

Cisco 3600 Series Feature	Cisco 3640/3640A	Cisco 3620
<b>Processor Type</b>	100-MHz IDT R4700 RISC	80-MHz IDT R4700 RISC
<b>Flash Memory</b>	16 MB, upgradable to 32 MB	16 MB, upgradable to 32 MB
<b>System Memory</b>	32 MB DRAM, upgradable to 128 MB DRAM	32 MB DRAM, upgradable to 64 MB DRAM
<b>Network Module Slots</b>	Four slots	Two slots
<b>Power</b>	AC, DC, Redundant Power Option	AC, DC, Redundant Power Option
<b>Dimensions (WxHxD)</b>	17.5-in. x 3.44-in. x 15.75-in	17.5-in. x 1.69-in. x 14.25-in.
<b>Performance</b>	50-70 kpps	20-40 kpps
<b>Console and Auxiliary Ports (up to 115.2 kbps)</b>	Yes	Yes
<b>Rack and Wall Mounting</b>	Yes	Yes
<b>Dual Type II PC Card Slots</b>	Yes	Yes

**Table 3 Cisco 3600 Series Network Modules Product Numbers and Description**

<b>Module</b>	<b>Description</b>
<b>Serial Network Modules</b>	
NM-16A	16 port high-density async network module
NM-32A	32 port high-density async network module
NM-4T	Four-port serial network module
NM-4A/S	Four-port async/sync serial network module
NM-8A/S	Eight-port async/sync serial network module
NM-1HSSI	One-port high speed serial interface module
<b>LAN Network Modules and Mixed-Media LAN/WAN Network Modules</b>	
NM-1FE-TX	One-port Fast Ethernet network module (10/100BaseTX only)
NM-1FE-FX	One-port Fast Ethernet network module (10/100Base Fiber only)
NM-1FE-FX-V2	One-port Fast Ethernet network module (10/100Base Fiber only)
NM-1FE-SMF	One-port Fast Ethernet network module (10/100Base Single Mode Fiber only)
NM-4E	Four-port Ethernet network module
NM-1E	One-port Ethernet network module
NM-1E2W	One-port Ethernet, two WAN card slot network module
NM-2E2W	Two-port Ethernet, two WAN card slot network module
NM-1E1R2W	One-port Ethernet, one-port Token Ring, two WAN card slot network module
NM-1FE2W	One 10/100 Ethernet 2 WAN Card Slot Network Module
NM-2FE2W	Two 10/100 Ethernet 2 WAN Card Slot Network Module
NM-1FE1R2W	One-port Fast Ethernet, one-port 4/16 Token Ring, 2 WAN card slot network module
NM-2W	Two WAN Card Slot Network Module (no LAN)
<b>Digital Packet Voice and Fax Trunk Network Modules</b>	
NM-HDV-1T1-12	Single-port, 12-channel T1 voice/fax Network Module (supports 12-channels of medium complexity VoCoders: G.729a/b, G726, G.711 and fax or 6 channels of G.726, G.729, G.723.1, G.728, G729a/b, G.711 and fax)

NM-HDV-1T1-24	Single-port, 24-channel T1 voice/fax Network Module (supports 24 channels of medium complexity VoCoders: G.729a/b, G.726, G.711 and fax or 12 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711 and fax)
NM-HDV-1T1-24E	Single-port, enhanced 24-channel T1 voice/fax Network Module (supports 24 channels of high and medium complexity VoCoders: G.729a/b, G.726, G.729, G.728, G.723.1, G.711 and fax)
NM-HDV-2T1-48	Dual-port, 48-channel T1 voice/fax Network Module (supports 48 channels of medium complexity VoCoders: G.729a/b, G.726, G.711 and fax or 24 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711 and fax) Supports add/drop multiplexing (drop and insert)
NM-HDV-1E1-12	Single-port, 12-channel E1 voice/fax Network Module (supports 12-channels of medium complexity VoCoders: G.729a/b, G.726, G.711 and fax or 6 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711 and fax)
NM-HDV-1E1-30	Single-port, 30-channel E1 voice/fax Network Module (supports 30 channels of medium complexity VoCoders: G.729a/b, G.726, G.711 and fax or 12 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711 and fax)
NM-HDV-1E1-30E	Single-port, enhanced 30-channel E1 voice/fax Network Module (supports 30 channels of high and medium complexity VoCoders: G.729a/b, G.726, G.729, G.728, G.723.1, G.711 and fax)
NM-HDV-2E1-60	Dual-port, 60-channel E1 voice/fax Network Module (supports 60 channels of medium complexity VoCoders: G.729a/b, G.726, G.711 and fax or 30 channels of G.726, G.729, G.723.1, G.728, G.729a/b, G.711 and fax) Supports add/drop multiplexing (drop and insert)
NM-HDV=	High-density voice/fax Network Module spare
PVDM-12=	12-channel packet voice DSP module upgrade spare

#### ISDN and Channelized Serial Network Modules

NM-1CT1	One-port channelized T1/ISDN PRI network module
NM-1CT1-CSU	One-port channelized T1/ISDN PRI with CSU network module
NM-2CT1	Two-port channelized T1/ISDN PRI network module
NM-2CT1-CSU	Two-port channelized T1/ISDN PRI with CSU network module
NM-1CE1B	One-port channelized E1/ISDN PRI balanced network module
NM-1CE1U	One-port channelized E1/ISDN PRI unbalanced network module
NM-2CE1B	Two-port channelized E1/ISDN PRI balanced network module
NM-2CE1U	Two-port channelized E1/ISDN PRI unbalanced network module
NM-1FE1CT1	One-port Fast Ethernet and 1-port Channelized T1/ISDN-PRI network module
NM-1FE1CT1-CSU	One-port Fast Ethernet and 1-port Channelized T1/ISDN-PRI network module with integrated CSU

NM-2FE1CT1 One-port Fast Ethernet and 2-port Channelized T1/ISDN-PRI network module

NM-2FE1CT1  
-CSU One-port Fast Ethernet and 2-port Channelized T1/ISDN-PRI network module with integrated CSUs

NM-  
1FE1CE1U One-port Fast Ethernet and 1-port Channelized E1/ISDN-PRI network module

NM-  
1FE1CE1B One-port Fast Ethernet and 1-port Channelized E1/ISDN-PRI network module

NM-  
1FE2CE1U One-port Fast Ethernet and 2-port Channelized E1/ISDN-PRI network module

NM-  
1FE2CE1B One-port Fast Ethernet and 2-port Channelized E1/ISDN-PRI network module

NM-4B-S/T Four-port ISDN BRI network module

NM-4B-U Four-port ISDN BRI with NT-1 network module

NM-8B-S/T Eight-port ISDN BRI network module (S/T Interface)

NM-8B-U Eight-port ISDN BRI with NT-1 network module (U Interface)

#### **Modem Modules**

NM-8AM Eight-port Analog Modem network module

NM-16AM 16-port Analog Modem network module

NM-6DM Six digital modem network module

NM-12DM 12 digital modem network module

NM-18DM 18 digital modem network module

NM-24DM 24 digital modem network module

NM-30DM 30 digital modem network module

MICA-6MOD= Six digital modem upgrade card

#### **Voice/Fax Network Modules**

NM-1V One-slot Voice and Fax network module

NM-2V Two-slot Voice and Fax network module

#### **ATM Network Modules**

NM-1ATM-25 One-port 25-Mbps ATM network module

NM-1A-  
OC3MM One-port 155-Mbps OC-3 ATM multimode network modules



NM-1A-OC3SMI	One-port 155-Mbps OC-3 ATM single-mode intermediate-reach network modules
NM-1A-OC3SML	One-port 155-Mbps OC-3 ATM single-mode long-reach network modules
NM-4T1-IMA	Four-port T1 ATM network module with Inverse Multiplexing over ATM (IMA)
NM-8T1-IMA	Eight-port T1 ATM network module with IMA
NM-4E1-IMA	Four-port E1 ATM network module with IMA
NM-8E1-IMA	Eight-port E1 ATM network module with IMA
NM-1A-T3	One-port DS3 ATM Network Module
NM-1A-OC3MM-1V	One-port OC-3/STM-1 CES multimode
NM-1A-OC3SMI-1V	One-port OC-3/STM-1 CES single mode, intermediate reach
NM-1A-OC3SML-1V	One-port OC-3/STM-1 CES single mode, long-reach fiber
NM-1A-E3	One-port E3 ATM network module

#### Alarm Interface Controller Network Module

NM-AIC-64	Alarm Interface Controller Network Module
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#### Other

PWR600-AC-RPS-XXX	600W redundant power supply option
NM-COMPR	Compression network module
NM-VPN/MP	Cisco 3620 and 3640/3640A network module (NM)-VPN/Mid Performance (MP)

**Table 4 Cisco 3600 WAN Interface Cards**

#### WAN Interface Cards

##### Serial WAN Interface Cards

WIC-1DSU-T1	One-port T1/fractional T1 with CSU/DSU
WIC-1T	One-port high speed serial
WIC-1DSU-56K4	One-port four-wire 56kbps with CSU/DSU
WIC-2T	Two-port high speed serial
WIC-2-A/S	Two-port async/sync serial

##### ISDN WAN Interface Cards

WIC-1B-S/T One-port ISDN BRI

WIC-1B-U One-port ISDN BRI with NT1

#### Digital Voice WAN Interface Cards

VWIC-1MFT-T1 One-port RJ-48 MultiFlex Trunk—T1

VWIC-2MFT-T1 Two-port RJ-48 MultiFlex Trunk—T1

VWIC-2MFT-T1-DI Two-port RJ-48 MultiFlex Trunk—T1 with Drop and Insert

VWIC-1MFT-E1 One-port RJ-48 MultiFlex Trunk—E1

VWIC-2MFT-E1 Two-port RJ-48 MultiFlex Trunk—E1

VWIC-2MFT-E1-DI Two-port RJ-48 MultiFlex Trunk—E1 with Drop and Insert Add not for VWICs Vic slots and WIC slots

Voice/WAN (VWIC) interface cards plug into the Voice slots in the High Density Voice Network Module or the WAN slots on the new Fast Ethernet mixed-media LAN/WAN network modules. Up to two VWIC interface cards can be installed on these network modules. The VWIC interface cards are not included in the price of the Fast Ethernet mixed-media network modules.

#### Analog Modem WAN Interface Cards

WIC-1AM One-port analog modem

WIC-2AM Two-port analog modem

#### DSL WAN Interface Cards

WIC-1ADSL One-port ADSL WAN Interface Card

WIC-1SHDSL One-port G.shdsl WAN Interface Card

WAN interface cards are available as daughter cards to the mixed-media LAN/WAN network modules. Up to two WAN interface cards can be installed on a single, mixed-media LAN/WAN network module. The WAN interface cards are not included in the price of the mixed-media network modules

**Table 5 Cisco 3600 Voice Interface Cards**

#### Voice Interface Cards

VIC-2FXS Two-port Voice Interface card—FXS

VIC-2FXO Two-port Voice Interface card—FXO

VIC-2E/M Two-port Voice Interface card—E&M

VIC-2FXO-M3 Two-port Voice Interface card—FXO (for Australia)

VIC-2FXO-EU Two-port Voice Interface card—FXO (for Europe)

VIC-2BRI-S/T-TE Two-port Voice Interface card—BRI (Terminal)

VIC-2DID	Two-port Direct Inward Dial trunk Voice Interface card
VIC-2BRI-NT/TE	Two-port ISDN BRI Voice Interface card, S/T interface, network termination or terminal equipment

Voice interface cards are available as daughter cards to the one and two-port Voice/Fax network modules. Up to two Voice interface cards can be installed on a single, Voice/Fax network module. The Voice interface cards are not included in the price of the mixed-media network modules

**Table 6 Cables for Network Modules**

Network Module Type	Cable Type	Product Number	Length	Male/Female
	V.35 DTE	CAB-V35MT	10 ft	Male
	V.35 DCE	CAB-V35FC	10 ft	Female
	RS-232 DTE	CAB-232MT	10 ft	Male
	RS-232 DCE	CAB-232FC	10 ft	Female
<b>NM-4A/S NM-8A/S (Up to 115.2 Async or 128 Kbps Async) NM-4T WIC-IT</b>	RS-449 DTE	CAB-449MT	10 ft	Male
	RS-449 DCE	CAB-449FC	10 ft	Female
	X.21 DTE	CAB-X21MT	10 ft	Male
	X.21 DCE	CAB-X21FC	10 ft	Female
	RS-530 DTE	CAB-530MT	10 ft	Male
<b>CT1/CE1 PRI</b>	MIP-CT1 DSX1 to DB15 cable	CAB-7KCT1DB15	—	—
<b>CT1/PRI</b>	RJ-45-RJ-45	CAB-T1-RJ-45	10 ft	Male
	E1-ISDN PRI	CAB-E1-PRI	10 ft	—
	E1 twinax 120-ohm balanced	CAB-E1-TWINAX	3 m	—
<b>CE1/PRI</b>	E1 DB15 120-ohm balanced	CAB-E1-DB15	5 m	—
	FSIP and MIP-CE1 BNC 75-ohm unbalanced	CAB-E1-BNC	5 m	—
<b>16/32 Async</b>	Eight port with RJ-45 ends	CAB-OCTAL-ASYNC	3.5 ft	Male RJ-45
	Eight port with 25 pin ends	CAB-OCTAL-MODEM	3.5 ft	Male RS-232

	Eight port RJ-45 + eight xMMOD	CAB-OCTAL-KIT	3.5 ft	Male RS-232
<b>CAB-OCTAL-ASYNC</b>	Adapter cable	CAB-25AS-MMOD	—	RJ-45-RS-232M
	Adapter cable	CAB-25AS-FDTE	—	RJ-45-RS-232F Female
<b>Voice WAN Interface Card Cable</b>	E1 Cable RJ45 to Dual BNC (Unbalanced)	CAB-E1-RJ45BNC	—	RJ-45—Dual BNC
	E1 Cable RJ45 to Twinax (Balanced)	CAB-E1-RJ45TWIN	—	RJ-45—Twinax
<b>Smart Serial Cable (or 12 in 1) Cables</b>		CAB-SS-V35MT(=)		
		CAB-SS-V35FC(=)		
		CAB-SS-232MT(=)		Male
		CAB-SS-232FC(=)		Female
		CAB-SS-449MT(=)		Male
		CAB-SS-449FC(=)		Female
		CAB-SS-X21MT(=)	—	Male
		CAB-SS-X21FC(=)		Female
		CAB-SS-530MT(=)		Male
		CAB-SS-530FC(=)		Female
		CAB-SS-530AMT(=)		
		CAB-SS-530AFC(=)		

**Table 7 Dimensions and Weight Specifications**

	<b>Cisco 3640/3640A</b>	<b>Cisco 3620</b>
<b>Width</b>	17.5 in. (44.5 cm)	17.5 in. (44.5 cm)
<b>Height</b>	3.44 in. (8.7 cm)	1.69 in. (4.3 cm)
<b>Depth</b>	15.75 in. (40.0 cm)	14.25 in. (36.2 cm)
<b>Weight (minimum)</b>	18 lb (8.18 kg)	14 lb (6.36 kg)
<b>Weight (maximum)</b>	23 lb (10.5 kg)	15 lb (6.8 kg)

**Table 8 Power Requirements**

<b>Cisco 3640/3640A</b>	<b>Cisco 3620</b>
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<b>Output, Watts</b>	140W Max	70W Max
<b>AC Input Voltage</b>	100 to 240 VAC	100 to 240 VAC
<b>Frequency</b>	47 to 64 Hz	47 to 64 Hz
<b>AC Input Current</b>	2 Amps	2 Amps
<b>DC Input Voltage</b>	-38V to -75V	-38V to -75V
<b>DC Input Current</b>	5 Amps	5 Amps

**Table 9 Environmental Specifications**

	<b>Cisco 3640/3640A</b>	<b>Cisco 3620</b>
<b>Operating Temperature</b>	32 to 104° F (0 to 40° C)	32 to 104° F (0 to 40° C)
<b>Nonoperating Temperature</b>	-13 to 158 F (-25 to 70° C)	-13 to 158 F (-25 to 70° C)
<b>Relative Humidity</b>	5 to 95%	5 to 95%
<b>Noise Level (Maximum)</b>	45 dbA	40 dbA

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