

# CISCO PRODUCTS QUICK REFERENCE GUIDE

JANUARY 2000

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## Overview

The *Cisco Products Quick Reference Guide* (CPQRG) is a handy, compact reference tool that details Cisco's product line. This guide includes product overviews, photos, when to sell sections, technical specifications, plus much more.

Cisco products are presented in the following categories:

- Routers and Access Products
- Switches and Hubs
- Security Products
- Internet Products
- ATM Products
- Network Management Products
- Service, Finance, and Other Programs

This book is published and printed in English three times a year and is regularly updated online at [www.cisco.com/go/guide](http://www.cisco.com/go/guide). (You must have a valid CCO login to view the online guide.)

If you have questions or comments regarding the contents or structure of the book, please send an e-mail to [guide@cisco.com](mailto:guide@cisco.com).

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If you have questions regarding the ordering process, please send an e-mail to [subscription@cisco.com](mailto:subscription@cisco.com).

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### What's New?

Changes since the last edition (August 1999) include the following:

- New Products
  - Cisco 1750
  - Cisco 6400 Series
  - Cisco 6700 Series
  - Cisco 7204VXR and 7206VXR
  - Cisco 12016
  - Cisco IP Telephones
  - Cisco Access Digital Gateways
  - Cisco Media Convergence Server 7830
  - Cisco CallManager

- Cisco Catalyst 3548 XL
- Cisco IP/VC
- CiscoWorks2000 Routed WANManagement Solution (includes ACL Manager,IPM, CiscoView, TrafficDirector, Resource Manager Essentials)
- CiscoWorks2000 Campus Bundle (includes CWSI Campus, CiscoView, TrafficDirector, Resource Manager Essentials)
- CiscoWorks2000 User Registration Tool
- Cisco Gigabit Ethernet Probes
- Cisco Element Management Framework (EMF)
- Cisco Info Center (CIC)
- Cisco Provisioning Center (CPC)
- Discontinued Products
  - Cisco 765M, 766M, and 771M
  - Cisco AS5200
  - Cisco 7202
- The following products have been renamed:
  - Cisco PIX Firewall is now Cisco Secure PIX Firewall
  - Cisco IOS Firewall Feature Set is now Cisco Secure Integrated Software
  - NetSonar is now Cisco Secure Scanner
  - NetRanger is now Cisco Secure Intrusion Detection System
  - Cisco Security Manager is now Cisco Secure Policy Manager

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## Cisco Systems Overview

Cisco Systems is the worldwide leader in networking for the Internet. Cisco's products and services give people access to the information they need by connecting information devices through intelligent, secure, and reliable networks. Our hardware and software products link computers so people have access to information, regardless of differences in time, place, or type of computer system. Customers benefit from Cisco networking solutions through more efficient exchange of information, which in turn leads to cost savings, process efficiencies, and closer relationships with customers, business partners, and employees.

Cisco solutions are the networking foundation of thousands of companies, universities, utilities, and government agencies worldwide. We are also a driving force behind the global Internet, where more than 80 percent of the backbone routers are from Cisco.

Cisco uses the Internet to conduct a substantial amount of its business. For example, we provide more than 70 percent of our customer support over the Internet while maintaining a high level of customer satisfaction. Our goal is to

help our customers improve their business by establishing interactive and engaging electronic business relationships with their global customers, partners, prospects, suppliers, and employees.

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## **The Cisco IOS Difference**

Cisco IOS software is the platform that delivers network services and enables networked applications. Cisco IOS software differentiates Cisco products from other industry alternatives. It is the unifying thread, the glue, that integrates components of our products. It solves security problems; it solves scalability problems; it even keeps unnecessary traffic off the WAN to reduce service costs. Cisco IOS technologies span across Cisco LAN and WAN system elements, ensuring interoperability, centralized manageability, and reliability.

### **Guaranteed Interoperability**

Cisco IOS software ensures interoperability among Cisco routers, switches, and hubs within the main office and Cisco remote site routers to simplify installation and management. Cisco IOS software protects users' investments by integrating all network platforms and by supporting LAN and WAN standards that allow interoperability with other vendors. This scenario enables the economical expansion of bandwidth and the adoption of new technologies while preserving the investment in the existing network infrastructure.

### **Unified Management**

Cisco IOS software provides an array of network management capabilities designed to meet the needs of today's distributed networks. Support for Simple Network Management Protocol (SNMP), Telnet, and Remote Monitoring (RMON) allow Cisco products to be managed from a central site, minimizing administrative costs and maximizing network uptime. A common network management application, CiscoWorks Windows provides an integrated and consistent graphical interface to ease management and troubleshooting of Cisco router, switches, and hub products.

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## **Cisco Connection Online (CCO) Login**

Cisco Connection Online (CCO) access is one of the many benefits available to Premier Partners and Cisco Resellers. Cisco Premier or Reseller level CCO access is required to use many valuable sales tools and privileged information on the Cisco Web site. Much of this information is not visible to you until you login.

To register your company as a Cisco Reseller, submit an online application located at [www.cisco.com/go/reseller](http://www.cisco.com/go/reseller). Contacts with valid email addresses will receive CCO access notification in three to five days. If you are a Cisco Reseller or Partner who buys through distribution and you do not have your login information, please send an email to [cdbadmin@cisco.com](mailto:cdbadmin@cisco.com) with your request.

# Cisco Contact Information

## Cisco Web Sites

## URL

### Sales Tools Central

Helpful, easy-to-use Web site with detailed product information, sales tools, sample configurations, and more.

<http://www.cisco.com/go/tools>

### Distribution Product Reference Guide (DPRG)

Complete list of pricing information, part numbers, and more for distribution (2-tier) products. Data is refreshed nightly. Available now in the US, coming soon to other countries. CCO login required.

<http://www.cisco.com/dprg>

### Worldwide Contacts

Cisco office locations; directions; maps; and sales, partners, and channel contacts.

<http://www.cisco.com/go/wwwcontacts>

### Worldwide Distributors Web Site

List, by country, of authorized Cisco Distributors who stock and resell Cisco products.

<http://www.cisco.com/go/disti>

### End-of-Life Web Site

Last order and end-of-life dates for Cisco products.

<http://www.cisco.com/go/eol>

### Technical Support

For customer support tips, software center, online documents, and more.

<http://www.cisco.com/go/support>

### Cisco Products Quick Reference Guide

This guide is available on line (in PDF and HTML); it is continually updated between tri-yearly printings. CCO login required.

<http://www.cisco.com/go/guide>

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<http://www.cisco.com/go/subscription>

### Year 2000 Resources for Partners & Resellers

This site includes general Y2K information and programs, links to product compliance and migration information, and downloadable Y2K assessment tools

<http://www.cisco.com/go/y2ktool>

## FaxBack Systems

## Phone Number

### Product Information FaxBack System

For data sheets, overviews, white papers, and more to fax to you or your end users.

800 770-4866 (within U.S.)

650 596-4488 (outside U.S.)

### Technical Support FaxBack System

For sample configurations, troubleshooting tips, and more to fax to you or your end users.

888 502-4726 (within U.S.)

650 596-4408 (outside U.S.)

## Customer Helplines

## Contact Information

### Presales—Reseller Helpline

800 553-6387 (within U.S.)

408 526-7208 (outside U.S.)

reseller-help@cisco.com (e-mail)

[www.cisco.com/go/presaleshelp](http://www.cisco.com/go/presaleshelp)

### Post-Sales—Technical Assistance Center (TAC)

800 553-2447 (within U.S.)

408 526-7209 (outside U.S.)

408 526-8898 (fax)

tac@cisco.com (e-mail)

# Cisco Routers and Access Products at a Glance

<b>Product</b>	<b>Features</b>	<b>Page</b>
<b>Cisco 700 Series</b>	ISDN router <ul style="list-style-type: none"> <li>• 1-port BRI (optional NT1); optional 2 analog telephone ports</li> </ul> Supports up to 30 users Integrated 4-port Ethernet hub (on 77x models)	17
<b>Cisco 800 Series</b>	ISDN IDSL, and serial routers with Cisco IOS technologies <ul style="list-style-type: none"> <li>• 1-port BRI (optional NT1) or 1-port serial</li> <li>• Optional 4-port Ethernet hub and 2 analog telephone ports (ISDN models)</li> <li>• Advanced security features</li> </ul>	20
<b>Cisco 1000 Series</b>	Fixed-configuration desktop access router <ul style="list-style-type: none"> <li>• 1-port Ethernet</li> <li>• 1-port BRI (optional NT1) or 1-port sync or async serial</li> </ul>	23
<b>Cisco 1400 Series</b>	ADSL routers <ul style="list-style-type: none"> <li>• Either 1-port Ethernet (10BaseT) and 1-port ATM-25 (1401) or 1-port Ethernet (10BaseT) and 1-port ADSL (DMT-2)(1417)</li> <li>• Designed for DSL access up to 8 Mbps</li> <li>• Part of Cisco's end-to-end DSL solutions</li> </ul>	26
<b>Cisco 1600 Series</b>	Modular desktop access router <ul style="list-style-type: none"> <li>• 1- or 2-port Ethernet (10BaseT)</li> <li>• 1-port BRI (optional NT1) or 1-port sync or async serial</li> <li>• 1 WAN interface card (WIC) slot</li> </ul>	28
<b>Cisco 1700 Series</b>	Flexible, secure, modular access routers <ul style="list-style-type: none"> <li>• 1-port autosensing 10/100 Fast Ethernet LAN</li> <li>• Modular slots support a wide variety of WAN and analog voice interface cards</li> <li>• Supports secure Internet, intranet, and extranet access as well as new WAN applications including VPNs, integrated voice/data (VOIP), and broadband services</li> </ul>	31
<b>Cisco 2500 Series</b>	Fixed and modular configuration access routers and servers <ul style="list-style-type: none"> <li>• Single or dual LAN; Ethernet or Token Ring</li> <li>• Router/hub or access server</li> <li>• Single, dual serial, or high-density serial models</li> </ul>	35
<b>Cisco 2600 Series</b>	Modular access router, voice data gateway, and dial access server <ul style="list-style-type: none"> <li>• Single or dual LAN (Ethernet, 10/100 Mbps Ethernet, Token Ring and mixed Ethernet, and Token Ring options)</li> <li>• Shares WAN interface cards and network modules with Cisco 1600, 1700, and 3600 series</li> <li>• Wide variety of media support, including async and sync serial, ISDN, Fractional and channelized T1/E1, Ethernet, analog modems, and ATM</li> </ul>	40
<b>Cisco 3300 Series</b>	Carrier-class SONET access device <ul style="list-style-type: none"> <li>• Fully redundant platform</li> <li>• Combines SONET reliability and layer three awareness</li> <li>• Ethernet interfaces support a variety of service interfaces that can be configured for bridging or routing, and connect to a local LAN via 10BaseT to a hub, switch, or router</li> </ul>	46
<b>Cisco 3600 Series</b>	Modular, high-density access router <ul style="list-style-type: none"> <li>• 2-, 4-, and 6-slot models</li> <li>• Wide variety of media support, including async and sync serial, ISDN, channelized T1/E1, Ethernet, Fast Ethernet, Token Ring, digital modems, and ATM</li> <li>• Voice/fax over IP or Frame Relay</li> </ul>	48
<b>Cisco MC3810</b>	Compact, low-cost, multiservice access concentrator <ul style="list-style-type: none"> <li>• 1-port Ethernet and 2-ports serial</li> <li>• 6-ports analog or 24/30-ports digital voice</li> <li>• Data, voice, and video integration</li> </ul>	54
<b>Cisco 4000 Series</b>	Modular, high-density router <ul style="list-style-type: none"> <li>• 3 slots for all models</li> <li>• Choice of 100-MHz or 133-MHz processor</li> <li>• Wide variety of media support, including async and sync serial, ISDN, channelized T1/E1, Ethernet, Fast Ethernet, Token Ring, FDDI, HSSI, and ATM</li> </ul>	57
<b>Cisco AS5300 Series</b>	Hybrid async and ISDN access servers <ul style="list-style-type: none"> <li>• 3 network interface card slots</li> <li>• 4- and 8-ports PRI (T1/E1) and 4-ports serial</li> <li>• Up to 240 integrated modems</li> </ul>	61

<b>Product</b>	<b>Features</b>	<b>Page</b>
<b>Cisco AS5300/Voice Gateway</b>	High performance T1/E1 VoIP Gateway <ul style="list-style-type: none"> <li>• 4 T1/E1 ports (96/120 voice/fax channels) and 4-ports serial</li> <li>• One 10/100 Fast Ethernet, and one 10 Base T Ethernet</li> <li>• G.711, G.729, G.729a, G.723.1, G.726, G.728 voice CODECs, and 14.4 kbps Group III fax relay</li> </ul>	65
<b>Cisco AS5800 Series</b>	High-end dial products <ul style="list-style-type: none"> <li>• Hybrid, asynchronous and ISDN termination</li> <li>• Accommodate both mobile and high-bandwidth requirements</li> </ul>	67
<b>Cisco 6400 Series</b>	A carrier-class aggregation device for termination of large number of subscribers and multidomain services in a POP or central office <ul style="list-style-type: none"> <li>• Up to 14,000 subscriber termination per platform</li> <li>• L2TP, LAC/LNS, multidomain services</li> <li>• Full ATM capability</li> </ul>	69
<b>Cisco 6700 Series</b>	Integrated access platform for circuit switched and packet-based voice/data traffic <ul style="list-style-type: none"> <li>• Modular, scalable, high-density platform that delivers end-to-end integrated voice and data services</li> <li>• 5 line card slots for RT and CPE applications (Cisco 6705)</li> <li>• 32 line card slots for CO and RT applications (Cisco 6732)</li> </ul>	72
<b>Cisco 7100 Series</b>	Large branch and central site VPN/WAN-edge router <ul style="list-style-type: none"> <li>• Comprehensive suite of VPN services, including encryption, tunneling, firewall, and bandwidth management</li> <li>• Embedded I/O for ease of deployment</li> <li>• Service module slot for IPsec and PPTP encryption coprocessing</li> </ul>	74
<b>Cisco 7200 Series</b>	High-performance, high-density, modular, central site router <ul style="list-style-type: none"> <li>• Fully modular, chassis-based</li> <li>• 4- or 6-slot models and choice of three system processors</li> <li>• Wide variety of LAN and WAN options, including Ethernet, Fast Ethernet, 100VG-Any LAN, Token Ring, FDDI, serial, ISDN, HSSI, ATM, Packet over DS3/E3</li> </ul>	78
<b>Cisco 7500 Series</b>	Premier high-end platform of multiprotocol routers <ul style="list-style-type: none"> <li>• 1- or 2-CyBus models offering 1 or 2 Gbps backplanes</li> <li>• 5-, 7-, and 13-slot models</li> <li>• Wide variety of LAN and WAN options including Ethernet, Fast Ethernet, 100VG-Any LAN, Token Ring, FDDI, serial, ISDN, HSSI, ATM, packet over DS3/E3</li> </ul>	83
<b>Cisco 12000 Series</b>	Scalable gigabit switch router (GSR) <ul style="list-style-type: none"> <li>• 8-, 12-, or 16-slot models</li> <li>• 40, 60, or 80 Gbps Switching Fabric, depending on model</li> <li>• Optimized for IP</li> <li>• Carrier class</li> </ul>	87
<b>Cisco IP Telephones</b>	Full-featured telephone that can be plugged directly into a standard 10BaseT Ethernet connection <ul style="list-style-type: none"> <li>• Easy to program and easy to use phones</li> <li>• Integrated Ethernet repeater</li> </ul>	89
<b>Cisco Access Digital Gateways</b>	Digital conversion gateways that enable IP telephones to send and receive telephone calls to and from the outside world <ul style="list-style-type: none"> <li>• Models that support up to 23 or 30 simultaneous compressed calls</li> <li>• Fully manageable by Cisco CallManager</li> </ul>	91
<b>Cisco Media Convergence Server 7830</b>	High availability server platform for Cisco desktop IP telephony systems <ul style="list-style-type: none"> <li>• Turnkey solution</li> <li>• Powerful enough for large enterprise IP telephony deployments</li> </ul>	93
<b>Cisco CallManager</b>	A suite of integrated voice applications <ul style="list-style-type: none"> <li>• Call-processing software component of the Cisco Architecture for Voice, Video, and Integrated Data network</li> <li>• Solution for small, medium, and large telephony networks</li> </ul>	95

# Cisco Routers and Access Products Port Matrix

	Cisco 700 Series	Cisco 800 Series	Cisco 1000 Series	Cisco 1400 Series	Cisco 1600 Series	Cisco 1700 Series	Cisco 2500 Series	Cisco 2600 Series	Cisco 3600 Series	Cisco MC3810	Cisco 4000 Series	Cisco AS5300	AS5300/Voice Gateway	Cisco AS5800	Cisco 6700 Series	Cisco 7100 Series	Cisco 7200 Series	Cisco 7500 Series	Cisco 12000 Series
Fixed Ports Only	X	X	X	X						X									
Fixed & Modular Ports					X	X	X	X	1			X	X	X		X			
Modular Ports Only									2		X				X		X	X	X
<b>LAN Ports</b>																			
10-MB Ethernet	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	X	X	X	
10-MB Ethernet (fiber)									X					X		X	X	X	
100-MB Ethernet						X		X	X		X			X		X	X	X	
100-MB Ethernet (fiber)									X					X		X	X	X	X
10/100-MB Eth					X		X	X			X	X				X			
Integrated Eth. Hub	X	X					X												
100 VG														X			X	X	
Token Ring							X	X	X		X			X		X	X	X	
FDDI/CDDI											X			X		X	X	X	
ATM								X	X	X	X			X	4		X	X	X
Gigabit Ethernet																		X	X
<b>WAN Ports</b>																			
Sync Serial		X	X		X	X	X	X	X	X	X	X	X	X	5		X	X	
Sync Serial w/ CSU					X	X	X	X	X	X									
ISDN BRI (S/T)	X	X	X		X	X	X	X	X	X				X		X	X		
ISDN BRI (U)	X	X	X		X	X	X	X	X					X	X	X	X		
ISDN PRI/Ch T1							X	X	X	X	X	X	X	X	X	X	X	X	
ISDN PRI w/ CSU							X	X	X		X	X	X				X	X	
Async			X		X	X	X	X	X	X				X					
POTS	X	X													X				
Integrated Modems							X	X			X			X					
HSSI								X		X				X		X	X		
DS3										X				X	X	X	X		X
ATM OC-3								X		X				X	4		X	X	X
ATM OC-12																			X
ATM				X			X	X	X	X				X	4		X	X	X
ATM - T1/E1							X	X	X					X	6	X			
SONET														X	7		X	X	8
ADSL				X															
DPT																		X	X
<b>Voice Ports</b>																			
Analog	X	X				X	X	X	X										
Digital							X	X	X		X	X	X		X	X			

- Cisco 3660 only.
- Cisco 3620 and 3640.
- Ethernet port is provided for network connection of the 6700 Series product only. No user services are currently supported via Ethernet.
- ATM over TDM (proprietary AAL1) with current 6700 Series products; does not support QoS and other advanced features.
- Sync serial is V35 port available on T1 plug-in card.
- Supported through HDLU.
- SONET requires external multiplexer to provide access to optical SONET network; product does not interface directly to SONET network; no SONET ring support; SONET requires OC3c or STS-1 cards.
- Supports Cisco-developed Packet over SONET (POS).

## Memory Information for Distribution Routers

Router	Memory Type	Slots	Default Memory	Max Memory	Default Configuration Notes
700 Series	Flash	0	1 MB	1 MB	
	DRAM	1	1.5 MB (On board)	2 MB	
801 - 804	Flash	1	8 MB	12 MB	4 MB On board + 4 MB Mini Flash
	DRAM	1	4 MB (On board)	12 MB	
805	Flash	1	4 MB	12 MB	
	DRAM	1	8 MB (On board)	16 MB	4 MB On board + 4 MB Mini Flash
1000 Series	Flash (PCMCIA)	1	2 MB	4 MB	Flash is optional
	DRAM	1	8 MB	8 MB	
1600 Series	Flash	1	4 MB	16 MB	
	DRAM	1	8 MB (On board)	24 MB	
1700 Series (base models)	Flash	1	4 MB	16 MB	Uses Mini Flash
	DRAM	1	16 MB (On board)	48 MB	
2500 Series	Flash	2	8 MB	16 MB	Slot 0 = 8 MB
	DRAM	1	4 MB	16 MB	
2600 Series	Flash	1	8 MB	16 MB	Slot 0 = 8 MB
	DRAM	2	24 MB	64 MB	Slot 0 = 16 MB; Slot 1 = 8 MB
3620	Flash (PCMCIA)	2	0	32 MB	
	Flash (SIMM)	2	8 MB	32 MB	Slot 0 = 8 MB
	DRAM	4	32 MB	64 MB	Slot 0 = 16 MB; Slot 1 = 16 MB
3640	Flash (PCMCIA)	2	0	32 MB	
	Flash (SIMM)	2	8 MB	32 MB	Slot 0 = 8 MB
	DRAM	4	32 MB	128 MB	Slot 0 = 16 MB; Slot 1 = 16 MB
3660	Flash (PCMCIA)	2	0	32 MB	
	Flash (SIMM)	2	8 MB	64 MB	
	SDRAM	2	32 MB	256 MB	
3810	Flash	1	8 MB	16 MB	
	DRAM	1	32 MB	32 MB	
4500 / 4700	Flash	2	4 MB	16 MB	Slot 0 = 4 MB
	DRAM	2	16 MB	32 MB (4500-M) 64 MB (4700-M)	Slot 0 = 8 MB; Slot 1 = 8 MB (DRAM must be in pairs)
	Shared	1	4 MB	16 MB	Slot 0 = 4 MB
	Boot Helper	1	4 MB	16 MB	
AS5300	System Flash	2	16 MB	16 MB	Slot 0 = 8 MB
	DRAM	2	64 MB	128 MB	Slot 0 = 32 MB; Slot 1 = 32 MB
	Shared	1	16 MB	16 MB	
	Boot Flash	1	8 MB	8 MB	
AS5300/Voice Gateway	Flash	2	16 MB	16 MB	Slot 0 = 8 MB
	DRAM	2	64 MB	64 MB	Slot 0 = 32 MB
	Shared		16 MB	16 MB	
	Boot Flash		8 MB	8 MB	
AS5800 Access Server/Voice Gateway	Flash (PCMCIA)	1	16 MB	40 MB	
	Flash (internal)	1	4 MB	4 MB	
	Shared (NPE-200)		4 MB		
	Shared (NPE-300)		32 MB		
	DRAM (NPE-200)		128 MB	128 MB	
	DRAM (NPE-300)		256 MB	256 MB	
7100 Series	Flash (PCMCIA)	2	40 MB	110 MB	Slot 0 = 40 MB
	System SDRAM	2	64 MB	256 MB	Slot 0 = 64 MB
	Packet SDRAM		64 MB	64 MB	
7200 Series	Flash (PCMCIA)	2	16 MB	110 MB	
	Flash (internal)	1	4 MB	4 MB	
	Shared (NPE-150)		1 MB		
	Shared (NPE-200)		4 MB		
	Shared (NPE-300)		32 MB		
	DRAM (NPE-150/200)	4	64 MB	128 MB	Slots 0-3 = 8 MB DIMMs
	DRAM (NPE-300)	4	64 MB	256 MB	

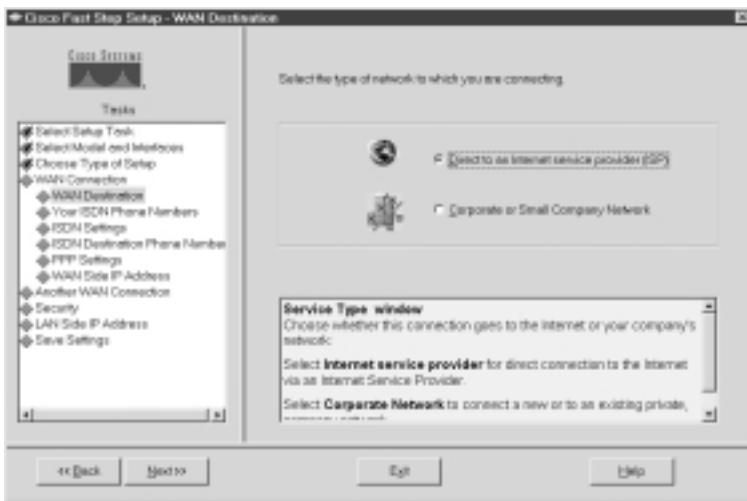
## Cisco Routers and Access Products Overview

Cisco's full line of routers ranges from home office access routers to central site access servers. The scope of Cisco's products supports a significant number of solution scenarios.

### Ease of Use

Cisco's router configuration tools make it easy for end users, network administrators, resellers and consultants to install Cisco routers.

Cisco FastStep is an easy-to-use Microsoft Windows 95-, 98-, and NT 4.0-based software tool that simplifies the setup, monitoring, and troubleshooting of Cisco routers for small office and home office users. Cisco FastStep leads the user through a step-by-step, wizards-based procedure that simplifies the configuration of a Cisco router connected to an Internet Service Provider (ISP) or remote corporate network. A user can set up a Cisco 700, 800, or 1600 series router with FastStep software.



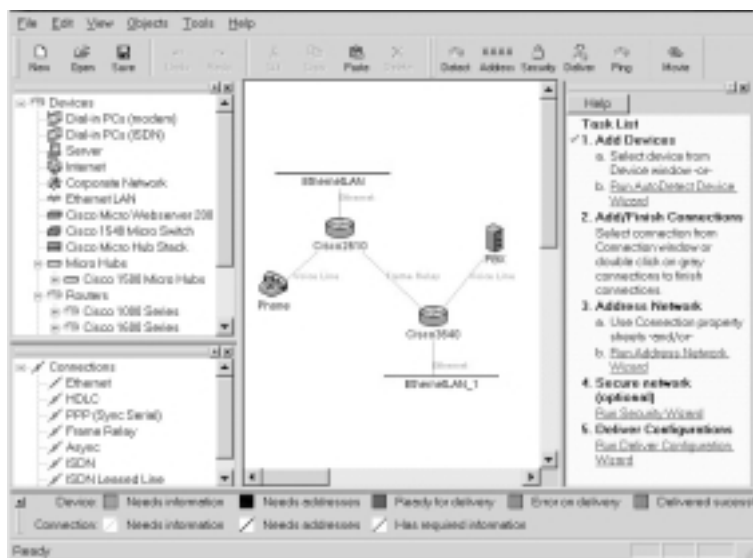
FastStep uses a graphical display of the process and a help box to lead the user through setting up the router.

FastStep software is available (no login required) from the CCO Software Center, or on a separate CD-ROM located in every accessory kit for supported products. For more information, see the Cisco FastStep Web site at <http://www.cisco.com/go/faststep>.

Cisco ConfigMaker is designed to configure a small to medium network of Cisco routers, switches, hubs, and other network devices from a single PC. Cisco ConfigMaker is an easy-to-use Microsoft Windows 95, 98, and NT 4.0-based software tool. Cisco ConfigMaker is designed for resellers, consultants, and network administrators who are proficient in LAN and WAN fundamentals and basic network design.

For fast and efficient configuration of Ethernet networks and WAN connectivity, Cisco ConfigMaker prompts users through the setup process. Online WAN configuration worksheets list important information that the network administrator must obtain from the Internet service provider or WAN service provider before configuring the devices. To configure devices:

- The user drags and drops devices and connections from the palette to create a network topology diagram.
- Individual devices and connections are configured using the task wizards and information collected using the worksheets.
- Configurations are downloaded to the appropriate devices from a standalone PC or over the network.



The ConfigMaker graphical user interface displays a network diagram that shows the network devices in relationship to each other. Wizards are accessed from the Task List, which keeps track of progress.

ConfigMaker supports 800, 1600, 1700, 2500, 2600, 3600, and 4500/4700 routers, switches, and the Cisco IOS Firewall Feature Set. Check documentation for more details on specific modules and models supported. No previous experience with the Cisco IOS® software command line interface is required. ConfigMaker is available (no login required) from the CCO Software Center, or on a separate CD-ROM located in every Software Feature Pack for supported products. For more information, See the Cisco Configmaker Web site at <http://www.cisco/go/configmaker>

## Bandwidth Optimization

Cisco IOS technologies deliver bandwidth optimization with these features:

- **Multichassis Multilink PPP**—A Cisco IOS value-added feature that allows you to stack multiple Cisco NASs and configure them as a single, logical dial-in entity for multilink PPP; allows multilink member links to terminate to separate physical NASs while still being treated by the IOS as a single multilink bundle, thereby allowing the administrator to share NAS links to the PSTN more cost effectively (no need to provision separate NASs for multilink users)
- **Bandwidth Allocation Protocol (BACP)**—an enhancement for PPP that allows the administrator to control the admission of new links in a multilink PPP bundle
- **Callback**—a wide range of support for MS callback, ISDN callback, PPP standard callback, Caller ID callback, and Dialer callback
- **Dial-on-demand routing (DDR)**—minimizes ownership cost by allowing a router to automatically initiate and close a circuit-switched session
- **Bandwidth on demand (BOD)**—dynamically increases network throughput by allowing a router to automatically establish a new, load-sharing connection to the destination, in response to a definable load level
- **Snapshot routing**—a routing update mechanism that minimizes ownership costs by eliminating the need for configuring and maintaining large static tables, allowing dynamic routing protocols to be used on DDR lines
- **Virtual bandwidth reservation and priority queuing**—enhances throughput by reserving bandwidth and prioritizing traffic based on the type of application, its source, or its destination
- **IPX® Protocol spoofing**—optimizes Novell networking by responding to a server's Watchdog requests on behalf of a remote client
- **Cisco IOS compression solutions**—accomplished with header compression for TCP/IP, per-interface compression (one set of dictionaries per hardware link), and per-virtual circuit compression (one set of dictionaries per compressed virtual circuit)

## Security

Cisco's powerful suite of security technologies includes:

- **Network Address Translation (NAT) and Port Address Translation (PAT)**—hides private topology and IP addresses from an external network
- **Digital Signature Standard (DSS) and digital certification**—positively authenticates users or devices
- **IPSec**—enables secure communications of data over public networks
- **Time-based Access Control Lists (ACLs)**—implements access lists based on time of day
- **Password Authentication Protocol (PAP)**—allows a remote node to establish its identity using a two-way handshake

- Terminal Access Controller Access Control System Plus (TACACS+) and Remote Access Dial-in User Service (RADIUS)—gives complete network access security for dial-in connections
- Challenge Handshake Authentication Protocol (CHAP)—allows a remote node to establish its identity using a three-way handshake
- Calling line identification—uses calling line identification to compare the ISDN number of a calling device against a list of known callers
- Access lists—checks source address of packets (standard access lists) and checks source and destination addresses and other parameters (extended access lists)
- Context-based access control (CBAC)—provides secure, application-based stateful filtering for the most popular protocols and a wide variety of advanced applications; available in the Cisco IOS Firewall feature set

### Multimedia Features

Cisco IOS network services that support multimedia applications with multimedia and multicast capabilities include:

- RSVP—dynamically reserves end-to-end bandwidth for delay-sensitive IP traffic
- IP Multicast-Protocol Independent Multicast (PIM)—a multicast protocol that can be used in conjunction with all unicast IP routing protocols
- Internet Group Management Protocol (IGMP)—indicates to the router if any hosts on a given physical network belong to a multicast group
- AppleTalk Simple Multicast Routing Protocol (SMRP)—provides connectionless, best-effort delivery of multicast datagrams

### Quality of Service

Cisco IOS quality-of-service network services readily support bandwidth-intensive traffic:

- Committed Access Rate (CAR)—performs two QoS functions:
  - Bandwidth management through rate limiting, which allows you to control the maximum rate for traffic transmitted or received on an interface
  - Packet classification through IP precedence and QoS group setting, which allows you to partition your network into multiple priority levels or classes of service (CoS)
- Resource Reservation Protocol (RSVP)—establishes priority bandwidth allocation
- Weighted Fair Queuing (WFQ)—adds new levels of control to previous queuing methods
- Random Early Detection (RED)—monitors traffic levels on very large networks to prevent congestion and guarantee priority traffic delivery
- Cisco IOS technologies that manage resource allocation include PIM, Private Network-Network Interface (PNNI), and available bit rate (ABR)

## Cisco 700 Series

The Cisco 700 series ISDN router provides affordable, fast Internet access for every PC in a small office or home-based business of up to five users.

Small offices that want to provide Internet access for every PC can use a single

Cisco 700 and ISDN line, instead of multiple modems or TAs and multiple phone lines. Companies who choose to upgrade to ISDN with a Cisco 700 series router will increase productivity and reduce overall cost of ownership.




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### When to Sell

#### Sell This Product

**Cisco 761M, 762M**

#### When a Customer Needs These Features

- Built-in NT1 for U.S. and Canada (Cisco 762M)
- Two plain old telephone service (POTS) interfaces to allow standard telephone, fax, or modem to share ISDN line

**Cisco 775M, 776M**

- Internet access for home-based businesses
- A cost-effective, 10BaseT, unmanaged hub
- Built-in NT1 for U.S. and Canada (Cisco 776M)
- Two POTS interfaces to allow standard telephone, fax, or modem to share ISDN line (Cisco 776M)

**Cisco 761M-1CAPI,  
775M-1CAPI**

- CAPI 2.0 applications and access to leading Internet Service Providers and online services including faxing, e-mail, and banking

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### Key Features

- FastStep v1.3 wizard-based software enables efficient installation of Cisco 700 series routers connected to a PC running Windows 95 or NT
- Optional 4-port hub and 2 POTS ports for all-in-one device supporting fax, phone, and up to 30 PCs (recommended for up to 5 users)
- Standard security features include PAP, CHAP, PPP dialback, caller ID, and access lists, and provide more security than a modem or TA
- Dynamic Host Configuration Protocol (DHCP) relay agent and server for dynamic addressing of attached workstations
- NAT creates private network with hidden addresses
- Two B-channels for phone or data with automatic B-channel aggregation with Multilink PPP; X.25 supported over the D channel
- Reduces recurring ISDN usage charges with bandwidth optimization features such as compression, Bandwidth-on-Demand, Dial-on-Demand, and X.25 over D channel

## Specifications

### Cisco 760 Series

Feature	Cisco 761	Cisco 762
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet (10BaseT)	1-port Ethernet (10BaseT)
<b>Fixed WAN Ports (connections)</b>	1-port ISDN BRI (S/T)	1-port ISDN BRI (U)
<b>Modular Slots</b>	None	None
<b>Processor Speed (type)</b>	25-MHz (80386)	25-MHz (80386)
<b>Flash Memory</b>	1 MB	1 MB
<b>DRAM Memory</b>	1.5 MB (default) 2 MB (max)	1.5 MB (default) 2 MB (max)
<b>Dimensions (HxWxD)</b>	1.6 x 8.3 x 9 in.	1.6 x 8.3 x 9 in.
<b>Service Category</b>	1	1

### Cisco 770 Series

Feature	Cisco 772M	Cisco 775	Cisco 776M
<b>Fixed LAN Ports (connections)</b>	4-port Ethernet hub (10BaseT)	4-port Ethernet hub (10BaseT)	4-port Ethernet hub (10BaseT)
<b>Fixed WAN Ports (connections)</b>	1-port ISDN BRI (U)	1-port ISDN BRI (S/T) 2-port POTS	1-port ISDN BRI (U) 2-port POTS
<b>Modular Slots</b>	None	None	None
<b>Processor Speed (type)</b>	25-MHz (80386)	25-MHz (80386)	25-MHz (80386)
<b>Flash Memory</b>	1 MB	1 MB	1 MB
<b>DRAM Memory</b>	1.5 MB (default) 2 MB (maximum)	1.5 MB (default) 2 MB (maximum)	1.5 MB (default) 2 MB (maximum)
<b>Dimensions (HxWxD)</b>	1.6 x 8.3 x 9 in.	1.6 x 8.3 x 9 in.	1.6 x 8.3 x 9 in.
<b>Service Category</b>	1	1	1

## Competitive Products

- 3Com: Office Connect LAN Modem
- AVM: ISDN cards with KENI or Network Distributed ISDN software; ISDN cards with NetWare MultiProtocol Router for ISDN or MPR for ISDN Router Manager
- Bay: Nautica 200 or 250
- Bay: NetGear RT328 or RH348
- Intel: Express ER8011
- Netopia: R3100-UP or R3100U
- Zyxel: Presige 100, 1001H, or 128 Plus

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## Cisco IOS Software and Memory Requirements

The Cisco 700 Series ships with the latest version of Cisco IOS software. No Feature Packs are needed.

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### Distribution Part Numbers and Ordering Information

#### Cisco 700 Series Router Chassis<sup>1</sup>

CISCO761M	ISDN Router
CISCO775M	ISDN Router w/ 4-port Hub, 2 POTS (U.S., MX)
CISCO776M	ISDN Router w/ NT-1, 2 POTS, w/ 4-port Hub (U.S.)
CISCO761M-1CAPI	1-port 10bT, 1-port BRI (S/T), 1-user CAPI
CISCO775M-1CAPI	4-port 10bT Hub, 1-port BRI (S/T), 2 POTS ports, 1-user CAPI
CISCO775M-G1	ISDN Router w/ 4-port Hub, 2 POTS (CA, NL, TW, SG, KO)
CISCO775M-G2	ISDN Router w/ 4-port Hub, 2 POTS (EURO, AU, HK)
CISCO776M-G1	ISDN Router w/ NT-1, 2 POTS, w/ 4-port Hub (CA.)

#### Cisco 700 Series Memory Options

MEM760-512D=	Cisco 700 Series 0.5 MB DRAM Memory
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#### Cisco 700 Series Software Upgrades

CD700-1CAPI-4.4=	Cisco 700 1-user Remote CAPI Software
CD700-5CAPI-4.4=	Cisco 700 5-user Remote CAPI Software

#### Cisco 700 Series Accessories

CAB-760-CON=	Cisco 700 Series Console Cable
PWR760-770=	Cisco760-770 Family AC Power Supply - Spare

#### Cisco 700 Series Basic Maintenance

CON-SNT-PKG1	Cisco 700 Series SMARTnet (8 x 5 x NBD)
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1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco 700 Series Web site: <http://www.cisco.com/go/700>

## Cisco 800 Series

The Cisco 800 series router provides enhanced network security and proven reliability through the power of Cisco IOS software tailored for small offices and telecommuters. It is



recommended for small offices of up to 20 users, connecting every user to the Internet or to the corporate LAN via one ISDN, IDSL, or serial connections (up to 512 Kbps). Those who will especially benefit from the Cisco 800 series routers are companies who have invested in Cisco IOS software at the head-end and want to add telecommuters; service providers who offer value-added services to small offices; and VARs who are familiar with Cisco IOS software and want a fast, profitable way to service small office customers.

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### When to Sell

#### Sell This Product

##### Cisco 801

##### Cisco 802

##### Cisco 803

##### Cisco 804

##### Cisco 805

#### When a Customer Needs These Features

- 1 Ethernet and 1 ISDN Basic Rate Interface (BRI) S/T (for outside North America)
- 1 Ethernet and 1 ISDN BRI U (for North America)
- 4-port shared Ethernet hub, 2 analog POTS, and 1 ISDN BRI S/T (for outside North America)
- 4-port shared Ethernet hub, 2 analog POTS, and 1 ISDN BRI U (for North America)
- 1 Ethernet and 1 serial WAN port for Frame Relay, leased line (up to 512 Kbps), or async dial-up access

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### Key Features

- Supports Cisco IOS software—the industry standard software that powers 80 percent of the Internet
- Standard security with access control lists, PAT/NAT, PAP/CHAP, MS-CHAP, Lock and Key, and Generic Routing Encapsulation (GRE) tunneling
- Enhanced security with optional Cisco IOS Firewall and IPSec encryption
- Optional integrated 4-port hub and 2 analog POTs (802 and 804) for low cost of ownership with all-in-one capability with data, phone, and fax over one ISDN line
- Reduces recurring ISDN usage charges on Cisco 801-804 with bandwidth optimization features such as compression, Bandwidth-on-Demand, Dial-on-Demand, Always-On-Dynamic-ISDN (AODI), and X.25 over D channel
- Ease of use with FastStep v2.0 installation and monitoring software and ConfigMaker, color-matching cables, and dynamic IP addressing
- Frame Relay, leased line (up to 512 Kbps), and asynchronous dial-up connections (805)
- IDSK connections up to 144 Kbps and up to 512 Kbps with compression

## Specifications

Feature	Cisco 801	Cisco 802	Cisco 803	Cisco 804	Cisco 805
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet (10BaseT)	1-port Ethernet (10BaseT)	4-port Ethernet hub (10BaseT)	4-port Ethernet hub (10BaseT)	1-port Ethernet (10BaseT)
<b>Fixed WAN Ports (connections)</b>	1-port ISDN BRI (S/T)	1-port ISDN BRI (U) NT-1	1-port ISDN BRI (S/T) 2 analog telephone ports	1-port ISDN BRI (U) NT-1 2 analog telephone ports	1-port serial (up to 512 Kbps)
<b>Modular Slots</b>	None	None	None	None	None
<b>Processor Speed (type)</b>	33 MHz (MPC 850)	33 MHz (MPC 850)	33 MHz (MPC 850)	33 MHz (MPC 850)	33 MHz (MPC 850)
<b>Flash Memory</b>	8 MB (default) 12 MB (maximum)	8 MB (default) 12 MB (maximum)	8 MB (default) 12 MB (maximum)	8 MB (default) 12 MB (maximum)	4 MB (default) 12 MB (maximum)
<b>DRAM Memory</b>	4 MB (default) 12 MB (maximum)	4 MB (default) 12 MB (maximum)	4 MB (default) 12 MB (maximum)	4 MB (default) 12 MB (maximum)	8 MB (default) 16 MB (maximum)
<b>Power Supply</b>	External	External	External	External	External
<b>Dimensions (HxWxD)</b>	2.0 x 9.9 x 8.3 in.	2.0 x 9.9 x 8.3 in.	2.0 x 9.9 x 8.3 in.	2.0 x 9.9 x 8.3 in.	2.0 x 9.9 x 8.3 in.
<b>Service Category</b>	1	1	1	1	1

## Competitive Products

- 3Com: Office Connect Remote 511/521
- Ascend: Pipeline 75/85
- Bay: Nautica 250
- Intel: Express 8100

## Cisco IOS Software and Memory

In distribution, the Cisco 801 - 804 ship with

In distribution, the Cisco 805 ships with

8-MB Flash memory

4-MB Flash memory

4-MB DRAM memory

8-MB DRAM memory

To run the Cisco IOS Feature Packs, you need, at a minimum, the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required <sup>1</sup>	DRAM Memory Required <sup>1</sup>
<b>Cisco 801-804 ISDN Routers</b>				
CD08-C-12.0.5=	IP	12.0(5)T or 12.0(4)XM	8 MB	4 MB
CD08-CP-12.0.5=	IP Plus	12.0(5)T or 12.0(4)XM	8 MB	4 MB
CD08-BP-12.0.5=	IP/IPX Plus	12.0(5)T or 12.0(4)XM	8 MB	4 MB
CD08-CH-12.0.5=	IP/FW	12.0(5)T or 12.0(4)XM	8 MB	<b>8 MB</b>
CD08-CHP-12.0.5=	IP/FW Plus	12.0(5)T or 12.0(4)XM	8 MB	<b>8 MB</b>
CD08-CHL-12.0.5=	IP/FW Plus IPsec56	12.0(5)T or 12.0(4)XM	8 MB	<b>8 MB</b>
CD08-BHL-12.0.5=	IP/IPX/FW Plus IPsec56	12.0(5)T or 12.0(4)XM	8 MB	<b>8 MB</b>
<b>Cisco 805 Serial Router</b>				
CD08-C-12.0.5=	IP	12.0(4)XM	4 MB	8 MB
CD08-CP-12.0.5=	IP Plus	12.0(4)XM	4 MB	8 MB
CD08-BP-12.0.5=	IP/IPX Plus	12.0(4)XM	4 MB	8 MB
CD08-CH-12.0.5=	IP/FW	12.0(4)XM	<b>8 MB</b>	8 MB

1. Bold numbers indicate that more memory than the default amount is needed to run the Feature Pack.

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## Distribution Part Numbers and Ordering Information

### Cisco 800 Series Routers<sup>1</sup>

CISCO801	1-port 10bT, 1-port BRI (S/T), IP s/w
CISCO802	1-port 10bT, 1-port BRI (U) w/ NT-1, IP s/w
CISCO803	4-port 10bT Hub, 1-port BRI (S/T), 2-port POTS, IP s/w
CISCO804	4-port 10bT Hub, 1-port BRI (U) w/ NT-1, 2-port POTS, IP s/w
CISCO805	1-port 10bT, 1-port serial, IP s/w

### Cisco 800 Series Software Feature Packs

CD08-C-12.0.5=	IP for Cisco 801-805
CD08-CP-12.0.5=	IP Plus for Cisco 801-805
CD08-BP-12.0.5=	IP/IPX Plus for Cisco 801-805
CD08-CH-12.0.5=	IP/FW for Cisco 801-805
CD08-CHP-12.0.5=	IP/FW Plus for Cisco 801-804
CD08-CHL-12.0.5=	IP/FW Plus IPSec56 for Cisco 801-804
CD08-BHL-12.0.5=	IP/IPX/FW Plus IPSec56 for Cisco 801-804

### Cisco 800 Series Memory Options

MEM800-4F=	Cisco 800 Series, 4 MB Flash Mini-Card
MEM800-8F=	Cisco 800 Series, 8 MB Flash Mini-Card
MEM800-4D=	Cisco 800 Series, 4 MB DRAM DIMM
MEM800-8D=	Cisco 800 Series, 8 MB DRAM DIMM

### Cisco 800 Series Accessories

PWR-800-WW1=	Cisco 800 Series, AC Power Supply Spare
PWR-805-WW1=	Cisco 805 Series, AC Power Supply Spare

### Cisco 800 Series Basic Maintenance

CON-SNT-PKG1	SMARTnet Maintenance (8x5xNBD)
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1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco 800 Series Web site: <http://www.cisco.com/go/800>

## Cisco 1000 Series

The Cisco 1000 series of compact, fixed-configuration desktop routers provides low-cost, high-speed connectivity for branch and small offices. These products offer a range of synchronous and asynchronous WAN options to address a variety of needs and fit seamlessly into any networking environment.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Cisco 1003

- Inexpensive, easy-to-install and manage, multiprotocol routing for small remote sites
- ISDN (BRI S/T) port, 10BaseT Ethernet port, console port, and slot for a Flash RAM card
- Software features that extend to support IP, IPX, and AppleTalk routing

##### Cisco 1004

- The same features as Cisco 1003, plus an integrated NT1 device, reducing the number of devices needed to connect to ISDN lines in North America

##### Cisco 1005

- Inexpensive, fixed configuration, easy to install and manage, multiprotocol routing for small remote sites
- Serial port with synchronous speeds up to 2.048 Mbps, 10BaseT Ethernet port, console port, and slot for Flash RAM card
- Software features that extend to support IP, IPX, and AppleTalk routing

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### Key Features

- Support for Cisco IOS software
- Integration with enterprise networks that are based on asynchronous serial lines, leased lines, Frame Relay, Switched 56, and X.25 services (Cisco 1005) or ISDN (Cisco 1003 and 1004)
- Flash Memory (PC Card) and primary memory upgrade capability for easy software image maintenance
- Products tailored for easy inventory, installation, operation, and maintenance
- Setup with Cisco ConfigMaker, a free tool for configuring a network of routers
- With CiscoWorks Windows, provides centralized router management and remote maintenance

## Specifications

Feature	Cisco 1003 ISDN Router	Cisco 1004 ISDN Router	Cisco 1005 Serial Router
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet (10BaseT)	1-port Ethernet (10BaseT)	1-port Ethernet (10BaseT)
<b>Fixed WAN Ports (connections)</b>	1-port ISDN BRI (S/T)	1-port ISDN BRI (U)	1-port sync serial (DB-60)
<b>Modular Slots</b>	None	None	None
<b>Processor Speed (type)</b>	25 MHz (MC68360)	25 MHz (MC68360)	25 MHz (MC68360)
<b>Flash Memory</b>	2 MB (default) 4 MB card optional	2 MB (default) 4 MB card optional	2 MB (default) 4 MB card optional
<b>DRAM Memory</b>	8 MB (default)	8 MB (default)	8 MB (default)
<b>Dimensions (HxWxD)</b>	1.75 x 8 x 8.3 in.	1.75 x 8 x 8.3 in.	1.75 x 8 x 8.3 in.
<b>Service Category</b>	2	2	2

## Cisco IOS Software and Memory Requirements

The Cisco 1000 Series in distribution ships with:

- 2-MB Flash memory
- 8-MB DRAM memory

To run the Cisco IOS Feature Packs, you need the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required	DRAM Memory Required
CD10-C-11.3=	IP only	11.3 (5)	2 MB	4 MB
CD10-A/B/E-11.3=	IP/IPX/AT	11.3 (5)	2 MB	8 MB
CD10-AP-11.3=	IP/IPX/AT Plus	11.3 (5)	2 MB	8 MB
CD10-AW-11.3=	IP/IPX/AT/ Plus 40	11.3 (5)	2 MB	8 MB
CD10-AY-11.3=	IP/IPX/AT/ Plus 56	11.3 (5)	2 MB	8 MB

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## Distribution Part Numbers and Ordering Information

### Cisco 1000 Series Chassis<sup>1</sup>

CISCO1003-CH	Cisco 1003 Ethernet / ISDN BRI Router
CISCO1004-CH	Cisco 1004 Ethernet / ISDN BRI Router with NT1
CISCO1005-CH	Cisco 1005 Ethernet / Sync Serial Route

### Cisco 1000 Series Software Feature Packs

CD10-C-11.3=	Cisco 1000 Series, IP only Feature Pack
CD10-A/B/E-11.3=	Cisco 1000 Series, IP/IPX/AT Feature Pack
CD10-AP-11.3=	Cisco 1000 Series, IP/IPX/AT Plus Feature Pack
CD10-AW-11.3=	Cisco 1000 Series, IP/IPX/AT Plus with 40-Bit Encryption Feature Pack
CD10-AY-11.3=	Cisco 1000 Series, IP/IPX/AT Plus with 56-Bit Encryption Feature Pack

### Cisco 1000 Series Memory Options

MEM-1000-2MF=	Cisco 1000 Series, 2 MB Flash Card
MEM-1000-4MF=	Cisco 1000 Series, 4 MB Flash Card
MEM-1000-8MD=	Cisco 1000 Series, 8 MB DRAM SIMM
MEM-1000-16MD=	Cisco 1000 Series, 16 MB DRAM SIMM

### Cisco 1000 Series Accessories

CAB-1000-CON=	Cisco 1000 Series, Console Cable
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### Cisco 1000 Series Basic Maintenance

CON-SNT-PKG2	Cisco 1000 Series SMARTnet (8 x 5 x NBD)
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1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco 1000 Series Website: <http://www.cisco.com/go/1000>

## Cisco 1400 Series<sup>1</sup>

For small businesses or small branch offices that need to connect seamlessly to the Internet or to corporate networks, the Cisco 1400 Series routers provide high-performance connectivity from Ethernet to DSL-based WAN infrastructures. The Cisco 1401 ATM25 WANrouter provides high-performance connectivity from Ethernet to ATM cell-based WAN infrastructure and allows an external demarcation point as required by telcos. The Cisco 1417 provides direct connectivity to market-leading DSLAM products that support the ANSIT1.413 standard (such as the Alcatel ASAM, for example). The 1400 series is part of Cisco's end-to-end DSL solutions.




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### When to Sell

#### Sell This Product

##### Cisco 1401

#### When a Customer Needs These Features

- Flexibility in connecting to several different flavors of legacy xDSL modems (ADSL, HDSL, or SDSL)
- Allows for connectivity to an ATM cell-based WAN infrastructure
- ATM25 interface provides an external demarcation point as required by many telcos and can be combined with an external ATM 25 asymmetric DSL (ADSL) modem to provide high-speed Internet/intranet access up to 8 Mbps

##### Cisco 1417

- Connection to DSL access multiplexors (DSLAMs) which implement the ANSI ADSL DMT Issue-2 specification, such as the Alcatel DMT Issue 2 DSLAMs
- Features an integrated ADSL DMT Issue 2 ATU-R, with integrated ATM capabilities

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### Key Features

- DSL for high-speed Internet/intranet access
- Powered by Cisco IOS software, the industry's most robust, scalable, and feature-rich internetworking software
- Quality of Service (QoS) for high-performance applications such as Video-on-Demand (VoD), desktop video conferencing, and distance learning
- Advanced security with optional integrated IOS Firewall software
- VPN-capable router with IPSec and encryption

1. For ordering information on this product, contact your Cisco Account Team.

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## Specifications

<b>Feature</b>	<b>Cisco 1401</b>	<b>Cisco 1417</b>
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet (10BaseT), RJ-45	1-port Ethernet (10BaseT), RJ-45
<b>Fixed WAN Ports (connections)</b>	1-port ATM-25	1-port ADSL (DMT-2), RJ-11
<b>Processor Speed (type)</b>	33 MHz (68360)	33 MHz (68360)
<b>Flash Memory</b>	4 MB (default); 16 MB (maximum)	4 MB (default); 16 MB (maximum)
<b>DRAM Memory</b>	16 MB (default); 16 MB (maximum)	16 MB (default); 16 MB (maximum)
<b>Dimensions (HxWxD)</b>	1.9 x 11.5 x 10.56 in.	1.9 x 11.5 x 10.56 in.

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## Competitive Products

- Ascend: Cell Pipe 50A
- Cayman: ADSL 3220
- Efficient: Speed Stream 5660
- Flowpoint: Smart Switch Router 250 (also sold under Alcatel and Cabletron brands)
- Zyxel: Prestige 641

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## For More Information

See the Cisco 1400 Website: <http://www.cisco.com/go/1400>

## Cisco 1600 Series

The Cisco 1600 is the proven choice for flexible Internet/intranet access for small branch offices and small businesses. In addition to one fixed WAN port and one Ethernet port, the Cisco 1600 models support one WAN interface card, which allows customers to add or change WAN ports as needed. WAN options include ISDN, leased lines (T1/E1), Frame Relay, Switched 56, Switched Multimegabit Data Service (SMDS), and X.25.




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### When to Sell

Sell This Product	When a Customer Needs These Features
<b>Cisco 1601 R</b>	<ul style="list-style-type: none"> <li>• One serial port with synchronous performance up to T1/E1 speeds for Frame Relay, leased line, Switched 56, SMDS, and X.25 WAN services, or async performance up to 115.2 kbp</li> <li>• Higher speeds than ISDN or Switched 56 kbps</li> </ul>
<b>Cisco 1602 R</b>	<ul style="list-style-type: none"> <li>• A 56-kbps serial port (Frame Relay, leased line, Switched 56, SMDS, and X.25)</li> <li>• Low-cost integrated channel service unit (CSU)/data service unit (DSU) at 56 kbps</li> <li>• Ability to get CSU/DSU diagnostics information and configuration remotely via Cisco IOS command-line interface</li> </ul>
<b>Cisco 1603 R and 1604 R</b>	<ul style="list-style-type: none"> <li>• ISDN (BRI) and ISDN leased-line connectivity</li> <li>• Built-in NT1 for U.S. and Canada (Cisco 1604)</li> </ul>
<b>Cisco 1605 R</b>	<ul style="list-style-type: none"> <li>• Two Ethernet ports to isolate internal secure LAN from perimeter LAN (exposed to Internet)</li> <li>• Single flexible WAN connection (any WAN interface card)</li> </ul>

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### Key Features

- Support for Cisco IOS software
- Modular WAN interface card slot for adding and changing WAN connections for flexibility and investment protection
- Optional firewall and virtual private network software
- Optional integrated DSU/CSU up to T1 speed and integrated NT1 for North America
- Flash Memory (PC Card) and primary memory upgrade capability for easy software image maintenance
- FastStep configuration utility, GUI-based software for easy setup and troubleshooting
- Setup with Cisco ConfigMaker, a free tool for configuring a network of routers

## Specifications

Feature	Cisco 1601	Cisco 1602 R	Cisco 1603 R	Cisco 1604 R	Cisco 1605 R
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet (10BaseT)	1-port Ethernet (10BaseT)	1-port Ethernet (10BaseT)	1-port Ethernet (10BaseT)	2-ports Ethernet (10BaseT)
<b>Fixed WAN Ports (connections)</b>	1-port sync/async serial	1-port sync serial, 56 kbps 4-wire DSU/CSU	1-port ISDN BRI (S/T)	1-port ISDN BRI (U)	None
<b>WAN Card Slots</b>	1	1	1	1	1
<b>WAN Interface Card Modules</b>	1-port ISDN BRI (S/T) 1-port ISDN BRI (U) 1-port sync/async serial 1-port serial w/ 56/64 CSU 1-port serial w/ FT1/T1 CSU	Same as Cisco 160 1R	1-port ISDN BRI (S/T) for leased line 1-port sync/async serial 1-port serial w/ 56/64 CSU 1-port serial w/ FT1/T1 CSU	1-port ISDN BRI (S/T) for leased line 1-port sync/async serial 1-port serial w/ 56/64 CSU 1-port serial w/ FT1/T1 CSU	Same as Cisco 160 1R
<b>Processor Speed</b>	33 MHz (68360)	33 MHz (68360)	33 MHz (68360)	33 MHz (68360)	33 MHz (68360)
<b>Flash Memory</b>	4 MB (default) 16 MB (max)	Same as Cisco 160 1R	Same as Cisco 160 1R	Same as Cisco 160 1R	Same as Cisco 160 1R
<b>DRAM Memory</b>	8 MB (default) 24 MB (max)	Same as Cisco 160 1R	Same as Cisco 160 1R	Same as Cisco 160 1R	Same as Cisco 160 1R
<b>Dimensions (HxWxD)</b>	2.19 x 11.15 x 8.67 in. 2.19 x 11.15 x 8.67 in. 2.19 x 11.15 x 8.67 in. 2.19 x 11.15 x 8.67 in. 2.19 x 11.15 x 8.67 in.				
<b>Service Category</b>	2	2	2	2	2

## Competitive Products

- 3Com: NETBuilder 1xx, 22x, 422
- Ascend: Pipeline 130, 220
- Bay: AN, Nautica Clam

## Cisco IOS Software and Memory Requirements

The Cisco 1600 Series in distribution ships with:

- 4-MB Flash memory
- 8-MB DRAM memory

To run the Cisco IOS Feature Packs, you need the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required <sup>1</sup>	DRAM Memory Required <sup>1</sup>
CD16-C-12.0=	IP only	12.0(3) or 12.0(3)T	4 MB	8 MB
CD16-CP-12.0=	IP Plus	12.0(3) or 12.0(3)T	4 MB	<b>10 MB</b>
CD16-CW-12.0=	IP Plus 40	12.0(3) or 12.0(3)T	4 MB	<b>10 MB</b>
CD16-CY-12.0=	IP Plus 56	12.0(3) or 12.0(3)T	4 MB	<b>10 MB</b>
CD16-CL-12.0=	IP Plus IPsec 56	12.0(3) or 12.0(3)T	4 MB	<b>12 MB</b>
CD16-CH-12.0=	IP/Firewall	12.0(3) or 12.0(3)T	4 MB	8 MB
CD16-CHL-12.0=	IP/Firewall Plus IPsec 56	12.0(3) or 12.0(3)T	4 MB	<b>12 MB</b>
CD16-B-12.0=	IP/IPX	12.0(3) or 12.0(3)T	4 MB	8 MB
CD16-BPH-12.0=	IP/IPX/Firewall Plus	12.0(3) or 12.0(3)T	4 MB	<b>10 MB</b>
CD16-Q-12.0=	IP/IPX/AT/IBM	12.0(3) or 12.0(3)T	4 MB	<b>12 MB</b>
CD16-QHL-12.0=	IP/IPX/AT/IBM/Firewall Plus IPsec 56	12.0(3) or 12.0(3)T	<b>6 MB</b>	<b>16 MB</b>
CD16-QP-12.0=	IP/IPX/AT/IBM Plus	12.0(3) or 12.0(3)T	<b>6 MB</b>	<b>16 MB</b>

1. Bold numbers indicate that more memory than the default amount is needed to run the Feature Pack.

## Distribution Part Numbers and Ordering Information

### Cisco 1600 Series Router Chassis<sup>1</sup>

CISCO1601-R	Cisco 1601 R Ethernet/Serial Modular Router
CISCO1602-R	Cisco 1602 R Ethernet/ISDN-BRI Modular Router w/56k DSU 4-wire
CISCO1603-R	Cisco 1603 R Ethernet/ISDN-BRI Modular Router
CISCO1604-R	Cisco 1604 R Eth/BRI Modular Router w/ NT1
CISCO1605-R	Cisco 1605 R Dual Ethernet/WAN Interface Card Slot Router
CISCO1601-CH	Original Cisco 1601 CH. Consider the NEW Cisco 1601 R
CISCO1602-CH	Original Cisco 1602 CH. Consider the NEW Cisco 1602 R
CISCO1603-CH	Original Cisco 1603 CH. Consider the NEW Cisco 1603 R
CISCO1604-CH	Original Cisco 1604 CH. Consider the NEW Cisco 1604 R

### Cisco 1600 Series WAN Interface Cards (WICs)

WIC-1T=	1-port Serial WAN Interface Card
WIC-1B-S/T=	1-port BRI (S/T) WAN Interface Card (Dial & Leased Line)
WIC-1B-S/T-LL=	1-port BRI Leased Line WAN Interface Card (1603/1604 only)
WIC-1B-U=	1-port BRI (U) w/ NT-1 WAN Interface Card (Dial & Leased Line)
WIC-1DSU-T1=	1-port Serial w/ T1/FrT1 DSU/CSU WAN Interface Card
WIC-1DSU-56K4=	1-port Serial w/ 4-Wire 56/64Kbps DSU/CSU WAN Interface Card

### Cisco 1600 Series Software Feature Packs

CD16-C-12.0=	Cisco 1600 Series, IP only Feature Pack
CD16-CP-12.0=	Cisco 1600 Series, IP Plus Feature Pack
CD16-CW-12.0=	Cisco 1600 Series, IP Plus 40 Feature Pack
CD16-CY-12.0=	Cisco 1600 Series, IP Plus 56 Feature Pack
CD16-CL-12.0=	Cisco 1600 Series, IP Plus IPsec 56 Feature Pack
CD16-CH-12.0=	Cisco 1600 Series, IP/Firewall Feature Pack
CD16-CHL-12.0=	Cisco 1600 Series, IP/Firewall Plus IPsec 56 Feature Pack
CD16-B-12.0=	Cisco 1600 Series, IP/IPX Feature Pack
CD16-BHP-12.0=	Cisco 1600 Series, IP/IPX/Firewall Plus Feature Pack
CD16-Q-12.0=	Cisco 1600 Series, IP/IPX/AT/IBM Feature Pack
CD16-QHL-12.0=	Cisco 1600 Series, IP/IPX/AT/IBM/Firewall Plus IPsec 56 Feature Pack
CD16-QP-12.0=	Cisco 1600 Series, IP/IPX/AT/IBM Plus Feature Pack

### Cisco 1600 Series Memory Options

MEM1600-4FC=	Cisco 1600 Series, 4 MB Flash Card
MEM1600-6FC=	Cisco 1600 Series, 6 MB Flash Card
MEM1600-8FC=	Cisco 1600 Series, 8 MB Flash Card
MEM1600-12FC=	Cisco 1600 Series, 12 MB Flash Card
MEM1600-16FC=	Cisco 1600 Series, 16 MB Flash Card
MEM1600-2D=	Cisco 1600 Series, 2 MB DRAM SIMM
MEM1600-4D=	Cisco 1600 Series, 4 MB DRAM SIMM
MEM1600-8D=	Cisco 1600 Series, 8 MB DRAM SIMM
MEM1600-16D=	Cisco 1600 Series, 16 MB DRAM SIMM

### Cisco 1600 Series Accessories

CAB-1600-CON=	Cisco 1600 Series, Console Cable
PWR-1600-WW1=	Cisco 1600 Series, AC Power Supply (Worldwide)

### Cisco 1600 Series Basic Maintenance

CON-SNT-PKG2	Cisco 1600 Series SMARTnet Maintenance
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- For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco 1600 Series Website: <http://www.cisco.com/go/1600>

## Cisco 1700 Series

The Cisco 1700 Series of modular access routers provides flexible, secure, access solutions for small- and medium-sized businesses and small branch offices. The modular architecture of the Cisco 1700 Series enables users to customize a secure access solution to suit their current access requirements and to cost-effectively implement new applications including Virtual Private Network (VPN) access, multiservice voice/data integration, and broadband services. Integrated network functions including an optional firewall, CSU/DSU, and VPN features reduce deployment and management time and effort.



The Cisco 1720 supports traditional data access applications today as well as new WAN services—including VPNs and broadband technologies—now or in the future.

The Cisco 1750 supports integrated multiservice voice/fax/data applications in addition to data applications. Businesses can start with a robust data access solution today and cost-effectively integrate voice and fax over data when ready.

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### When to Sell

#### Sell This Product

##### Cisco 1720

#### When a Customer Needs These Features

- Two modular WAN slots that support the same data WAN interface cards (WICs) as the Cisco 1600, 2600 and 3600 routers for flexibility and investment protection
- A broad array of WAN services supported, including Frame Relay, leased line, ISDN BRI, X.25, SMDS and more

##### Cisco 1750

- Three modular slots (2 slots for WICs or Voice Interface Cards; 1 slot for VICs) that support the same data WICs and analog VICs as the Cisco 2600 and 3600 routers for flexibility and investment protection
- Integrated multiservice voice/data applications
- A broad array of WAN services supported, including Frame Relay, leased line, ISDN BRI, X.25, SMDS and more

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### Key Features

- Cisco IOS software
- Support for up to four serial interfaces or two ISDN BRI
- One autosensing 10/100 Mbps Fast Ethernet LAN connection
- One auxiliary (AUX) port for dial-up management or low-speed asynchronous connections (up to 112.5 kbps)
- An expansion slot on the motherboard to support future hardware-assisted encryption
- Optional integrated DSU/CSU up to T1 speed and integrated NT1 for North America
- Optional integrated Cisco IOS Firewall and virtual private network software for encryption, tunneling, and quality of service

## Specifications

Feature	Cisco 1720	Cisco 1750
<b>Fixed LAN Ports (connections)</b>	1-port autosensing 10/100 Mbps Ethernet (10/100BaseT)	1-port autosensing 10/100 Mbps Ethernet (10/100BaseT)
<b>Fixed WAN Ports</b>	None	None
<b>Modular Slots</b>	2 WAN slots	3 slots (2 WAN or Voice slots and 1 Voice slot)
<b>WAN Interface Cards (WICs)</b>	1-port serial sync/async 2-port serial sync/async 2-port low-speed serial (up to 128 kbps) 1-port ISDN BRI S/T 1-port ISDN BRI U with integrated NT-1 1-port serial with integrated 56/64 kbps DSU/CSU 1-port serial with integrated T1/Fractional T1 DSU/CSU	Same as Cisco 1720
<b>Voice Interface Cards (VICs)</b>	None	2-port voice - FXS voice/fax interface card 2-port voice - E&M voice/fax interface card 2-port voice - FXO voice/fax interface card 2-port FXO Voice/Fax card for Europe 2-port FXO Voice/Fax card for Australia
<b>Processor Speed (type)</b>	48 MHz (RISC)	48 MHz (RISC)
<b>Flash Memory</b>	4 MB (default); 16 MB (max)	1750 base model: 4 MB (default); 16 MB (max) 1750-2V multiservice-ready configuration: 8 MB 1750-4V multiservice-ready configuration: 8 MB
<b>DRAM Memory</b>	16 MB (default); 48 MB (max)	1750 base model: 16 MB (default); 48 MB (max) 1750-2V multiservice-ready configuration: 24 MB 1750-4V multiservice-ready configuration: 24 MB
<b>Dimensions (HxWxD)</b>	3.1 x 11.2 x 8.7 in.	4.0 x 11.2 x 8.7 in.
<b>Service Category</b>	4	1750 base model: 4 1750-2V and 1750-4V: 3

## Competitive Products

### Cisco 1720

3Com: OfficeConnect NETBuilder  
Ascend: Pipeline 130  
Nortel/Bay: AN

### Cisco 1750

3Com: OfficeConnect NETBuilder  
Ascend: Pipeline 130  
Motorola: Vanguard 6425  
Nortel/Bay: AN  
Nortel/Micron: V/IP Gateway

## Cisco IOS Software and Memory Requirements

In distribution, the Cisco 1700 series ships with the following memory:

Product Number	DRAM Memory	Flash Memory
CISCO1720	16 MB	4 MB
CISCO1750	16 MB	4 MB
CISCO1750-2V	24 MB	8 MB
CISCO1750-4V	24 MB	8 MB

To run the Cisco IOS Feature Packs, you need the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required	DRAM Memory Required
<b>Cisco 1720 and 1750</b>				
CD17-C-12.0.5=	IP only	12.0(5)XQ	4 MB	16 MB
CD17-CP-12.0.5=	IP Plus	12.0(5)XQ	8 MB	20 MB
CD17-CH-12.0.5=	IP/FW	12.0(5)XQ	4 MB	16 MB
CD17-CL-12.0.5=	IP Plus IPSEC 56	12.0(5)XQ	8 MB	24 MB
CD17-CK2-12.0.5=	IP Plus IPSEC 3DES	12.0(5)XQ	8 MB	24 MB
CD17-CHL-12.0.5=	IP/FW Plus IPSEC 56	12.0(5)XQ	8 MB	24 MB
CD17-CHK2-12.0.5=	IP/FW Plus IPSEC 3DES	12.0(5)XQ	8 MB	24 MB
CD17-B-12.0.5=	IP/IPX	12.0(5)XQ	4 MB	16 MB
CD17-BHP-12.0.5=	IP/IPX/FW Plus	12.0(5)XQ	8 MB	20 MB
CD17-Q-12.0.5=	IP/IPX/AT/IBM	12.0(5)XQ	8 MB	20 MB
CD17-QP-12.0.5=	IP/IPX/AT/IBM Plus	12.0(5)XQ	8 MB	24 MB
CD17-QHL-12.0.5=	IP/IPX/AT/IBM/FW Plus IPSEC 56	12.0(5)XQ	8 MB	32 MB
CD17-QHK2-12.0.5=	IP/IPX/AT/IBM/FW Plus IPSEC 3DES	12.0(5)XQ	8 MB	32 MB
<b>Cisco 1750 Only</b>				
CD17-CVP-12.0.5=	IP/Voice Plus	12.0(5)XQ	8 MB	24 MB
CD17-CHV-12.0.5=	IP/FW/Voice Plus	12.0(5)XQ	8 MB	24 MB
CD17-CVL-12.0.5=	IP/Voice Plus IPSEC 56	12.0(5)XQ	8 MB	32 MB
CD17-CVK2-12.0.5=	IP/Voice Plus IPSEC 3DES	12.0(5)XQ	8 MB	32 MB
CD17-CHVL-12.0.5=	IP/FW/Voice Plus IPSEC 56	12.0(5)XQ	8 MB	32 MB
CD17-CHK2-12.0.5=	IP/FW/Voice Plus IPSEC 3DES	12.0(5)XQ	8 MB	32 MB
CD17-BHPV-12.0.5=	IP/IPX/FW/Voice Plus	12.0(5)XQ	8 MB	24 MB
CD17-QHVL-12.0.5=	IP/IPX/AT/IBM/FW/Voice Plus IPSEC 56	12.0(5)XQ	8 MB	32 MB
CD17-QHKV2-12.0.5=	IP/IPX/AT/IBM/FW/Voice Plus IPSEC 3DES	12.0(5)XQ	8 MB	32 MB

## Distribution Part Numbers and Ordering Information

### Cisco 1700 Series Modular Access Routers<sup>1</sup>

CISCO1720	10/100BaseT Modular Router w/ 2 WAN slots, Cisco IOS IP SW
CISCO1750	10/100 Modular Router w/1 VIC, 2WIC/VIC slots, Cisco IOS IP SW
CISCO1750-2V	10/100 Modular Router w/2 Voice channels, IOS IP/VOICE + SW
CISCO1750-4V	10/100 Modular Router w/4 Voice channels, IOS IP/VOICE + SW

### Cisco 1700 Series Software Feature Packs (for 1720 and 1750)

CD17-C-12.0.5=	IP only Feature Pack
CD17-CP-12.0.5=	IP Plus Feature Pack
CD17-CH-12.0.5=	IP/FW Feature Pack
CD17-CL-12.0.5=	IP Plus IPSEC 56 Feature Pack
CD17-CK2-12.0.5=	IP Plus IPSEC 3DES Feature Pack
CD17-CHL-12.0.5=	IP/FW Plus IPSEC 56 Feature Pack

CD17-CHK2-12.0.5=	IP/FW Plus IPSEC 3DES Feature Pack
CD17-B-12.0.5=	IP/IPX Feature Pack
CD17-BHP-12.0.5=	IP/IPX/FW Plus Feature Pack
CD17-Q-12.0.5=	IP/IPX/AT/IBM Feature Pack
CD17-QP-12.0.5=	IP/IPX/AT/IBM Plus Feature Pack
CD17-QHL-12.0.5=	IP/IPX/AT/IBM/FW Plus IPSEC 56 Feature Pack
CD17-QHK2-12.0.5=	IP/IPX/AT/IBM/FW Plus IPSEC 3DES Feature Pack

#### Cisco 1750 Series Software Feature Packs (for 1750 only)

CD17-CVP-12.0.5=	IP/Voice Plus Feature Pack
CD17-CHV-12.0.5=	IP/FW/Voice Plus Feature Pack
CD17-CVL-12.0.5=	IP/Voice Plus IPSEC 56 Feature Pack
CD17-CVK2-12.0.5=	IP/Voice Plus IPSEC 3DES Feature Pack
CD17-CHVL-12.0.5=	IP/FW/Voice Plus IPSEC 56 Feature Pack
CD17-CHVK2-12.0.5=	IP/FW/Voice Plus IPSEC 3DES Feature Pack
CD17-BHPV-12.0.5=	IP/IPX/FW/Voice Plus Feature Pack
CD17-QHVL-12.0.5=	IP/IPX/AT/IBM/FW/Voice Plus IPSEC 56 Feature Pack
CD17-QHVK2-12.0.5=	IP/IPX/AT/IBM/FW/Voice IPSEC 3DES Feature Pack

#### Cisco 1700 Series Memory Options

MEM-1700-4MFC=	Cisco 1700 Series, 4 MB Mini-Flash Card
MEM1700-4U8MFC=	Cisco 1700 series, 4MB to 8MB Mini-Flash Card Upgrade
MEM-1700-8MFC=	Cisco 1700 Series, 8 MB Mini-Flash Card
MEM-1700-16MFC=	Cisco 1700 Series, 16 MB Mini-Flash Card
MEM-1700-4D=	Cisco 1700 Series, 4 MB DRAM DIMM
MEM-1700-8D=	Cisco 1700 Series, 8 MB DRAM DIMM
MEM-1700-16D=	Cisco 1700 Series, 16 MB DRAM DIMM
MEM-1700-32D=	Cisco 1700 Series, 32 MB DRAM DIMM

#### Cisco 1700 Series WAN Interface Cards (WICs)

WIC-1T	1-port Serial WAN Interface Card
WIC-2T	2-port Serial WAN Interface Card
WIC-2A/S	2-port Async/Sync Serial WAN Interface Card
WIC-1B-S/T	1-port BRI (S/T) WAN Interface Card (dial and leased line)
WIC-1B-U	1-port BRI w/ NT-1 WAN Interface Card (dial and leased line)
WIC-1DSU-56K4	1-port 4-Wire 56/64 Kbps w/ (DSU/CSU) WAN Interface Card
WIC-1DSU-T1	1-port T1/Fr T1 w/ (DSU/CSU) WAN Interface Card

#### Cisco 1750 Series Voice Interface Cards (for 1750 only)

VIC-2FXS	2-port Voice Interface Card FXS
VIC-2FXO	2-port Voice Interface Card FXO
VIC-2E/M	2-port Voice Interface Card E&M
VIC-2FXO-EU	2-port Voice Interface Card FXO for Europe
VIC-2FXO-M	32-port Voice Interface Card FXO for Australia

#### Cisco 1700 Series Spares and Accessories

PWR-1700-WWV1=	Cisco 1700 AC Power Supply - WORLD-WIDE
PVDM-4=	4-Channel Packet Voice/Fax DSP Module
PVDM-8=	8-Channel Packet Voice/Fax DSP Module

#### Cisco 1700 Series Basic Maintenance

CON-SNT-PKG4	Cisco 1720 and 1750 SMARTnet Maintenance
CON-SNT-PKG3	Cisco 1750-2V and Cisco 1750-4V SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco 1700 Website: <http://www.cisco.com/go/1700>

## Cisco 2500 Series

The Cisco 2500 series of routers, the world's most popular brand of branch office router, provides a wide variety of models to suit a broad range of data-networking needs. These routers are typically fixed configuration with at least two of the following interfaces: Ethernet Token Ring, synchronous serial, asynchronous serial, ISDN BRI, and 10Base-T hub ports. Two modular models are also available.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Cisco 2500 Series

- Data-only network requirement

##### Cisco 2501, 2502, 2503, 2504

- Multiprotocol routing between WANs and LANs
- A single Ethernet LAN and dual serial ports (Cisco 2501, 2503)
- A single Token Ring LAN and dual serial ports (Cisco 2502, 2504)
- An ISDN BRI S/T interface (Cisco 2503, 2504)

##### Cisco 2513, 2514, 2515

- Dual LAN configuration for network segmentation or security (physical firewall)
- A single Ethernet port, a single Token Ring port, and dual serial ports (Cisco 2513)
- Dual Ethernet ports and dual serial ports (Cisco 2514)
- Dual Token Ring and dual serial ports (Cisco 2515)

##### Cisco 2505, 2507, 2516

- Multiprotocol routing with integrated 10BaseT hubs and dual serial ports
- An ISDN BRI S/T interface (Cisco 2516)

##### Cisco 2509, 2511, 2512, AS2509-RJ, AS2511-RJ

- An access server combining a terminal server, protocol translator, and a router in a single device
- One Ethernet LAN and dual serial ports
- One Token Ring and two synch serial ports (Cisco 2512)
- 8- or 16-port asynchronous
- External cable assembly (Cisco 2509, 2511)
- RJ-11 jacks integrated in unit (AS2509-RJ, AS2511-RJ)

##### Cisco 2520, 2521, 2522, 2523

- WAN aggregation routers that can be used as communication servers
- A single Ethernet LAN, ISDN BRI S/T, and dual sync/multiple sync/async serial ports (Cisco 2520, 2522)
- A single Token Ring LAN, ISDN BRI S/T, and dual sync/multiple sync/async serial ports (Cisco 2521, 2523)
- High-density asynchronous ports (Cisco 2522, 2523)

##### Cisco 2524, 2525

- Modular WAN connectivity for flexibility to support Switched 56, fractional T1/T1, sync serial, and ISDN

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### Key Features

- Proven technology with a full suite of Cisco IOS software
- Setup with Cisco ConfigMaker, a free tool for configuring a network of routers
- With CiscoWorks Windows, allows remote management and maintenance from a central location

## Specifications

### Cisco 2500 Series—All Models

Feature	Specifications
<b>Processor Speed (type)</b>	20 MHz (68030)
<b>Flash Memory</b>	8-MB dual Flash bank option (default) 16 MB (max)
<b>DRAM Memory</b>	4 MB, upgrades to 8 or 16 MB
<b>Power Supply</b>	AC, with optional DC or redundant power supply (RPS)

### Cisco 2500 Series—Single LAN Routers (fixed configurations)

Feature	Cisco 2501	Cisco 2502	Cisco 2503	Cisco 2504
<b>Fixed LAN Ports</b>	1-port Ethernet	1-port Token Ring	1-port Ethernet	1-port Token Ring
<b>Fixed WAN Ports</b>	2-port sync serial	2-port sync serial	2-port sync serial 1-port ISDN BRI (S/T)	2-port sync serial 1-port ISDN BRI (S/T)
<b>Slots</b>	None	None	None	None
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.
<b>Service Category</b>	4	4	4	4

### Cisco 2500 Series—Router/Hub Combinations (fixed configurations)

Feature	Cisco 2505	Cisco 2507	Cisco 2516
<b>Fixed LAN Ports</b>	8-port Ethernet hub	16-port Ethernet hub	14-port Ethernet hub
<b>Fixed WAN Ports (connections)</b>	2-port sync serial	2-port sync serial	2-port sync serial 1-port ISDN BRI (S/T)
<b>Slots</b>	None	None	None
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.
<b>Service Category</b>	4	4	5

### Cisco 2500 Series—Access Servers (fixed configurations)

Feature	Cisco 2509	AS 2509-RJ	Cisco 2511	AS 2511-RJ	Cisco 2512
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet	1-port Ethernet	1-port Ethernet	1-port Ethernet	1-port Token Ring
<b>Fixed WAN Ports (connections)</b>	2-port sync serial 8-port async	1-port sync serial 8-port async	2-port sync serial 16-port async	1-port sync serial 16-port async	2-port sync serial 16-port async
<b>Slots</b>	None	None	None	None	None
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.
<b>Service Category</b>	4	4	4	4	4

**Cisco 2500 Series—High-Density Serial Routers (fixed configurations)**

Feature	Cisco 2520	Cisco 2521	Cisco 2522	Cisco 2523
<b>Fixed LAN Ports</b>	1-port Ethernet	1-port Token Ring	1-port Ethernet	1-port Token Ring
<b>Fixed WAN Ports (connections)</b>	2-port high-speed sync serial 1-port ISDN BRI (S/T) 2-port low-speed sync/async serial	Same as Cisco 2520	2-port sync serial 1-port ISDN BRI (S/T) 8-port sync/async serial	Same as Cisco 2522
<b>Slots</b>	None	None	None	None
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.
<b>Service Category</b>	4	4	4	5

**Cisco 2500 Series—Dual LAN Routers (fixed configurations)**

Feature	Cisco 2513	Cisco 2514	Cisco 2515
<b>Fixed LAN Ports</b>	1-port Ethernet 1-port Token Ring	2-port Ethernet	2-port Token Ring
<b>Fixed WAN Ports</b>	2-port sync serial	2-port sync serial	2-port sync serial
<b>Slots</b>	None	None	None
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.
<b>Service Category</b>	4	4	5

**Cisco 2500 Series—Single LAN Routers (modular configurations)**

Feature	Cisco 2524	Cisco 2525
<b>Fixed LAN Ports</b>	1-port Ethernet	1-port Token Ring
<b>Fixed WAN Ports</b>	None	None
<b>LAN Modules</b>	None	None
<b>WAN Modules</b>	1-port ISDN BRI (S/T) or 1-port ISDN BRI (U) Plus any two of the following: 1-port 2-wire Switched 56 DSU/CSU 1-port 4-wire 56K/64K DSU/CSU 1-port fractional/full T1 DSU/CSU 1-port sync serial (5-in-1 cable adapter)	Same as Cisco 2524
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.
<b>Service Category</b>	5	5

**Competitive Products**

- 3Com: SuperStack NETBuilder
- Bay Networks: Advanced Node (AN)
- IBM: 2210

## Cisco IOS Software and Memory

The 2500 Series in distribution ships with:

- 8-MB Flash memory
- 4-MB DRAM memory

To run the Cisco IOS Feature Packs, you need the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required <sup>1</sup>	DRAM Memory Required <sup>1</sup>
CD25-C-12.0=	IP only	12.0(6)	8 MB	4 MB
		12.0(5)T	8 MB	<b>6 MB</b>
		11.3(9)	8 MB	4 MB
		11.3(9)T	8 MB	4 MB
		11.2(18)	8 MB	4 MB
CD25-CP-12.0=	IP Plus	12.0(6)	8 MB	<b>6 MB</b>
		12.0(5)T	<b>16 MB</b>	<b>8 MB</b>
		11.3(9)	8 MB	4 MB
		11.3(9)T	8 MB	4 MB
		11.2(18)	8 MB	4 MB
CD25-CHL-12.0=	IP/FW Plus IPSEC 56	12.0(6)	<b>16 MB</b>	<b>8 MB</b>
		12.0(5)T	<b>16 MB</b>	<b>10 MB</b>
CD25-B-12.0=	IP/IPX/AT/DEC	12.0(6)	8 MB	<b>6 MB</b>
		12.0(5)T	8 MB	<b>8 MB</b>
		11.3(9)	8 MB	4MB
		11.3(9)T	8 MB	4 MB
		11.2(18)	8 MB	4 MB
CD25-BP-12.0=	IP/IPX/AT/DEC Plus	12.0(6)	<b>16 MB</b>	<b>6 MB</b>
		12.0(5)T	<b>16 MB</b>	<b>8 MB</b>
		11.3(9)	8 MB	<b>6 MB</b>
		11.3(9)T	8 MB	<b>6 MB</b>
		11.2(18)	8 MB	<b>6 MB</b>
CD25-AP-12.0=	Enterprise Plus	12.0(6)	<b>16 MB</b>	<b>8 MB</b>
		12.0(5)T	<b>16 MB</b>	<b>10 MB</b>
		11.3(10)	<b>16 MB</b>	<b>6 MB</b>
		11.3(10)T	<b>16 MB</b>	<b>6 MB</b>
		11.2(18)	8 MB	<b>6 MB</b>

1. Bold numbers indicate that more memory than the default amount is needed to run the Feature Pack.

## Distribution Part Numbers and Ordering Information

### Cisco 2500 Series Router Chassis<sup>1</sup>

CISCO2501-CH	1-port Ethernet AUI, 2-port Serial, IP s/w
CISCO2502-CH	1-port Token Ring, 2-port Serial, IP s/w
CISCO2503-CH	1-port Ethernet AUI, 2-port Serial, 1-port BRI (S/T), IP s/w
CISCO2504-CH	1-port Token Ring, 2-port Serial, 1-port BRI (ST), IP s/w
CISCO2505-CH	8-port 10bT hub, 2-port Serial, IP s/w
CISCO2507-CH	16-port 10bT hub, 2-port Serial, IP s/w
CISCO2513-CH	1-port Ethernet AUI, 1-port Token Ring, 2-port Serial, IP s/w
CISCO2514-CH	2-port Ethernet AUI, 2-port Serial, IP s/w
CISCO2515-CH	2-port Token Ring, 2-port Serial, IP s/w
CISCO2516-CH	14-port 10bT hub, 2-port Serial, 1-port BRI (S/T), IP s/w
CISCO2520-CH	1-port Ethernet AUI, 2-port Serial, 1-port BRI (S/T), 2-port Async/Sync Serial, IP s/w
CISCO2521-CH	1-port Token Ring, 2-port Serial, 1-port BRI (S/T), 2-port Async/Sync Serial, IP s/w
CISCO2522-CH	1-port Ethernet AUI, 2-port Serial, 1-port BRI (S/T), 8-port Async/Sync Serial, IP s/w
CISCO2523-CH	1-port Token Ring, 2-port Serial, 1-port BRI (S/T), 8-port Async/Sync Serial, IP s/w
CISCO2524-CH	1-port Ethernet AUI, 3 slots (1 for BRI Mod, 2 for Serial Mods), IP s/w
CISCO2525-CH	1-port Token Ring, 1 BRI slot, 2 Serial slots, IP s/w

**Cisco 2524/2525 WAN Modules**

SM25-BRI-S/T=	1-port BRI (S/T) Module
SM25-BRI-U=	1-port BRI (U) w/ NT-1 Module
SM25-56K2=	1-port Serial w/ 2-Wire 56Kbps DSU/CSU Interface Module
SM25-56K4=	1-port Serial w/ 4-Wire 56/64Kbps DSU/CSU Interface Module
SM25-T1=	1-port Serial w/ FrT1/T1 DSU/CSU Module
SM25-5IN1=	1-port Serial 5-in-1 Interface Module

**Cisco 2500 Series Access Router Chassis**

CISCO2509-CH	1-port Ethernet AUI, 2-port Serial, 8-port Async Serial, IP s/w
AS2509-RJ-CH	1-port Ethernet AUI (RJ-45), 1-port Serial, 8-port Async Serial, IP s/w
CISCO2511-CH	1-port Ethernet AUI, 2-port Serial, 16-port Async Serial, IP s/w
AS2511-RJ-CH	1-port Ethernet AUI (RJ-45), 1-port Serial, 16-port Async Serial, IP s/w

**Cisco 2500 Series Software Feature Packs**

CD25-C-12.0=	IP only Feature Pack
CD25-CP-12.0=	IP Plus Feature Pack
CD25-CHL-12.0=	IP/FW Plus IPSEC 56 Feature Pack
CD25-B-12.0=	IP/IPX/AT/DEC Feature Pack
CD25-BP-12.0=	IP/IPX/AT/DEC Plus Feature Pack
CD25-AP-12.0=	Enterprise Plus Feature Pack

**Cisco 2500 Series Bundles**

Y2K-25A=	Cisco 2500 Y2K IOS Enterprise Bundle (Flash, DRAM, Boot ROM)
Y2K-25B=	Cisco 2500 Y2K IOS Desktop Bundle (Flash, DRAM, Boot ROM)
Y2K-25BS=	Cisco 2500 Y2K IOS Desktop & IBM Bundle (Flash, DRAM, Boot ROM)
Y2K-25CS=	Cisco 2500 Y2K IOS IP & IBM Bundle (Flash, DRAM, Boot ROM)
Y2K-25D=	Cisco 2500 Y2K IOS IP/IPX Bundle (Flash, DRAM, Boot ROM)
Y2K-25DS=	Cisco 2500 Y2K IOS IP/IPX & IBM Bundle (Flash, DRAM, Boot ROM)
Y2K-25LF=	Cisco 2500 Y2K IOS LANFRAD Bundle (DRAM, Boot ROM)

**Cisco 2500 Series Memory Options**

MEM-1X4F=	Cisco 2500 Series, 4 MB Flash Upgrade
MEM-1X8F=	Cisco 2500 Series, 8 MB Flash Upgrade
MEM-1X8D=	Cisco 2500 Series, 8 MB DRAM Upgrade
MEM-1X16D=	Cisco 2500 Series, 16 MB DRAM Upgrade

**Cisco 2500 Series Accessories**

ACS-2500RM-19=	Cisco 2500 Series, Rack-Mount Kit, 19 Inches
ACS-2500RM-24=	Cisco 2500 Series, Rack-Mount Kit, 24 Inches
ACS-2500ASYN=	Cisco 2500 AUX/Console Part Cable Kit
ACS-2500RPS=	Cisco 2500 Series, RPS Field Upgrade

**Cisco 2500 Series Basic Maintenance**

CON-SNT-PKG4	Cisco 2500 Series (2501-2514, 2520-2522) SMARTnet (8 x 5 x NBD)
CON-SNT-PKG5	Cisco 2500 Series (2515, 2516, 2523-2525) SMARTnet (8 x 5 x NBD)

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

**For More Information**

See the Cisco 2500 Series Website: <http://www.cisco.com/go/2500>

## Cisco 2600 Series

Cisco Systems extends enterprise-class versatility, integration, and power to branch offices with the Cisco 2600 series. The Cisco 2600 series' modular architecture provides the versatility needed to adapt to changes in network technology as new services and applications become available. Driven by a powerful RISC processor, the Cisco 2600 series supports advanced Quality of Service (QoS), security, and network integration features required in today's evolving networks. By integrating the functions of multiple separate devices into a single unit, the Cisco 2600 Series reduces the complexity of managing remote networks. The Cisco 2600 series shares modular interfaces with the Cisco 1600, 1700, and 3600 series, providing a cost-effective solution for applications such as Internet/intranet access, multiservice voice/data integration, analog and digital dial access services, VPN access, ATM access concentration, VLANs, and routing bandwidth management.




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### When to Sell

#### Sell This Product

##### Cisco 2600 Series

#### When a Customer Needs These Features

- LAN to LAN routing, including bandwidth management
- Remote access server (analog and digital dial services)
- Multiservice voice/fax/data integration
- VPN/Extranet access with optional Firewall Security
- Serial device concentration
- WAN access, including ATM services

##### Cisco 2610

- One Ethernet port

##### Cisco 2611

- Two Ethernet ports for LAN segmentation or secure LAN isolation

##### Cisco 2612

- One Token Ring port and one Ethernet port for mixed LANs and migrating from Token Ring to Ethernet

##### Cisco 2613

- One Token Ring port

##### Cisco 2620

- One autosensing 10/100 Mbps Ethernet port with VLAN support

##### Cisco 2621

- Two autosensing 10/100 Mbps Ethernet ports with VLAN support

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### Key Features

- Versatility/investment protection—field-upgradable modular interfaces enable thousands of customized solutions and easy migration to future network requirements
- Integration/manageability—lowers cost of ownership and improves ease of remote management, providing integrated “branch-in-a-box” networking that combines CSU/DSUs, multiplexors, modems, voice/data gateways, ISDN NT1s, firewalls, VPNs, encryption, and compression devices
- Multiservice voice/data networks—reduces phone/fax costs between offices; using Cisco IOS QoS features (such as RSVP, WFQ, committed access rate [CAR], and Random Early Detection [RED]), voice/fax traffic is digitized and encapsulated in Frame Relay or IP packets and consolidated with data traffic

## Specifications

Feature	Cisco 2610	Cisco 2611	Cisco 2612	Cisco 2613	Cisco 2620	Cisco 2621
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet (RJ-45)	2-port Ethernet (RJ-45)	1-port Ethernet 1-port Token Ring	1-port Token Ring	1-port 10/100 Mbps Ethernet	2-port 10/100 Mbps Ethernet
<b>Fixed WAN Ports</b>	1-115.2 Kbps async only (aux port)	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Network Module Slots</b>	1	1	1	1	1	1
<b>WAN Interface Card Slots</b>	2	2	2	2	2	2
<b>Advanced Integration Slots (AIM)</b>	1	1	1	1	1	1
<b>WAN Interface Cards</b>	1-port ISDN BRI (S/T) 1-port ISDN BRI (U) 1-port 4-wire 56/64-kbps CSU/DSU 1-port T1/FT1 CSU/DSU 1- and 2-port high-speed (2 Mbps) sync serial 2-port low-speed (13.4Kbps) async/sync serial	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Multiflex Voice and WAN Interface Cards<sup>1</sup></b>	1- and 2-port T1/FT1 with CSU/DSU and optional Drop and Insert 1-port E1 30 channel voice/fax 1-port E1 30 channel enhanced voice/fax 1-port E1 60 channel voice/fax	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Voice/Fax Network Modules</b>	1- and 2-slot voice/fax 1-port T1 24 channel voice/fax 1-port T1 24 enhanced channel voice/fax 2-port T1 48 channel voice/fax 1-port E1 30 channel voice/fax 1-port E1 30 enhanced channel voice/fax 1-port E1 60 channel voice/fax	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Voice Interface Card Modules</b>	2-port voice—FXS 2-port voice—E&M 2-port voice—FXO 2-port voice—BRI (S/T-TE)	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>LAN Modules</b>	1- and 4-port Ethernet 10BaseT	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>WAN Modules</b>	4- and 8-port BRI (S/T) 4- and 8-port BRI (U) w/ NT1 4- and 8-port async/sync serial 16- and 32-port async serial 1- and 2-port Channelized T1/PRI 1- and 2-port Channelized T1/PRI w/CSU 1- and 2-port Channelized E1/PRI balanced 1- and 2-port Channelized E1/PRI unbalanced	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610

Feature	Cisco 2610	Cisco 2611	Cisco 2612	Cisco 2613	Cisco 2620	Cisco 2621
<b>ATM Modules</b>	1-port ATM-25 4- and 8-port T1 ATM IMA with CSU/DSU 4- and 8-port E1 ATM IMA	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Modem Modules</b>	8- and 16-port analog	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>AIM Modules</b>	Data Compression AIM (8 Mbps)	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Processor Speed (type)</b>	40-MHz (RISC)	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	<b>50-MHz (RISC)</b>	<b>50-MHz (RISC)</b>
<b>Flash Memory</b>	8 MB (default) 16 MB (max)	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>DRAM Memory</b>	24 MB (default) 64 MB (max)	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Power Supply</b>	AC, DC optional, redundant power (external unit)	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Dimensions (HxWxD)</b>	1.69 x 17.5 x 11.8 in.	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610	Same as Cisco 2610
<b>Service Category</b>	5	5	5	5	5	5

1. Packet Voice applications require the use of the high-density voice/fax network module.

## Competitive Products

- 3Com: SuperStack II NETBuilder SI and Pathbuilder S400
- Bay Networks: Advanced Remote Node (ARN)
- Motorola: Vanguard 6450/6430
- Shiva: LanRover Family

## Cisco IOS Software and Memory Requirements

The Cisco 2600 Series in distribution ships with:

- 8-MB Flash memory
- 24-MB DRAM memory

To run the Cisco IOS 12.0(5)T1 Feature Packs, you need, at a minimum, the amount of memory shown in the following table. Some configurations will require more than the recommended minimum.

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required <sup>1</sup>	DRAM Memory Required <sup>1</sup>
CD26-C-12.05=	IP only	12.0(5)T1	4 MB	20 MB
CD26-CP-12.05=	IP Plus	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-CH-12.05=	IP/Firewall	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-CHL-12.05=	IP/Firewall Plus IPSec 56	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-CHK2-12.05=	IP/Firewall Plus IPSec 3DES	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-CK2-12.05=	IP Plus IPSec 3DES	12.0(5)T1	8 MB	<b>40 MB</b>
CD26-CL-12.05=	IP Plus IPSec 56	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-B-12.05=	IP/IPX/AT/DEC	12.0(5)T1	8 MB	24 MB
CD26-BP-12.05=	IP/IPX/AT/DEC Plus	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-BHP-12.05=	IP/IPX/AT/DEC/Firewall Plus	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-AP-12.05=	Enterprise Plus	12.0(5)T1	8 MB	<b>32 MB</b>
CD26-AL-12.05=	Enterprise Plus IPSec 56	12.0(5)T1	<b>16 MB</b>	<b>40 MB</b>
CD26-AHK2-12.05=	Enterprise/Firewall Plus IPSec 3DES	12.0(5)T1	<b>16 MB</b>	<b>40 MB</b>
CD26-AHL-12.05=	Enterprise/Firewall Plus IPSec 56	12.0(5)T1	<b>16 MB</b>	<b>40 MB</b>
CD26-AK2-12.05=	Enterprise Plus IPSec 3DES	12.0(5)T1	<b>16 MB</b>	<b>40 MB</b>
CD26-E-12.05=	Remote Access Server	12.0(5)T1	8 MB	20 MB

1. Bold numbers indicate that more memory than the default amount is needed to run the Feature Pack.

## Distribution Part Numbers and Ordering Information

### Cisco 2600 Series Router Chassis<sup>1</sup>

CISCO2610	1-port 10bT, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2610-DC	1-port 10bT, 1 network module slot, 1 AIM slot, 2 WIC slots, DC power supply, IP s/w
CISCO2610-RPS	1-port 10bT, 1 network module slot, 1 AIM slot, 2 WIC slots, RPS adapter, IP s/w
CISCO2611	2-port 10bT, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2611-DC	2-port 10bT, 1 network module slot, 1 AIM slot, 2 WIC slots, DC power supply, IP s/w
CISCO2611-RPS	2-port 10bT, 1 network module slot, 1 AIM slot, 2 WIC slots, RPS adapter, IP s/w
CISCO2612	1-port 10bT, 1-port TR, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2612-DC	1-port 10bT, 1-port TR, 1 network module slot, 1 AIM slot, 2 WIC slots, DC Power Supply, IP s/w
CISCO2612-RPS	1-port 10bT, 1-port TR, 1 network module slot, 1 AIM slot, 2 WIC slots, RPS adapter, IP s/w
CISCO2613	1-port Token Ring, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2613-DC	1-port Token Ring, 1 network module slot, 1 AIM slot, 2 WIC slots, DC Power Supply, IP s/w
CISCO2613-RPS	1-port Token Ring, 1 network module slot, 1 AIM slot, 2 WIC slots, RPS adapter, IP s/w
CISCO2620	1-port 10/100, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2620-DC	1-port 10/100 (autosensing), 1 network module slot, 1 AIM slot, 2 WIC slots DC Power Supply, IP s/w
CISCO2620-RPS	1-port 10/100 (autosensing), 1 network module slot, 1 AIM slot, 2 WIC slots, RPS adapter, IP s/w
CISCO2621	2-port 10/100 (autosensing), 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2621-DC	2-port 10/100 (autosensing), 1 network module slot, 1 AIM slot, 2 WIC slots, DC Power Supply, IP s/w
CISCO2621-RPS	2-port 10/100 (autosensing), 2 network module slot, 1 AIM slot, 2 WIC slot, RPS adapter, IP s/w

### Cisco 2600 Series LAN Modules

NM-1E=	1-port 10bT network module
NM-4E=	4-port 10bT network module

**Cisco WAN Interface Cards (WICs)**

WIC-1B-S/T=	1-port BRI (S/T) WAN Interface Card (Dial and Leased Line)
WIC-1B-U=	1-port BRI (U) w/NT-1 WAN Interface Card (Dial and Leased Line)
WIC-1DSU-56K4=	1-port Serial W/ 4-Wire 56/64Kbps DSU/CSU WAN Interface Card
WIC-1DSU-T1=	1-port Serial w/ FrT1/T1 DSU/CSU WAN Interface Card
WIC-1T=	1-port Serial WAN Interface Card
WIC-2T=	2-port Serial WAN Interface Card
WIC-2A/S=	2-port Async/Sync Serial WAN Interface Card

**Cisco 2600 and 3600 Series Multiflex Voice and WAN Interface Cards<sup>2</sup>**

VVIC-1MFT-T1=	1-port RJ-48 Multiflex Trunk - T1
VVIC-2MFT-T1=	2-port RJ-48 Multiflex Trunk - T1
VVIC-2MFT-T1-DI=	2-port RJ-48 Multiflex Trunk - T1 With Drop and Insert
VVIC-1MFT-E1=	1-port RJ-48 Multiflex Trunk - E1
VVIC-2MFT-E1=	2-port RJ-48 Multiflex Trunk - E1
VVIC-2MFT-E1-DI=	2-port RJ-48 Multiflex Trunk - E1 With Drop and Insert

**Cisco 2600 and 3600 Series Voice/Fax Network Modules**

NM-1V=	1-slot voice/fax network module
NM-2V=	2-slot voice/fax network module
NM-HDV-1T1-24=	1-port T1 24 channel voice/fax network module
NM-HDV-1T1-24E=	1-port T1 24 enhanced channel voice/fax network module
NM-HDV-2T1-48=	2-port T1 48 channel voice/fax network module
NM-HDV-1E1-30=	1-port E1 30 channel voice/fax network module
NM-HDV-1E1-30E=	1-port E1 30 enhanced channel voice/fax network module
NM-HDV-2E1-60=	2-port E1 60 channel voice/fax network module
NM-HDV=	High density voice network module, spare (no T1/E1 or DSPs)

**Cisco 2600 and 3600 Series High-Density Voice/Fax DSP Upgrade Modules**

PVDM-12=	12-channel Packet Voice/Fax DSP Module
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**Cisco 2600 and 3600 Series Voice Interface Cards (VICs)**

VIC-2E/M=	2-port E&M Voice Interface Card
VIC-2FXO=	2-port FXO Voice Interface Card
VIC-2FXS=	2-port FXS Voice Interface Card
VIC-2FXO-EU=	2-port FXO Voice Interface Card (for Europe)
VIC-2FXO-M3=	2-port FXO Voice Interface Card (for Australia)
VIC-2BRI-S/T-TE=	2-port BRI (S/T user side) Voice Interface Card
VIC-2FXO-M1=	2-port Voice Interface Card - FXO w/ Reversal (for US+)
VIC-2FXO-M2=	2-port Voice Interface Card - FXO w/ Reversal (for EU)

**Cisco 2600 and 3600 Series WAN Network Modules**

NM-4B-S/T	4-port BRI (S/T) network module
NM-8B-S/T	8-port BRI (S/T) network module
NM-4B-U	4-port BRI (U) w/ NT1 network module
NM-8B-U	8-port BRI (U) w/ NT1 network module
NM-4A/S=	4-port Async/Sync Serial network module
NM-8A/S=	8-port Async/Sync Serial network module
NM-16A=	16-port Async Serial network module
NM-32A=	32-port Async Serial network module
NM-1CT1	1-port Channelized T1/ISDN-PRI network module
NM-2CT1	2-port Channelized T1/ISDN-PRI network module
NM-1CT1-CSU	1-port Channelized T1/ISDN-PRI w/ CSU network module
NM-2CT1-CSU	2-port Channelized T1/ISDN-PRI w/ CSU network module
NM-1ATM-25	1-port ATM 25 network module

**Cisco 2600 and 3600 Series Modem Network Modules**

NM-8AM=	8-port Analog Modem network module
NM-16AM=	16-port Analog Modem network module

**Cisco 2600 and 3600 Series Network Modules (International)**

NM-1CE1B=	1-port Channelized E1/ISDN-PRI balanced network module
NM-1CE1U=	1-port Channelized E1/ISDN-PRI unbalanced network module
NM-2CE1B=	2-port Channelized E1/ISDN-PRI balanced network module
NM-2CE1U=	2-port Channelized E1/ISDN-PRI unbalanced network module

**Cisco 2600 and 3600 Series Modem Management Technology Licenses (MMTL)<sup>3</sup>**

MMTL-3600/2600-8=	MMTL for 8 Analog Modems
MMTL-3600/2600-16=	MMTL for 16 Analog Modems

**Cisco 2600 Series Software Feature Packs**

CD26-C-12.05=	Cisco 2600 Series, IP Feature Pack
CD26-CP-12.05=	Cisco 2600 Series, IP Plus Feature Pack
CD26-CH-12.05=	Cisco 2600 Series, IP/Firewall Feature Pack
CD26-CHL-12.05=	Cisco 2600 Series, IP/Firewall Plus IPSec 56 Feature Pack

CD26-CHK2-12.05=	Cisco 2600 Series, IP/Firewall Plus IPSec 3DES Feature Pack
CD26-CK2-12.05=	Cisco 2600 Series, IP Plus IPSec 3DES Feature Pack
CD26-CL-12.05=	Cisco 2600 Series, IP Plus IPSec 56 Feature Pack
CD26-B-12.05=	Cisco 2600 Series, IP/IPX/AT/DEC Feature Pack
CD26-BP-12.05=	Cisco 2600 Series, IP/IPX/AT/DEC Plus Feature Pack
CD26-BHP-12.05=	Cisco 2600 Series, IP/IPX/AT/DEC/Firewall Plus Feature Pack
CD26-AP-12.05=	Cisco 2600 Series, Enterprise Plus Feature Pack
CD26-AL-12.05=	Cisco 2600 Series, Enterprise Plus IPSec 56 Feature Pack
CD26-AHK2-12.05=	Cisco 2600 Series, Enterprise/Firewall Plus IPSec 3DES Feature Pack
CD26-AHL-12.05=	Cisco 2600 Series, Enterprise/Firewall Plus IPSec 56 Feature Pack
CD26-AK2-12.05=	Cisco 2600 Series, Enterprise Plus IPSec 3DES Feature Pack
CD26-E-12.05=	Cisco 2600 Series, RAS Feature Pack

#### **Cisco 2600 Series Memory Options**

MEM2600-4U8FS=	Cisco 2600 Series, 4 to 8 MB Flash Memory Upgrade
MEM2600-4U16FS=	Cisco 2600 Series, 4 to 16 MB Flash Memory Upgrade
MEM2600-8U16FS=	Cisco 2600 Series, 8 to 16 MB Flash Upgrade
MEM2600-4D=	Cisco 2600 Series, 4 MB DRAM DIMM
MEM2600-8D=	Cisco 2600 Series, 8 MB DRAM DIMM
MEM2600-16D=	Cisco 2600 Series, 16 MB DRAM DIMM
MEM2600-32D=	Cisco 2600 Series, 32 MB DRAM DIMM
MEM2600-24U32D=	Cisco 2600 Series, 24 to 32 MB DRAM Upgrade
MEM2600-24U48D=	Cisco 2600 Series, 24 to 48 MB DRAM Upgrade

#### **Cisco 2600 Series Advanced Integration Modules**

AIM-COMPR2=	Data Compression AIM for the Cisco 2600 series
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#### **Cisco 2600 Series Accessories**

ACS-2600RM-19=	Cisco 2600 Series, 19-Inch Rack Mount Kit
ACS-2600RM-24=	Cisco 2600 Series, 23/24-Inch Rack Mount Kit
ACS-2600ASYN=	Cisco 2600 Series, Auxiliary and Console Port Cable Kit
PWR-2600-AC=	Cisco 2600 Series, AC power supply (Spare)
PWR-2600-DC=	Cisco 2600 Series, DC power supply (Spare)
ACS-2600RPS=	Cisco 2600 Series, RPS adapter - Field Upgrade
WIC-BLANK-PANEL=	Blank WAN Interface Card (WIC) Panel

#### **Cisco 2600 Series Basic Maintenance**

CON-SNT-PKG5	Cisco 2600 Series SMARTnet Maintenance
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1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)
2. VoIP and VoFR require use of a Voice/Fax network module
3. Requires Plus feature pack.

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## **For More Information**

See the Cisco 2600 Series Website: <http://www.cisco.com/go/2600>

## Cisco 3300 Series

The Cisco ISR 3303 combines SONET reliability and Layer 3 awareness at the edge of the network in a single platform. The Cisco ISR 3303 is generally deployed at the edge of the SONET network in a multitenant



environment. Traditional leased-line DS1 services can be offered to support PBX digital trunk interfaces, digital loop carrier systems, T1 channel banks, T1 interfaces to Frame relay FRADs, or ATM T1 multiplexers. The Ethernet interfaces can support a variety of service interfaces that can be configured for either bridging or routing, and connect to a local LAN via 10BaseT to a hub, switch, or router.

These DS1 and 10BaseT interfaces can be mapped into a channelized SONET OC-3 interface for WAN connectivity into a SONET network using Automatic Protection Switching (APS) or Uni-directional Path Switched Ring (UPSR) protection mechanisms. T1/DS1 services are mapped into VT 1.5s. Ethernet services are mapped into SONET compliant Wideband Packet-over-SONET (WPOS). WPOS provides data bandwidth scalability by mapping Ethernet services via PPP into a single DS1 for service rates of 1.4 Mbps. These DS1s encapsulating the data are then mapped directly into SONET to ensure network compatibility.

The system supports 1:1 redundancy for system processor/router, IOS and config file, Ethernet interfaces, DS1 interfaces, and system power. Pricing for a fully equipped system, including software, is \$22,500.

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### When to Sell

#### Sell This Product

##### Cisco 3303

#### When a Customer Needs These Features

- When a SP is interested in providing a LAN/WAN service solutions
- When a SP is interested in providing traditional T1 leased line services
- When an Internet Service Provider is discussing plans to move from pure ISP to CLEC
- When an enterprise customer is thinking about deploying a fiber inter-campus network

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### Key Features

- Combines SONET access multiplexer equipment with IOS router in a single, cost-efficient, and redundant platform.
- Integrated IOS Software
- Full system redundancy (processor/router, IOS and config file, Ethernet interfaces, DS1 interfaces, and system power)
- NEBS Compliant, 19" x 11.3" x 2U
- SONET UPSR or APS configurations (auto-provisioning of alarms and performance monitoring)

## Specifications

Feature	Cisco 3303
<b>SAM Interface Module</b>	1 OC-3 interface (IR, SC), 8 10BaseT ports, 8 DS1 ports; a second SAM provides interface and processor redundancy
<b>Optical Specifications</b>	Intermediate Reach: 1270-1380 nm IR-1 Line Rate: 155.52 Mbps Connector type: SC Launch power (max.): -8 dBm Launch power (min.): -15 dBm Receiver power (max.): -8 dBm Receiver power (min.): -31 dBm Power budget: 16 Db
<b>DS1 Interfaces</b>	Up to 655 feet @ DSX-1 w/5 LBO settings Framing: SF, ESF, UNF, SLC Linecoding: AMI or B8ZS
<b>Ethernet Interfaces</b>	10BaseT, 100 Meters
<b>Performance Monitoring</b>	Per T1.403 Near-end for OC-3 Section Near-end and Far-end for OC-3 Line, STS-1 Path, VT 1.5s and DS1s
<b>Loopbacks</b>	OC-3 Optical Line, STS-1, VT 1.5
<b>Processor Speed (type)</b>	200 MHz (RISC)
<b>Flash Memory</b>	8 MB
<b>DRAM Memory</b>	64 MB
<b>Dimensions (HxWxD)</b>	3.5 x 11.8 x 17.5 in.

## Competitive Products

- Fujitsu: Fujitsu FLM-150 with FASTLANE Ethernet bridge module
- Lucent: DDM-2000 with Ethernet bridging module
- Nortel: OC-3 Express ADM with EIM Modules
- Positron (Marconi): OC-3 OSIRIS with Ethernet bridging module

## Distribution Part Numbers and Ordering Information

### Cisco 3303 Series Router Chassis<sup>1</sup>

ISR 3303-R-SC	Cisco 3303 redundantsystem with Cisco IP software and two SAMs for system redundancy
ISR 3303-NR-SC	Cisco 3303 nonredundantsystem with a single SAM and Cisco IP software

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco 3300 Series Website: <http://www.cisco.com/go/3300>

## Cisco 3600 Series

The Cisco 3600 Series is a family of modular, multifunction access platforms for medium and large-sized offices and Internet Service Providers. With over 70 modular interface options, the Cisco 3600 family provides solutions for voice/data integration, virtual private networks (VPNs), dial access, and multiprotocol data routing. Using Cisco's voice/fax network modules, the Cisco 3600 Series allows customers to consolidate voice, fax, and data traffic on a single network. The high-performance, modular architecture protects customers' investment in network technology and integrates the functions of several devices into a single, manageable solution. 3600 Bundles are also available to address specific RAS opportunities. Price ranges from \$5,200 to \$10,700.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Cisco 3620

- Medium-density WAN and dialup connectivity
- Medium-density LAN connectivity
- Low-density Voice over Data
- Low-density ATM connections
- Mid-density modem-over-PRI bundles

##### Cisco 3640

- High-density WAN and dialup connectivity
- Medium- to high-density LAN connectivity
- Mid-density Voice over Data
- Low- to mid-density ATM connections
- Low-density modem-over-BRI bundles

##### Cisco 3660

- Very high-density WAN and dialup connectivity
- High-density LAN connectivity
- Mid-density Voice over Data
- Mid-density ATM connections
- Mid- to high-density modem-over-PRI and BRI connectivity

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### Key Features

- Combines dial access, advanced LAN-to-LAN routing services, ATM connectivity and multiservice integration of voice, video, and data in a single platform
- Modular, scalable design provides performance, scalability, flexibility, and investment protection
- High-density ISDN PRI capabilities
- Preconfigured BRI and PRI modem bundles available
- Support for modem-over-BRI functionality
- Integrated Cisco IOS software (price includes IP IOS software)
- Full VPN support

## Specifications

Feature	Cisco 3620	Cisco 3640	Cisco 3660
<b>Fixed Ports</b>	None	None	1 or 2 10/100 Ethernet
<b>Network Module Slots</b>	2	4	6
<b>Advanced Integrations Module (AIM) Slots</b>	None	None	2
<b>LAN/Combo Modules</b>	<ul style="list-style-type: none"> <li>1- and 4-port 10BaseT Module</li> <li>1- and 2-port 10BaseT, 2 WIC Slots</li> <li>1-port 10BaseT, 1-port TR, 2 WIC Slots</li> <li>1-port 10/100BaseTX Module</li> <li>1-port 100BaseFX Module</li> <li>1-port 10/100bTX, 1-port Ch T1/ISDN-PRI</li> <li>1-port 10/100bTX, 2-port Ch T1/ISDN-PRI</li> <li>1-port 10/100bTX, 1-port Ch T1/ISDN-PRI w/ CSU</li> <li>1-port 10/100BbTX, 2-port Channelized T1/ISDN-PRI w/ CSU</li> <li>1-port 10/100bTX, 1-port Ch E1/PRI Unbal</li> <li>1-port 10/100bTX, 2-port Ch E1/PRI Unbal</li> <li>1-port 10/100bTX, 1-port Ch E1/PRI Bal</li> <li>1-port 10/100bTX, 2-port Ch E1/PRI Bal</li> </ul>	Same as Cisco 3620	Same as Cisco 3620
<b>WAN Modules</b>	<ul style="list-style-type: none"> <li>4- and 8-port BRI (S/T)</li> <li>4- and 8-port BRI (U) w/ NT-1</li> <li>4-port serial</li> <li>4- and 8-port async/sync serial</li> <li>16- and 32-port async</li> <li>1- and 2-port Channelized T1/ISDN-PRI</li> <li>1- and 2-port Channelized T1/ISDN-PRI w/ CSU</li> <li>1-port HSSI</li> <li>Compression</li> </ul>	Same as Cisco 3620	Same as Cisco 3620 (Hardware compression support only through AIM-COMPR4)
<b>ATM Modules</b>	<ul style="list-style-type: none"> <li>1-port 25-Mbps ATM</li> <li>1-port OC3-155Mbps ATM</li> <li>4- and 8-port T1 ATM (with IMA)</li> </ul>	Same as Cisco 3620	Same as Cisco 3620
<b>Voice/Fax Network Modules</b>	<ul style="list-style-type: none"> <li>1- or 2-slot voice/fax</li> <li>1-port T1 24 channel voice/fax</li> <li>1-port T1 24 enhanced channel voice/fax</li> <li>2-port T1 48 channel voice/fax</li> <li>1-port E1 30 channel voice/fax</li> <li>1-port E1 30 enhanced channel voice/fax</li> <li>2-port E1 60 channel voice/fax</li> </ul>	Same as Cisco 3620	Same as Cisco 3620
<b>WAN Interface Card (WIC) Modules</b>	<ul style="list-style-type: none"> <li>1-port ISDN BRI (S/T)</li> <li>1-port ISDN BRI (U)</li> <li>1-port sync serial</li> <li>1-port 4-wire 56-kbps CSU/DSU</li> <li>1-port T1/FT1 CSU/DSU</li> <li>2-port multiflex T1/E1 Drop and Insert</li> </ul>	Same as Cisco 3620	Same as Cisco 3620
<b>Voice Interface Card (VIC) Modules</b>	<ul style="list-style-type: none"> <li>2-port voice—FXS</li> <li>2-port voice—E&amp;M</li> <li>2-port voice—FXO</li> <li>2-port voice—BRI (S/T-TE)</li> </ul>	Same as Cisco 3620	Same as Cisco 3620
<b>Modem Modules</b>	<ul style="list-style-type: none"> <li>6-, 12-, 18-, 24-, and 30-port digital modem</li> <li>8- and 16-port analog modem</li> </ul>	Same as Cisco 3620	Same as Cisco 3620
<b>Processor Speed (type)</b>	80-MHz (IDT R4700 RISC)	100-MHz (IDT R4700 RISC)	225-MHz (QED RM5271 RISC)
<b>Flash Memory</b>	8 MB (default); 32 MB (max)	Same as Cisco 3620	8 MB (default); 64 MB (max)
<b>DRAM Memory</b>	<ul style="list-style-type: none"> <li>32 MB (default)</li> <li>64 MB (max)</li> </ul>	<ul style="list-style-type: none"> <li>32 MB (default)</li> <li>128 MB (max)</li> </ul>	<ul style="list-style-type: none"> <li>32 MB SDRAM (default)</li> <li>256 MB SDRAM (max)</li> </ul>
<b>Power Supply</b>	AC, DC optional	AC, DC optional	Single or dual AC/DC
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 13.5 in.	3.44 x 17.5 x 15 in.	8.7 x 17.5 x 11.8 in.
<b>Service Category</b>	7	10	Cisco 3661: 14 Cisco 3662: 15

## Competitive Products

- 3Com: NETBuilder II and Netserver I-Modem
- IBM: 2212
- Intel/Shiva: Lanrover series
- Livingston: Portmaster 2E/2ER
- Nortel/Bay: ASN, ARN, and 5400

## Cisco IOS Software and Memory Requirements

The Cisco 3600 Series in distribution ships with:

- 8-MB Flash memory
- 32-MB DRAM memory

To run the Cisco IOS Feature Packs, you need the following amount of memory:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required <sup>1</sup>	DRAM Memory Required
<b>Cisco 3620 and 3640</b>				
CD36-C-12.0.5=	IP only	12.0(5)XK1	8 MB	24 MB
CD36-CP-12.0.5=	IP Plus	12.0(5)XK1	8 MB	32 MB
CD36-CH-12.0.5=	IP/FW	12.0(5)XK1	8 MB	32 MB
CD36-CHL-12.0.5=	IP/FW Plus IPSec 56	12.0(5)XK1	<b>16 MB</b>	<b>48 MB</b>
CD36-CHK2-12.0.5=	IP/FW Plus IPSec 3DES	12.0(5)XK1	8 MB	32 MB
CD36-CK2-12.0.5=	IP/ Plus IPSec 3DES	12.0(5)XK1	8 MB	32 MB
CD36-CL-12.0.5=	IP Plus IPSec 56	12.0(5)XK1	8 MB	32 MB
CD36-B-12.0.5=	IP/IPX/AppleTalk/DECnet	12.0(5)XK1	8 MB	24 MB
CD36-BP-12.0.5=	IP/IPX/AppleTalk/DECnet Plus	12.0(5)XK1	<b>16 MB</b>	32 MB
CD36-BHP-12.0.5=	IP/IPX/AT/DEC/FW Plus	12.0(5)XK1	<b>16 MB</b>	<b>48 MB</b>
CD36-AP-12.0.5=	Enterprise Plus	12.0(5)XK1	<b>16 MB</b>	<b>48 MB</b>
CD36-AL-12.0.5=	Enterprise Plus IPSec 56	12.0(5)XK1	<b>16 MB</b>	<b>48 MB</b>
CD36-AHK2-12.0.5=	Enterprise/FW Plus IPSec 3DES	12.0(5)XK1	<b>16 MB</b>	<b>48 MB</b>
CD36-AHL-12.0.5=	Enterprise/FW Plus IPSec 56	12.0(5)XK1	<b>16 MB</b>	<b>48 MB</b>
<b>Cisco 3660</b>				
CD36-C-12.0.5=	IP only	12.0(5)XK1	8 MB	32 MB SDRAM
CD36-CP-12.0.5=	IP Plus	12.0(5)XK1	8 MB	32 MB SDRAM
CD36-CH-12.0.7=	IP/FW	12.0(7)T <sup>2</sup>	8 MB	32 MB SDRAM
CD36-CHL-12.0.7=	IP/FW Plus IPSec 56	12.0(7)T <sup>2</sup>	<b>16 MB</b>	<b>48 MB SDRAM</b>
CD36-CHK2-12.0.7=	IP/FW Plus IPSec 3DES	12.0(7)T <sup>2</sup>	8 MB	32 MB SDRAM
CD36-CK2-12.0.7=	IP/ Plus IPSec 3DES	12.0(7)T <sup>2</sup>	8 MB	32 MB SDRAM
CD36-CL-12.0.5=	IP Plus IPSec 56	12.0(5)XK1	<b>16 MB</b>	32 MB SDRAM
CD36-B-12.0.5=	IP/IPX/AppleTalk/DECnet	12.0(5)XK1	8 MB	24 MB SDRAM
CD36-BP-12.0.5=	IP/IPX/AppleTalk/DECnet Plus	12.0(5)XK1	<b>16 MB</b>	32 MB SDRAM
CD36-BHP-12.0.7=	IP/IPX/AT/DEC/FW Plus	12.0(7)T <sup>2</sup>	<b>16 MB</b>	<b>48 MB SDRAM</b>
CD36-AP-12.0.5=	Enterprise Plus	12.0(5)XK1	<b>16 MB</b>	<b>48 MB SDRAM</b>
CD36-AL-12.0.5=	Enterprise Plus IPSec 56	12.0(5)XK1	<b>16 MB</b>	<b>48 MB SDRAM</b>
CD36-AHK2-12.0.5=	Enterprise/FW Plus IPSec 3DES	12.0(5)XK1	<b>16 MB</b>	<b>48 MB SDRAM</b>
CD36-AHL-12.0.7=	Enterprise/FW Plus IPSec 56	12.0(7)T <sup>2</sup>	<b>16 MB</b>	<b>48 MB SDRAM</b>

1. Bold numbers indicate that more memory than the default amount is needed to run the Feature Pack.

2. IOS image release 12.0(7)T will ship in January 2000.

## Distribution Part Numbers and Ordering Information

### Cisco 3600 Series Router Chassis<sup>1</sup>

CISCO3620	2-slot Modular Router-AC Power Supply, IP s/w
CISCO3620-DC	2-slot Modular Router-DC Power Supply, IP s/w
CISCO3620-RPS	2-slot Modular Router, w/ RPS, IP s/w
CISCO3640	4-slot Modular Router-AC Power Supply, IP s/w
CISCO3640-DC	4-slot Modular Router-DC Power Supply, IP s/w
CISCO3640-RPS	4-slot Modular Router, w/ RPS, IP s/w
CISCO3661-DC	10/100 E Cisco 3660 6-slot Modular Router-DC with IP SW
CISCO3661-AC	10/100 E Cisco 3660 6-slot Modular Router-AC with IP SW
CISCO3662-DC	Dual 10/100 E Cisco 3660 6-slot Modular Router-DC with IP SW
CISCO3662-AC	Dual 10/100 E Cisco 3660 6-slot Modular Router-AC with IP SW

### Cisco 3600 Series Bundles

3640MBUNDLE-4B-S/T	3640 BRI Dial bundle. Includes 1E2W,12DM, 4 BRI-S/T, IP IOS
3640MBUNDLE-4B-U	3640 BRI Dial bundle. Includes 1E2W,12DM, 4 BRI-U, IP IOS
3640MBUNDLE-8B-S/T	3640 BRI Dial bundle. Includes 1E2W,18DM, 8 BRI-S/T, IP IOS
3640MBUNDLE-8B-U	3640 BRI Dial bundle. Includes 1E2W,18DM, 8 BRI-U, IP IOS
3620MBUNDLE-24DM	3620 PRI Dial bundle. Includes 1FE2CT1-CSU, 24DM, IP IOS
3620MBUNDLE-30DM	3620 PRI Dial bundle. Includes 1FE2CE1-U, 30DM, IP IOS
AS3640-T1-48DM	3600 Access Concentrator, 48 MICA Modems, 2 PRI/T1, Ethernet, IP IOS
AS3640-E1-60DM	3600 Access Concentrator, 60 MICA Modems, 2 PRI/E1, Ethernet, IP IOS

### Cisco 3600 Series LAN/Combo Network Modules

NM-1E=	1-port 10bT Network Module
NM-4E=	4-port 10bT Network Module
NM-1FE-TX=	1-port 100bTX Network Module
NM-1FE-FX=	1-port 100bFX Network Module
NM-1E2W=	1-port 10bT, 2 WIC Slots Network Module
NM-2E2W=	2-port 10bT, 2 WIC Slots Network Module
NM-1E1R2W=	1-port 10bT, 1-port Token Ring, 2 WIC Slots Network Module
NM-1FE1CT1=	1-port 100bTX, 1-port Channelized T1/ISDN-PRI Network Module
NM-1FE1CT1-CSU=	1-port 100bTX, 1-port Channelized T1/ISDN-PRI with CSU Network Module
NM-1FE1CE1B=	1-port 100bTX, 1-port Channelized E1/ISDN-PRI (Balanced) Network Module
NM-1FE1CE1U=	1-port 100bTX, 1-port Channelized E1/ISDN-PRI (Unbalanced) Network Module
NM-1FE2CT1=	1-port 100bTX, 2-port Channelized T1/ISDN-PRI Network Module
NM-1FE2CT1-CSU=	1-port 100bTX, 2-port Channelized T1/ISDN-PRI with CSU Network Module
NM-1FE2CE1B=	1-port 100bTX, 2-port Channelized E1/ISDN-PRI (Balanced) Network Module
NM-1FE2CE1U=	1-port 100bTX, 2-port Channelized E1/ISDN-PRI (Unbalanced) Network Module

### Cisco 3600 Series WAN Interface Cards (WICs)

WIC-1B-S/T=	1-port ISDN WAN Interface Card (Dial and Leased Line)
WIC-1B-U=	1-port BRI (U) w/ NT-1 WAN Interface Card (Dial and Leased Line)
WIC-1DSU-56K4=	1-port Serial w/ 4-Wire 56/64Kbps DSU/CSU WAN Interface Card
WIC-1DSU-T1=	1-port Serial w/ FrT1/T1 DSU/CSU WAN Interface Card
WIC-1T=	1-port Serial WAN Interface Card

### Cisco 3600 Multiflex Voice/WAN Interface Cards

VVIC-1MFT-T1=	1-port RJ-48 Multiflex Trunk - T1
VVIC-2MFT-T1=	2-port RJ-48 Multiflex Trunk - T1
VVIC-2MFT-T1-DI=	2-port RJ-48 Multiflex Trunk - T1 With Drop and Insert
VVIC-1MFT-E1=	1-port RJ-48 Multiflex Trunk - E1
VVIC-2MFT-E1=	2-port RJ-48 Multiflex Trunk - E1
VVIC-2MFT-E1-DI=	2-port RJ-48 Multiflex Trunk - E1 With Drop and Insert

### Cisco 3600 Series Voice/Fax Network Modules

NM-1V=	1-slot voice/fax network module
NM-2V=	2-slot voice/fax network module
NM-HDV-1T1-24=	1-port T1 24 channel voice/fax network module
NM-HDV-1T1-24E=	1-port T1 24 enhanced channel voice/fax network module
NM-HDV-2T1-48=	2-port T1 48 channel voice/fax network module
NM-HDV-1E1-30=	1-port E1 30 channel voice/fax network module
NM-HDV-1E1-30E=	1-port E1 30 enhanced channel voice/fax network module
NM-HDV-2E1-60=	2-port E1 60 channel voice/fax network module
NM-HDV=	1-slot high-density voice network module (no T1/E1 or DSPs)

### Cisco 2600 and 3600 Series High-Density Voice/Fax DSP Upgrade Modules

PVDM-12=	12-channel Packet Voice/Fax DSP Module upgrade spare
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**Cisco 3600 Series Voice Interface (VIC) Cards**

VIC-2E/M=	2-port Voice Interface Card - E&M
VIC-2FX0=	2-port Voice Interface Card - FX0
VIC-2FXS=	2-port Voice Interface Card - FXS
VIC-2BRI-S/T-TE=	2-port Voice Interface Card - BRI (S/T user side)
VIC-2FX0-EU=	2-port Voice Interface Card - FX0 (for Europe)
VIC-2FX0-M3=	2-port FX0 Voice Interface Card (for Australia)
VIC-2FX0-M1=	2-port Voice Interface Card - FX0 w/ Reversal (for US+)
VIC-2FX0-M2=	2-port Voice Interface Card - FX0 w/ Reversal (for EU)

**Cisco 3600 Series WAN Modules**

NM-4B-S/T=	4-port BRI (S/T) Module
NM-8B-S/T=	8-port BRI (S/T) Module
NM-4B-U=	4-port BRI (U) w/ NT-1 Module
NM-8B-U=	8-port BRI (U) w/ NT-1 Module
NM-4T=	4-port Serial Module
NM-4A/S=	4-port Async/Sync Serial Module
NM-8A/S=	8-port Async/Sync Serial Module
NM-16A=	16-port Async Module
NM-32A=	32-port Async Module
NM-1CT1=	1-port Channelized T1/ISDN-PRI Module
NM-1CT1-CSU=	1-port Channelized T1/ISDN-PRI w/ CSU Module
NM-2CT1=	2-port Channelized T1/ISDN-PRI Module
NM-2CT1-CSU=	2-port Channelized T1/ISDN-PRI w/ CSU Module
NM-1HSSI=	1-port HSSI Module
NM-1ATM-25	1-port ATM 25 Module
NM-COMPR=	Compression Module
NM-1A-OC3MM=	Single-Port 155-Mbps ATM OC-3 Multimode Network Module
NM-1A-OC3SMI=	Single-Port 155-Mbps ATM OC-3 Single-Mode Intermediate Reach Network Module
NM-1A-OC3SML=	Single-Port ATM 155-Mbps OC-3 Single-Mode Long-Reach Network Module
NM-4T-IMA=	4-port T1 ATM with Inverse Multiplexing over ATM (IMA) network module
NM-4E-IMA =	4-port E1 ATM with IMA network module +
NM-8T-IMA =	8-port T1 ATM with IMA network module +
NM-8E-IMA=	8-port E1 ATM with IMA network module +
AIM-COMPR4=	Data Compression AIM for the 3600 series

**Cisco 3600 Series Modem Modules**

NM-6DM=	6-port Digital Modem Module
NM-8AM=	8-port Analog Modem Module
NM-12DM=	12-port Digital Modem Module
NM-16AM=	16-port Analog Modem Module
NM-18DM=	18-port Digital Modem Module
NM-24DM=	24-port Digital Modem Module
NM-30DM=	30-port Digital Modem Module
MICA-6MOD=	6-port Digital Modem Module (Spare)

**Cisco 2600 and 3600 Series Network Modules (International)**

NM-1CE1B=	1-port Channelized E1/ISDN-PRI balanced network module
NM-1CE1U=	1-port Channelized E1/ISDN-PRI unbalanced network module
NM-2CE1B=	2-port Channelized E1/ISDN-PRI balanced network module
NM-2CE1U=	2-port Channelized E1/ISDN-PRI unbalanced network module

**Cisco 3600 Series Modem Management Technology Licenses<sup>2</sup>**

MMTL-3600-6=	Modem Management Technology License (6 modems)
MMTL-3600-12=	Modem Management Technology License (12 modems)
MMTL-3600-18=	Modem Management Technology License (18 modems)
MMTL-3600-24=	Modem Management Technology License (24 modems)
MMTL-3600-30=	Modem Management Technology License (30 modems)
MMTL-3600/2600-8=	Modem Management Technology License (for 8 Analog Modems)
MMTL-3600/2600-16=	Modem Management Technology License (for 16 Analog Modems)

**Cisco 3600 Series Software Feature Packs**

CD36-C-12.0.5=	IP only Feature Pack
CD36-CH-12.0.5=	IP/FW Feature Pack
CD36-CHK2-12.0.5=	IP/FW Plus IPSec 3DES Feature Pack
CD36-CK2-12.0.5=	IP Plus IPSec 3DES Feature Pack
CD36-CP-12.0.5=	IP Plus Feature Pack
CD36-CL-12.0.5=	IP Plus IPSec 56 Feature Pack

CD36-CHL-12.0.5=	IP/FW Plus IPsec 56 Feature Pack
CD36-B-12.0.5=	IP/IPX/AppleTalk/DECnet Feature Pack
CD36-BP-12.0.5=	IP/IPX/AppleTalk/DECnet Plus Feature Pack
CD36-BHP-12.0.5=	IP/IPX/AT/DEC/FW Plus Feature Pack
CD36-AP-12.0.5=	Enterprise Plus Feature Pack
CD36-AL-12.0.5=	Enterprise Plus IPsec 56 Feature Pack
CD36-AHL-12.0.5=	Enterprise/FW Plus IPsec 56 Feature Pack
CD36-AHK2-12.0.5=	Enterprise/FW Plus IPsec 3DES Feature Pack

### Cisco 3600 Series Memory Options

MEM3600-4FC=	Cisco 3600 Series 4 MB Flash PCMCIA Card
MEM3600-8FC=	Cisco 3600 Series 8 MB Flash PCMCIA Card
MEM3600-16FC=	Cisco 3600 Series 16MB Flash Card
MEM3600-4FS=	Cisco 3600 Series 4 MB Flash
MEM3600-8FS=	Cisco 3600 Series 8 MB Flash
MEM3600-16FS=	Cisco 3600 Series 16 MB Flash
MEM3600-2X8FS=	Cisco 3600, 16 MB Flash (2x8 MB Flash SIMMs)
MEM3600-2X16FS=	Cisco 3600, 32 MB Flash (2x16 MB Flash SIMMs)
MEM3620-4D=	Cisco 3620, 4 MB DRAM SIMM
MEM3620-8D=	Cisco 3620, 8 MB DRAM SIMM
MEM3620-16D=	Cisco 3620, 16 MB DRAM SIMM
MEM3640-2X4D=	Cisco 3640, 8 MB DRAM (2x4 MB DRAM SIMMs)
MEM3640-2X8D=	Cisco 3640, 16 MB DRAM (2x8 MB DRAM SIMMs)
MEM3640-2X16D=	Cisco 3640, 32 MB DRAM (2x16 MB DRAM SIMMs)
MEM3640-2X32D=	Cisco 3640, 64 MB DRAM (2x32MB DRAM SIMMs)
MEM3640-4X32D=	Cisco 3640, 128 MB DRAM (4x32MB DRAM SIMMs)
MEM3660-32D=	Cisco 3660, 32 MB SDRAM Field Upgrade
MEM3660-128D=	Cisco 3660, 128 MB SDRAM Field Upgrade
MEM3660-2X64D=	Cisco 3660, 128 MB SDRAM (2x64 MB Flash DIMMs)
MEM3660-2X128D=	Cisco 3660, 256 MB Flash (2x128 MB Flash DIMMs)
BOOT-3600=	Boot ROM Upgrade for Cisco 3600

### Cisco 3600 Series Accessories

ACS-3620RM-19=	Cisco 3620 - 19-Inch Rack Mount Kit
ACS-3620RM-24=	Cisco 3620 - 24-Inch Rack Mount Kit
PWR-3620-AC	Cisco 3620 - AC Power Supply
PWR-3620-DC	Cisco 3620 - DC Power Supply
ACS-3620RPS=	Cisco 3620 - RPS Field Upgrade
ACS-3640RM-19=	Cisco 3640 - 19-Inch Rack Mount Kit
ACS-3640RM-24=	Cisco 3640 - 24-Inch Rack Mount Kit
PWR-3640-AC	Cisco 3640 - AC Power Supply
PWR-3640-DC	Cisco 3640 - DC Power Supply
ACS-3640RPS=	Cisco 3640 - RPS Field Upgrade
NM-BLANK-PANEL=	Blank Network Module Panel
WIC-BLANK-PANEL=	Blank WAN Interface Card Panel
ACS-3660RM-19	19 inch Rack Mount Kit for the Cisco 3660
ACS-3660RM-23	23 inch Rack Mount Kit for the Cisco 3660
ACS-3660RM-24	24 inch Rack Mount Kit for the Cisco 3660
ACS-3660 NEBS/ETSI=	NEBS/ETSI Central Office Auxiliary Kit for Cisco 3660
PWR-3660-AC	AC Power Supply for Cisco 3660
PWR-3660-DC	DC Power Supply for Cisco 3660

### Cisco 3600 Series Basic Maintenance

CON-SNT-PKG7	Cisco 3620 SMARTnet Maintenance
CON-SNT-PKG10	Cisco 3640 SMARTnet Maintenance
CON-SNT-PKG14	Cisco 3661 SMARTnet Maintenance
CON-SNT-PKG15	Cisco 3652 SMARTnet Maintenance

- For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)
- Requires Plus feature pack.

## For More Information

See the Cisco 3600 Series Website: <http://www.cisco.com/go/3600>

## Cisco MC3810 Multiservice Concentrator



The Cisco MC3810 multiservice, integrated access platform enables organizations to integrate all traffic—voice, fax, video, legacy data, and LAN traffic—over a single network backbone. The Cisco MC3810 multiservice access concentrator can be deployed over private or public networks, dramatically reducing equipment and connection costs, simplifying network management, and improving application performance. The Cisco MC3810 combines switched voice, LAN traffic, and legacy data over Frame Relay, ATM, or leased lines at speeds up to T1/E1. The MC3810 is based on Cisco IOS software and is designed to operate with all IOS-based routers, the Cisco IGX™ 8400, and the LightStream® 1010.

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### When to Sell

#### Sell This Product

##### Cisco MC3810

#### When a Customer Needs These Features

- Reduce access charges by integrating private branch exchange (PBX), video, and router access lines
- Multiservice branch connectivity
- Reduce interoffice voice costs (toll bypass)
- Voice ports can be analog or digital (channelized)
- Improve bandwidth efficiency by replacing TDM equipment

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### Key Features

- Seamlessly integrates data, voice, and video
- Leased line, Frame Relay, and ATM service compatible
- Complete Cisco IOS-based multiprotocol routing, bridging, and Systems Network Architecture (SNA)
- Quality voice compression at 8 kbps (G.729, G.729a), 32 kbps (adaptive differential pulse code modulation [ADPCM]), or 64 kbps pulse code modulation
- Wire-speed T1/E1 router and serial data device with voice, video, and ATM capability

## Specifications

Feature	Cisco MC3810
<b>Fixed LAN Ports (connections)</b>	1-port Ethernet (10BaseT)
<b>Fixed WAN Ports (connections)</b>	2-port sync serial (DB-60)
<b>Modular Slots</b>	3
<b>Voice Modules</b>	6-port analog voice 1-port digital voice 4-port BRI voice 1-port RS-366 video module
<b>WAN Modules</b>	1-port channelized T1/E1 multiflex trunk with optional BRI backup
<b>Processor Speed (type)</b>	40 MHz (Motorola 860 Power PC)
<b>Flash Memory</b>	8 MB (default) 16 MB (max)
<b>DRAM Memory</b>	32 MB (default)
<b>Power Supply</b>	AC; optional DC and redundant
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.25 in.
<b>Service Category</b>	7

## Competitive Products

- Ascend: SA100 and SA50
- Lucent: Yuri AC 10 and AC 10x
- Motorola: Vanguard 64xx, 3xx, 6520, and 6560 MP Router
- Newbridge: 3606, 3608, 3612, and 3620 Main Street products
- Nortel: Passport 4430/4450/4700

## Cisco IOS Software and Memory Requirements

The Cisco MC3810 in distribution ships with:

- 8-MB Flash memory
- 32-MB DRAM memory

To run the Cisco IOS Feature Packs, you need the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required	DRAM Memory Required
CD381-C-12.0.5=	IP	12.0.5T	4 MB	16 MB
CD381-CP-12.0.5=	IP Plus	12.0.5T	8 MB	32 MB
CD381-AP-12.0.5=	Enterprise Plus	12.0.5T	8 MB	32 MB
CD381-CM3P-12.0.5=	IP Plus/ATM Plus	12.0.5T	8 MB	32 MB
CD381-AM3P-12.0.5=	Enterprise Plus/ATM Plus	12.0.5T	8 MB	32 MB

## Distribution Part Numbers and Ordering Information

### Cisco MC3810 Multiservice Access Concentrator<sup>1</sup>

MC3810-V-AL	Cisco MC3810 Voice Ready Analog Low Density
MC3810-V-AH	Cisco MC3810 Voice Ready Analog High Density
MC3810-V-DL	Cisco MC3810 Voice Ready Digital Low Density
MC3810-V-DH	Cisco MC3810 Voice Ready Digital High Density
MC3810-V-R	Cisco MC3810 Voice Ready

### Cisco MC3810 Modules

MC3810-MFT-BNC=	3810 Multiflex Trunk w/ E1-BNC Interface
MC3810-MFT-E1=	3810 Multiflex Trunk w/ RJ-48 E1 Interface
MC3810-MFT-T1=	3810 Multiflex Trunk w/ RJ-48 T1 Interface
MC3810-MFT-TBS=	Multiflex Trunk w/ RJ-48 T1 and BRI S/T Interfaces
MC3810-APM-EM=	E&M Analog Personality Module
MC3810-FXO-UK=	FXO Analog Personality Module for UK
MC3810-FXO-GER=	FXO Analog Personality Module for Germany
MC3810-APM-FXO=	FXO Analog Personality Module
MC3810-APM-FXS=	FXS Analog Personality Module
MC3810-AVM6=	6-port Analog Voice Interface
MC3810-DVM-BNC=	MC3810 E1 Unbalanced Digital Voice Interface
MC3810-DVM-E1=	MC3810 Digital Voice Interface E1 Card
MC3810-DVM-T1=	MC3810 Digital Voice Interface T1 Card
MC3810-VCM3=	3 DSP Voice Compression Module
MC3810-VCM6=	6 DSP Voice Compression Module
MC3810-VDM=	MC3810 Video Dial Module

### Cisco MC3810 Software Feature Packs

CD381-C-12.0.5=	Cisco MC3810, IP Feature Pack
CD381-CP-12.0.5=	Cisco MC3810, IP Plus Feature Pack
CD381-AP-12.0.5=	Cisco MC3810, Enterprise Plus Feature Pack
CD381-CM3P-12.0.5=	Cisco MC3810, IP Plus/ATM Plus Feature Pack
CD381-AM3P-12.0.5=	Cisco MC3810, Enterprise Plus/ATM Plus Feature Pack

### Cisco MC3810 Memory Options

MEM-381-1X8F=	Cisco MC3810, 8 MB Flash Memory (spare)
MEM-381-1X16F=	Cisco MC3810, 16 MB Flash Memory (spare)
MEM-381-1X32D=	Cisco MC3810, 32 MB DRAM Memory

### Cisco MC3810 Accessories

MC3810-DC48=	MC3810, -48 VDC Power Supply (Spare)
MC3810-AC40=	MC3810, 100-220VAC Power Supply (Spare)

### Cisco MC3810 Basic Maintenance

CON-SNT-PKG7	Cisco 3810 Series SMARTnet Maintenance
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- For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco MC3810 Web site: <http://www.cisco.com/go/3800>

## Cisco 4000 Series

The Cisco 4000 Series routers are the leading modular midrange/regional routers in the industry. The modular interfaces supported include Ethernet, Fast Ethernet, TokenRing, ISDN Basic Rate Interface (BRI), ISDN Primary Rate Interface (PRI), serial and channelized T1/E1, async, ATM, Fiber Distributed Data Interface (FDDI), and High-Speed Serial Interface (HSSI).



The full suite of high-speed LAN support (Fast Ethernet, FDDI, ATM) provides the investment protection necessary for a platform that can grow with the increased local bandwidth generated from multimedia applications and the migration from a shared to a switched environment. Their high-performance RISC CPUs make the Cisco 4500-M and 4700-M excellent choices for supporting software functionality that is either calculation intensive or process switched. This performance, in conjunction with high-density synchronous and asynchronous serial interfaces, makes the Cisco 4000 Series a particularly good fit for integrating legacy equipment and protocols such as SNA into a robust, end-to-end IP network.

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### When to Sell

#### Sell This Product

##### Cisco 4500-M

#### When a Customer Needs These Features

- Full suite of high-speed media (Fast Ethernet, FDDI, ATM, HSSI)
- Calculation-intensive or process-switched Cisco IOS software features such as encryption and compression, certain IBM protocols, protocol translation, and X.25 switching
- High-density LAN connectivity (up to 12 Ethernet ports, or 6 Token Ring ports, or a combination thereof)
- Legacy environments requiring high-density synchronous and asynchronous serial support

##### Cisco 4700-M

- 30-50 percent higher performance for future growth, multiple high-speed interfaces, or configurations with multiple Cisco IOS security, QoS, and accounting features enabled
- 64-MB main memory for large Internet route tables

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### Key Features

- Supports a full suite of Cisco IOS feature sets; customers can cost-effectively choose from a rich set of protocols (IP, Internetwork Packet Exchange [IPX], AppleTalk, DEC, VINES, and so on), QoS, security, redundancy and WAN optimization, and management and accounting features supported by the Cisco IOS software
- High-performance RISC architecture to support high-speed media (Fast Ethernet, ATM, FDDI, HSSI) and calculation/process switching-intensive features
- Optional redundant power system for very high reliability

## Specifications

Feature	Cisco 4500-M	Cisco 4700-M
<b>Fixed Ports</b>	None	None
<b>Modular Slots</b>	3	3
<b>LAN Modules</b>	2-port 10 MB, Full Duplex 6-port 10BaseT Module 1-port 10BaseTX Module 1-port Token Ring Module 2-port Token Ring Module 1-port FDDI Module- Dual-Attached, multimode 1-port FDDI Module- Dual-Attached, single mode 1-port FDDI Module- Single-Attached	Same as Cisco 4500-M
<b>WAN Modules</b>	4-port BRI (S/T) 8-port BRI (S/T) 2-port Serial 4-port Serial 2-port Serial, 16-port Async/Sync Serial (low speed) w/ EIA/TIA232 & V.35 Support 2-port Serial, 16-port Async/Sync Serial (low speed) w/ EIA/TIA232 & X21 Support 2-port Serial, 16-port Async/Sync Serial (low speed) w/ EIA/TIA232 Support 2-port Serial, 16-port Async/Sync Serial (low speed) w/ V.35 Support 2-port Serial, 16-port Async/Sync Serial w/ X.21 Support 1-port Channelized T1/PRI 1-port HSSI	Same as Cisco 4500-M
<b>Processor Speed (type)</b>	100-MHz (IDT Orion RISC)	133-MHz (IDT Orion RISC)
<b>Flash Memory</b>	4 MB (default) 16 MB (max)	4 MB (default) 16 MB (max)
<b>Shared Memory</b>	4 MB (default) 8 or 16 MB (max)	4 MB (default) 16 MB (max) Secondary cache memory 512 KB
<b>DRAM Memory</b>	16 MB (default) 32 MB (max)	16 MB (default) 32 or 64 MB (max)
<b>Power Supply</b>	AC, DC, and RPS options	AC, DC, and RPS options
<b>Dimensions (HxWxD)</b>	3.4 x 17.6 x 17.7 in.	3.4 x 17.6 x 17.7 in.
<b>Service Category</b>	11	12

## Competitive Products

- 3Com: NETBuilder II
- Bay: ASN

## Cisco IOS Software and Memory Requirements

The Cisco 4000 Series in distribution ships with

- 4-MB Flash memory
- 16-MB DRAM memory

To run the Cisco IOS Feature Packs, you need the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required <sup>1</sup>	DRAM Memory Required <sup>1</sup>
CD45-C-11.3=	IP Only	11.3(5)T	4 MB	16 MB
CD45-CL-11.3=	IP Plus IPSEC 56	11.3(5)T	<b>8 MB</b>	<b>32 MB</b>
CD45-CP-11.3=	IP Plus	11.3(5)T	<b>8 MB</b>	16 MB
CD45-CW-11.3=	IP Plus 40	11.3(5)T	<b>8 MB</b>	<b>32 MB</b>
CD45-CY-11.3=	IP Plus 56	11.3(5)T	<b>8 MB</b>	16 MB
CD45-B-11.3=	IP/IPX/AppleTalk/DECnet	11.3(5)T	4 MB	16 MB
CD45-BP-11.3=	IP/IPX/AppleTalk/DECnet Plus	11.3(5)T	<b>8 MB</b>	16 MB
CD45-AP-11.3=	Enterprise Plus	11.3(5)T	<b>8 MB</b>	<b>32 MB</b>
CD45-AW-11.3=	Enterprise Plus 40	11.3(5)T	<b>8 MB</b>	<b>32 MB</b>
CD45-AY-11.3=	Enterprise Plus 56	11.3(5)T	<b>8 MB</b>	<b>32 MB</b>
CD45-AL-11.3=	Enterprise Plus IPsec 56	11.3(5)T	<b>8 MB</b>	16 MB

1. Bold numbers indicate that more memory than the default amount is needed to run the Feature Pack.

## Distribution Part Numbers and Ordering Information

### Cisco 4000 Series Router Chassis<sup>1</sup>

CISCO4500-M-CH	3-slot Modular Chassis (100-MHz Processor), IP s/w
CISCO4700-M-CH	3-slot Modular Chassis (133-MHz Processor), IP s/w

### Cisco 4000 Series LAN Modules

NP-2E-FDX=	2-port 10bTX (full duplex)
NP-6E=	6-port 10bT Module
NP-1FE=	1-port 100bTX Module
NP-1RV2=	1-port Token Ring Module
NP-2R=	2-port Token Ring Module
NP-1F-D-MM=	1-port FDDI Module (dual-attached, multimode)
NP-1F-D-SS=	1-port FDDI Module (dual-attached, single mode)
NP-1F-S-M=	1-port FDDI Module (single-attached)

### Cisco 4000 Series WAN Modules

NP-4B=	4-port BRI (S/T) Module
NP-8B=	8-port BRI (S/T) Module
NP-2T=	2-port Serial Module
NP-4T=	4-port Serial Module
NP-CT1=	1-port Channelized T1/PRI Module
NP-2T16S-232V35=	2-port Serial, 16-port Async/Sync Serial (low speed) w/ RS232 & V.35 Support
NP-2T16S-232X21=	2-port Serial, 16-port Async/Sync Serial (low speed) w/ RS232 & X21 Support
NP-2T16S-RS232=	2-port Serial, 16-port Async/Sync Serial (low speed) w/ RS232 Support
NP-2T16S-X21=	2-port Serial, 16-port Async/Sync Serial w/ X.21 Support
NP-2T16S-V.35=	2-port Serial, 16-port Async/Sync Serial (low speed) w/ V.35Support
NP-1HSSI=	1-port HSSI Module

### Cisco 4000 Series Network Modules (International)

NP-CE1B=	1-port Channelized E1/PRI NPM balanced
NP-CE1U=	1-port Channelized E1/PRI NPM unbalanced

### Cisco 4000 Series Software Feature Packs

CD45-C-11.3=	Cisco 4500/4700 IP Feature Pack
CD45-CL-11.3=	Cisco 4500/4700 IP Plus IPSEC 56 Feature Pack
CD45-CP-11.3=	Cisco 4500/4700 IP Plus Feature Pack

CD45-CW-11.3=	Cisco 4500/4700 IP Plus 40 Feature Pack
CD45-CY-11.3=	Cisco 4500/4700 IP Plus 56 Feature Pack
CD45-B-11.3=	Cisco 4500/4700 IP/IPX/AppleTalk/DECnet Feature Pack
CD45-BP-11.3=	Cisco 4500/4700 IP/IPX/AppleTalk/DECnet Plus Feature Pack
CD45-AP-11.3=	Cisco 4500/4700, Enterprise Plus Feature Pack
CD45-AW-11.3=	Cisco 4500/4700, Enterprise Plus 40 Feature Pack
CD45-AY-11.3=	Cisco 4500/4700, Enterprise Plus 56 Feature Pack
CD45-AL-11.3=	Cisco 4500/4700, Enterprise Plus IPsec 56 Feature Pack

#### **Cisco 4000 Series Memory Options**

MEM-4500M-4F=	Cisco 4500/4700, 4 MB Flash Upgrade
MEM-4500M-16F=	Cisco 4500/4700, 16 MB Flash Upgrade
MEM-4500M-8S=	Cisco 4500/4700, 8 MB Shared Upgrade
MEM-4500M-16S=	Cisco 4500/4700, 16 MB Shared Upgrade
MEM-4500M-16D=	Cisco 4500/4700, 16 MB Main Upgrade
MEM-4500M-32D=	Cisco 4500/4700, 32 MB Main Upgrade
MEM-4700M-64D=	Cisco 4700, 64 MB Main Upgrade (for Cisco 4700M only)

#### **Cisco 4000 Series Accessories**

ACS-NPRM=	Cisco 4000 Series, 19-Inch Rack Mount Kit
ACS-4000RPS=	Cisco 4000 Series, RPS Field Upgrade

#### **Cisco 4000 Series Basic Maintenance**

CON-SNT-PKG11	Cisco 4500 Series SMARTnet Maintenance
CON-SNT-PKG12	Cisco 4700 Series SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## **For More Information**

See the Cisco 4000 Series Website: <http://www.cisco.com/go/4000>

## Cisco AS5300 Series

The AS5300 is a high-performance, high-density universal access server that delivers hybrid asynchronous serial and ISDN line service to accommodate both mobile users and high-bandwidth users. By terminating analog modem, ISDN,



and voice calls on the same chassis from the same trunk line, the AS5300 enables ISPs and enterprise network managers to meet traditional analog dial access needs, while supporting the growing demand for multiservice access. Also available are the high-end dial platforms—AS5800 and AccessPath.

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### When to Sell

#### Sell This Product

##### Cisco AS5300

#### When a Customer Needs These Features

- High performance async/ ISDN/VoIP
- IP telephony option
- Full range of Cisco IOS options
- Best-of-breed modem management
- Distributed access pools with WAN backhaul

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### Key Features

- Universal access provides the ability to answer ISDN, 56K modem, and voice calls
- Full support for Cisco IOS software
- Industry-leading price/performance in the remote access market
- Scalability and investment protection through redundant backhaul support
- Key component of Dial Access Stack Architecture (DASA)
- Supports all protocols and services on all asynchronous ports—including users dialing in, as well as asynchronous routing and users dialing out
- Accommodates eight PRI/TI or PRI/EI lines
- One 10-MB and one 10/100 MB Ethernet to allow for redundant, high-speed backhaul
- Terminates up to 240 concurrent modem/ISDN data calls or up to 120 voice and FAX calls (E1)
- Voice over IP-capable
- SS7 interoperability with signaling gateway

## Specifications

Feature	AS5300
<b>Fixed LAN Ports (connections)</b>	2-port Ethernet (one 10BaseT and one 100BaseT)
<b>Fixed WAN Ports (connections)</b>	4-port PRI (T1/E1) 8-port PRI (T1/E1) 4-port T1/E1 sync serial
<b>Modular Slots</b>	3
<b>Modules and Cards Available</b>	MICA Carrier Card Quad T1/PRI Card Quad E1/PRI Card-Balanced/Unbalanced Octal T1/PRI Card Octal E1/PRI Card-Balanced/Unbalanced VFC Carrier Card 6-port MICA Modem Module 12-port MICA Modem Module 6-port Voice Module 12-port Voice Module
<b>Processor Speed (type)</b>	150-MHz (R4700)
<b>Maximum Async Connections</b>	240
<b>Maximum Voice Sessions</b>	120
<b>Flash Memory</b>	8 MB Boot Flash (default) 16 MB System Flash (default)
<b>Shared Memory</b>	16 MB packet (default) 16 MB main (max)
<b>DRAM Memory</b>	64 MB
<b>Power Supply</b>	Single AC or DC (default) Internal Redundant AC or DC
<b>Dimensions (HxWxD)</b>	3.5 x 17.5 x 18.25 in.
<b>Service Category</b>	14

## Competitive Products

- 3Com: TCH HiPer
- Ascend: TNT
- Lucent: MAX 6000 and PM-3
- Nortel: CVX 1800

## Cisco IOS Software and Memory Requirements

The Cisco AS5300 in distribution ships with:

- 16-MB System Flash memory
- 64-MB DRAM memory
- 16-MB Shared memory
- 8-MB Boot Flash memory

To run the Cisco IOS Feature Packs, you need the amount of memory shown in the following table:

Distribution Part Number	Feature Pack Description	IOS Image Release	System Flash Memory Required	DRAM Memory Required	Shared Memory Required	Boot Flash Memory Required
CD53-C-12.0=	IP only	12.0.2XD	8 MB	32 MB	16 MB	4 MB
CD53-CP-12.0=	IP Plus	12.0.2XD	8 MB	32 MB	16 MB	4 MB
CD53-CL-12.0=	IP Plus IPSec 56	12.0.2XD	8 MB	32 MB	16 MB	4 MB
CD53-CW-12.0=	IP Plus 40	12.0.2XD	8 MB	32 MB	16 MB	4 MB
CD53-B-12.0=	Desktop	12.0.2XD	8 MB	32 MB	16 MB	4 MB
CD53-BP-12.0=	Desktop Plus	12.0.2XD	8 MB	32 MB	16 MB	4 MB
CD53-A-12.0=	Enterprise	12.0.2XD	8 MB	64 MB	16 MB	8 MB
CD53-AP-12.0=	Enterprise Plus	12.0.2XD	8 MB	64 MB	16 MB	8 MB
CD53-AL-12.0=	Enterprise Plus IPSec 56	12.0.2XD	8 MB	64 MB	16 MB	8 MB
CD53-AW-12.0=	Enterprise Plus 40	12.0.2XD	8 MB	64 MB	16 MB	8 MB

## Distribution Part Numbers and Ordering Information

### Cisco AS5300 Series Access Server Bundles<sup>1</sup>

AS53-48-CH	AS5301-CH, 48 Modems w/ Quad T1/PRI, IP s/w
AS53-96-CH	AS5301-CH, 96 Modems w/ Quad T1/PRI, IP s/w
AS53-96-RPS-CH	AS5301-CH, 96 Modems w/ Quad T1/PRI, RPS, IP s/w
AS53-120-RPS-CH	AS5300, 120 Modems, Quad E1/PRI, Redundant AC Power, IP IOS
AS53-192-DC-RPS-CH	AS5300, 192 Modems, Octal T1/E1/PRI, Redundant DC Power, IP IOS
AS53-96DMM-RPS-CH	AS5300, 96 DMM Modems, Octal T1/PRI, IP IOS, RPS

### Cisco AS5300 VoIP Bundles

AS5300-96VOIP-A	AS5300 VoIP Gateway-96 Voice Channels/4T1+,IOS IP+ S53CVP
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### Cisco AS5300 Series Modem Management Technology Licenses<sup>2</sup>

FR53-MMTL-48=	Modem Management Technology License (48 Modems)
FR53-MMTL-60=	Modem Management Technology License (60 Modems)
FR53-MMTL-96=	Modem Management Technology License (96 Modems)
FR53-MMTL-108=	Modem Management Technology License (108 Modems)
FR53-MMTL-120=	Modem Management Technology License (120 Modems)
FR53-MMTL-192=	Modem Management Technology License (192 Modems), spare

### Cisco AS5300 Series Software Feature Packs

CD53-C-12.0=	Cisco AS5300, IP only Feature Pack
CD53-CP-12.0=	Cisco AS5300, IP Plus Feature Pack
CD53-CL-12.0=	Cisco AS5300, IP Plus IPSec 56 Feature Pack
CD53-CW-12.0=	Cisco AS5300, IP Plus 40 Feature Pack
CD53-B-12.0=	Cisco AS5300, Desktop Feature Pack
CD53-BP-12.0=	Cisco AS5300, Desktop Plus Feature Pack
CD53-A-12.0=	Cisco AS5300, Enterprise Feature Pack
CD53-AP-12.0=	Cisco AS5300, Enterprise Plus Feature Pack
CD53-AL-12.0=	Cisco AS5300, Enterprise Plus IPSec 56 Feature Pack
CD53-AW-12.0=	Cisco AS5300, Enterprise Plus 40 Feature Pack

### Cisco AS5300 Series Memory Options

MEM-16F-AS53=	Cisco AS5300, 8 MB to 16 MB Flash Upgrade
MEM-64M-AS53=	Cisco AS5300, 32 MB to 64 MB Main DRAM Upgrade
MEM-8BF-AS53=	Cisco AS5300, 4 MB to 8 MB Boot Flash Upgrade

### Cisco AS5300 Feature Cards

AS53-4CT1=	QUAD T1/PRI Card
AS53-4CE1=	Quad E1/PRI Card-Balanced/Unbalanced, Spare
6DM=	MICA 6-Port Modem Module
12DMM=	12 Port Digital Modem Module (DMM), Spare
AS53-CC-DM=	MICA Carrier Card
AS53-4CT1+=	Quad T1/PRI Plus High Speed Serial, Spare
AS53-8CT1+=	Octal T1/PRI Plus High Speed Serial, Spare
AS53-CC2-DM=	HMM/DMM MICA2 Carrier Card, Spare
AS53-48-C=	MICA Carrier Card and 8 MICA 6-Port Modem Modules
AS53-96-CC2=	MICA CC2 carrier card and 8 MICA 12 port DMM modem modules

### Cisco AS5300 Series Accessories

AS5300RM-19=	Cisco AS5300, 19-Inch Rack Mount Kit
AS5300RM-24=	Cisco AS5300, 24-Inch Rack Mount Kit
AS53-AC-RPS=	Cisco AS5300, Dual AC Power Supply
AS53-192-RPS-CH	AS5300, 192 Modems, Octal T1/PRI, Redundant AC Power, IP IOS

### Cisco AS5300 Series Basic Maintenance

CON-SNT-PKG14	Cisco AS5300 Series SMARTnet Maintenance
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- For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)
- Requires Plus feature pack.

## For More Information

See the Cisco AS5300 Series Web site: <http://www.cisco.com/go/as5300>

## Cisco AS5300/Voice Gateway

The Cisco AS5300/Voice Gateway is an award-winning, high performance, Voice-over-IP (VoIP) gateway. It interfaces directly to digital switches, PBXs, and public telephone networks to carry/switch voice traffic across IP/packet networks. The AS5300/Voice Gateway is fully equipped with high-density Voice Feature Cards (VFCs) and voice-enabled Cisco IOS software, to support carrier-class VoIP and FAX-over-IP services. Furthermore, it is H.323v2 compliant and includes a family of industry voice CODECs including G.711 (64kb/s), G.729 (8kbps), and G.723.1 (5.3/6.3kbps), and also supports up to 14.4kbps Fax Relay. In addition to an integrated IVR system, it also includes RADIUS for generating call detail records (for billing and authentication) and SNMP for network/element management applications. This feature-rich platform supports a wide range of services including debit card, international wholesale voice, SS7, Internet call waiting, and much more.



The AS5300/Voice Gateway supports 96 voice/fax channels in the 4-T1 configuration, and 120 voice/fax channels in the 4-E1 configuration.

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### When to Sell

#### Sell This Product

##### Cisco AS5300/Voice Gateway

#### When a Customer Needs These Features

- Carrier class/industry leading voice quality: essential for SP applications, especially for the most demanding wholesale voice, long-distance voice, and corporate/enterprise applications; feature rich for value-added services
- Digital T1/E1/PRI interfaces and integrated CSUs: essential for interfacing to digital switches, PBXs, and PSTN around the world, with no additional equipment.

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### Key Features

- Industry leading and award-winning voice quality and performance
- Supports up to 96 voice calls in 4 T1 configuration
- Supports up to 120 voice/fax calls in 4 T1 configuration
- Deployed world-wide
- 2 RU (rack unit) form factor
- Provides easy, low cost entry into voice applications vs. expensive TDM products
- Highly scalable
- Supports Direct Inward Dial (DID) and 2-Stage applications with integrated IVR
- Perfect for Service Provider and Enterprise applications
- Interfaces to digital switches and PBXs

## Specifications

Feature	AS5300/Voice Gateway
<b>Fixed LAN Ports (connections)</b>	2-port Ethernet (one 10bT, one 10/100bT, FE)
<b>Fixed WAN Ports (connections)</b>	4-port sync serial 4 T1 (AS5300 - 96VoIP) 4 E1 (AS5300 -120VoIP)
<b>Modular Slots</b>	3 (one for Quad T1/E1, two for VoIP feature cards)
<b>Modules and Cards Available</b>	All VoIP modules are already installed with this configuration
<b>Maximum Voice/Fax Channels</b>	96 voice channels with 4 T1 config;120 with 4 E1 config
<b>Processor Speed (type)</b>	150-MHz (R4700 RISC)
<b>Flash Memory</b>	16 MB
<b>DRAM Memory</b>	64 MB main DRAM
<b>Power Supply</b>	AC (AC dual/redundant, and DC versions optional)
<b>Dimensions (HxWxD)</b>	3.4 x 17.5 x 18.25 in.

## Competitive Products

- 3Com: Total Control
- Ascend: TNT, MAX 6000
- Clarent: Gateway 3.0
- Lucent: PM-4/PacketStar
- Nuera: F200ip
- VocalTec: Ensemble

## Distribution Part Numbers

### Cisco AS5300/Voice Gateway<sup>1</sup>

AS5300-96VoIP-A	A fully configured, 96 channel, Cisco AS5300/Voice Gateway system for T1/North America applications; it includes: AS5300 base unit 4 T1, 96 voice/fax channels IOS, IP Voice Plus, SF53-CVP All voice CODEC feature set software, VC-SWA-4.0x 16 MB Flash 64 MB DRAM AC power supply (DC or dual/redundant optional)
AS5300-120VoIP-A	A fully configured, 120 channel, Cisco AS5300/Voice Gateway system for E1/International applications. It includes: AS5300 base unit 4 E1, 120 voice/fax channels IOS, IP Voice Plus, SF53-CVP All voice CODEC feature set software, VC-SWA-4.0x 16 MB Flash 64 MB DRAM AC power supply (DC or dual/redundant optional)

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco AS5300 Web site: <http://www.cisco.com/as5300>

## Cisco AS5800 Series

The Cisco high-end dial products are high-performance, high-density universal access servers that deliver hybrid asynchronous serial and ISDN line service to accommodate both mobile users and high-bandwidth users. By terminating both analog modem and ISDN calls on the same chassis from the same trunk line, the AS5x00 enables carrier-class service providers and enterprise network managers to meet traditional analog dial access needs, while supporting the growing demand for high-speed ISDN access.




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### When to Sell

#### Sell This Product

##### Cisco AS5800

#### When a Customer Needs These Features

- High-density single system
- Highly available single system with multiple areas of redundancy
- Service provider or IP-focused installations
- Large scale system management with Cisco's System Controller
- Terminates up to 1344 concurrent data or VoIP calls
- Wholesale dial applications

##### Cisco AS5800 Access Server/Voice Gateway

- Hybrid async, ISDN, and VoIP
- Up to 48 T1/E1 or up to 2 CT3 ingress trunks
- Wide variety of LAN and WAN backhaul options
- Up to 1440 ISDN or 1344 modem connections
- Up to 1344 voice ports
- G.711, G.729, G.723.1 voice CODECs and Fax Relay capability

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### Key Features

- Universal access provides ability to answer both ISDN and 56K modems
- VoIP and Fax Relay supported
- Key component of Dial Access Stack Architecture (DASA)
- NEBS Level 3 compliant
- Large scale system management with Cisco's System Controller
- Up to 48 Channelized T1/E1/PRI or 2 Channelized T3 interfaces
- Distributed, multiprocessor design for maximum performance and growth
- SS7 support
- Wholesale dial using Resource Pool Management

## Specifications

Feature	AS5800
<b>Expansion Slots</b>	14
<b>Maximum Port Capacity</b>	1344 for voice and data; 1440 for ISDN only calls
<b>Processor Speed (type)</b>	Router shelf: 300 MHz (R7000)
<b>Flash Memory</b>	4 MB Boot Flash 16 MB PCMCIA
<b>Shared Memory</b>	4 MB SRAM
<b>DRAM Memory</b>	256 MB (RS726VXR) 128 MB (RS7206)
<b>Ingress Options</b>	CT3, T1, E1
<b>Egress Options</b>	Ethernet, Fast Ethernet, Gigabit Ethernet, Serial, HSSI, FDDI, ATM, POS, T1, E1, T3, OC3, and others
<b>Power Supply</b>	Redundant/loadsharing AC or DC
<b>Dimensions (HxWxD)</b>	33.25 x 17.5 x 24 in.

## Competitive Products

- 3Com: TCH HiPer
- Ascend: MAX TNT
- Lucent: PM-4
- Nortel: Aptis CVX 1800

## Distribution Part Numbers and Ordering Information

### Cisco AS5800 Modem Management Technology<sup>1</sup>

FL58CP-72=	Cisco IOS AS5800, IP Plus 72 port modem license spare
FL58CP-144=	Cisco IOS AS5800, IP Plus 144 port modem license spare

### Cisco AS5800 Spares, Feature Cards, and Accessories

DS58-12CT1=	DS5800 12 Port T1 Ingress Line Card (Spare)
DS58-144DM-CC=	AS5800 144 Modem Card Spare
DS58-72DM-CC=	AS5800 72 Modem Card (Spare)
DS5814-DC-FLT=	DS5814 DC Power Filter (Spare)
DS5814-DC-PEM=	DS5814 DC Power Entry Module (Spare)
DS58-1CT3=	DS5800 1 Port CT3 Ingress Line Card (Spare)
DS58-DSC=	DS5800 Dial Shelf Controller Card (Spare)
DS58-FAN=	DS5800 Blower Assembly (Spare)
DS58-PWR-2AC=	DS5800 Dual AC Power Option (Spare)
DS58-RMK=	DS5800 Rack Mount and Cable Management kit (Spare)
DS5814S=	DS5814 Dial Shelf, 14 slot, Dual DC Power (Spare)

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco AS5800 Web site: <http://www.cisco.com/go/AS5800>

## Cisco 6400 Series

The Cisco 6400 is a new generation of carrier-class service gateways that enable network operators, Post, Telephone and Telegraphs (PTTs), and Internet service providers (ISPs) to break through digital subscriber line (DSL) profitability barriers by delivering a new generation of on-demand, high-speed, high-quality, new world services.



The Cisco 6400 offers a unique ability to make the DSL media manageable to service providers to enable high termination of subscribers. In addition, the dynamic selection and delivery of dedicated network services such as secure access to corporate networks (for both voice and data services), high-speed Internet access, multipoint video conferencing, streaming video, and entertainment-driven traffic are supported.

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### When to Sell

#### Sell This Product

**Cisco 6400**

#### When a Customer Needs These Features

- High aggregation and termination of DSL subscriber services
- Service selection gateway and multidomain functionality
- Benefit of Layer 2 and Layer 3 functionality and subscriber access to the network

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### Key Features

- Simultaneously supports over 14,000 Ethernet bridged, Point-to-Point Protocol (PPPoA or PPPoE), or combinations of subscribers through one fully configured system
- Scalability as a virtual router enables service providers to simultaneously route end-user traffic over secure, independent pathways to up to 3500 different domains (or end destinations)—with about 55,000 packet-per-second speed for each session, scalable to higher performance
- Integrated portal capabilities allow service providers to use existing Web-based software programs to create customized network “portals” or services screens, and offer subscribers their own services portfolio
- Integrated, flexible accounting software options allow service providers to carefully track all the services enabled by the product
- Cost effective traffic aggregation that includes DS3, OC-3/STM1, OC-12/STM4, Fast Ethernet, and (future) Gigabit Ethernet
- IP and ATM quality of service (QoS)/class of service (CoS) support including ABR, CBR, and VBR as well as CAR, WFQ, WRED, and RSVP
- Integrated service selection gateway
- Scalable switched virtual circuit (SVC) and permanent virtual circuit (PVC) support—up to 32,000 virtual channel connections (VCCs)

## Specifications

Feature	Cisco 6400
<b>Ports</b>	ATM OC-3/STM1, OC-12/STM4, DS3, Fast Ethernet
<b>Service selection gateway services</b>	Layer 2 and Layer 3 connectivity from the subscriber to the service Pass-through service, proxy service, multicast, PPP termination aggregation, LAC/LNS services, L2TP tunneling, multidomain services
<b>Processor Speed (type)</b>	7200 200 Processor
<b>Flash Memory</b>	Node Switch Processor (NSP): 20, 220, 350 MB Node Route Processor (NRP): 8, 16 MB
<b>DRAM Memory</b>	NSP: 64, 128 MB NRP: 64, 128 MB
<b>Power Supply</b>	AC and DC
<b>Dimensions (HxWxD)</b>	21.85 x 17.5 x 12 in

## Competitive Products

- Nortel: Shasta 5000
- Redback: SMS 1000
- Redstone: RX 1400

## Cisco IOS Software and Memory Requirements

In distribution, the Cisco 6400 series ships with

- 8-MB Flash memory
- 64-MB DRAM memory
- IOS Image Release 12.0(5) DB/DC

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## Distribution Part Numbers and Ordering Information

### Cisco 6400 Memory<sup>1</sup>

MEM-NSP-128M=	NSP 128 MB DRAM
MEM-NSP-FD20M=	NSP 20 MB Flash Disk Spare
MEM-NRP-128M=	NRP 128 MB DRAM
MEM-NRP-FLC8M=	NRP 8 MB Flash Memory
MEM-NRP-FLC20M=	NRP 20 MB Flash Memory

### Cisco 6400 Power Supplies

C6400-PWR-AC=	Cisco 6400 AC Power Supply Spare
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### Cisco 6400 Spares and Accessories

NLC-2DS3-BNC	2 Port DS3 NLC
C6400-BLOWER=	Cisco 6400 Blower Assy Spare
C6400-NSP-1=	Cisco 6400 Node Switch Processor
C6400-NRP-1=	Cisco 6400 Node Route Processor
NLC-2OC3-SM=	2 port OC-3/STM-1 Single Mode
C6400-NSP-CVR=	Cisco 6400 Full-Height NSP Cover
C6400-NRP-CVR=	Cisco 6400 Full-Height NRP/NLC Cover
C6400-NLC-CVR=	Cisco 6400 Half-Height NLC Cover
C6400-PEM-CVR=	Cisco 6400 Half-Height PEM Cover
C6400-CARRIER=	Cisco 6400 Carrier Module

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco 6400 Series Website: <http://www.cisco.com/go/6400>

## Cisco 6700 Series<sup>1</sup>

The Cisco 6700 Series is a carrier-class family of integrated access products. This New World solution provides integrated voice and data services simultaneously from a single, scalable, high-bandwidth device. The Cisco 6700 Series provides Digital Loop Carrier (DLC), GR-303 Gateway, and Integrated Access functionality and services.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Cisco 6732

- North American service provider TDM and ATM applications (CO and RT)
- Interface to Class 5 switch (GR-303 or TR-008)
- High-density, scalable, integrated voice/data access solution (up to 1984 voice subscribers or 256 T1s from a 7' rack)
- Common equipment redundancy and 1:1 broadband transport protection (DS3 and STS1)
- Supports copper and optical networks

##### Cisco 6705

- North American service provider TDM and ATM applications (RT and CPE)
- High-density, scalable integrated voice/data access solution (up to 56 voice subscribers or 8 T1s)
- 8-hour battery back-up option and 1:1 broadband transport protection (DS3 and STS1)
- Supports copper and optical networks

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### Key Features

- Scalable Architecture—Equipped with a proven TDM switching fabric and traffic management feature set required for high-volume voice and data network provisioning; currently supports broadband transport interfaces (DSX3 and STS-1)
- Modularity—Accommodates any slot/any service performance and provides a natural migration path for customers to grow from Old World to New World services with minimal effort and limited expense using feature-rich line card options
- Scalable, Robust Carrier Class Cisco 6700 Series Element Management System (EMS)—Managed by an IP-based, GUI EMS
- Interoperability—The Cisco 6732 has earned Lucent and Nortel certification for co-location applications with Class 5 switches; Cisco 6700 Series products are compatible with standardized D4 channel banks
- Reliability—The Cisco 6732 provides fully redundant common equipment (bank power supply and main control card); the Cisco 6705 is offered with an optional battery back-up box that provides up to 8 hours of power (both the 6732 and 6705 provide 1:1 broadband transport protection)

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco 6705	Cisco 6732
<b>General-Purpose Line Card Slots</b>	5	32
<b>Analog Voice Service (POTS) Circuits Per Card</b>	16	16
<b>Universal Voice Grade (UVG) Circuits Per Card</b>	8	8
<b>Foreign Exchange Station (FXS) Circuits Per Card</b>	16	16
<b>ISDN BRI (U) Circuits Per Card</b>	8	8
<b>DS1 Circuits Per Card</b>	8	8
<b>MSDSL 2-Wire (HDSL-CAP) Circuits Per Card</b>	4	4
<b>T1 Circuits Per Card (no span powering)</b>	2	2
<b>DS3 Circuits Per Card</b>	1	1
<b>STS-1 Circuits Per Card</b>	1	1
<b>OC3c Circuits Per Card</b>	1	1
<b>Power Supply</b>	120 V AC or -48 V DC optional -48 V DC battery backup	-48 V DC
<b>Dimensions (HxWxD)</b>	10.5 X 8.7 X 12 in.	15.75 X 19 X 12 in.

## Competitive Products

### Digital Loop Carrier

Advanced Fibre Communications: MC1000  
Alcatel: Litespan2000  
Lucent: AnyMedia  
Nortel: Access Node

### Integrated Access Device

Accelerated Networks: Accelerator  
AN-30 Series  
Carrier Access Corporation (CAC):  
Access Bank  
Vina Technologies: Business  
OfficeXchange (BOX)

### GR-303 Gateway

Accelerated Networks: Accelerator  
AN-3200  
Carrier Access Corporation (CAC):  
Access Navigator  
CopperCom: CopperComplete DSL  
Jetstream: CPX-1000

## For More Information

See the Cisco 6700 Series Website: <http://www.cisco.com/go/6700>

## Cisco 7100 Series

The Cisco 7100 Series VPN Router is a full-featured, high-end, integrated VPN solution melding high-speed, industry leading routing with a comprehensive suite of VPN services. The Cisco 7100 Series VPN Router integrates key features of VPNs—tunneling, data encryption, security, firewall, advanced bandwidth management, and service level validation—to provide secure, scalable VPN platforms to better and more cost-effectively accommodate remote-access, remote-office, and extranet connectivity using public data services. The Cisco 7100 Series VPN Router offers specific hardware configurations optimized for VPN environments or service provider WAN/VPN customer premise equipment (CPE) applications. Embedded WAN and Fast Ethernet interfaces combined with high-performance routing and rich VPN services provide turnkey VPN routing solutions. For service providers, the deployment flexibility of the Cisco 7100 enables standardization on a single platform for both traditional WAN and fast emerging VPN CPE applications.




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### When to Sell

#### Sell This Product

##### Cisco 7120

#### When a Customer Needs These Features

- Entry-level Cisco 7100 Series Router designed for large branch or central site VPN and WAN deployments
- Branch or main office service provider CPE environments

##### Cisco 7140

- Customers seeking a high-end VPN platform for central site remote access, intranet, and extranet applications
- Provides superior routing, WAN, and VPN services performance for central site environments, as well as dual WAN interfaces and power supplies for increased solution reliability

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### Key Features

- Comprehensive suite of VPN services—tunneling, data encryption, security firewall, advanced bandwidth management, and service level validation—integrated with industry leading routing
- High performance RISC processor delivering high-speed, scalable VPN services and routing throughput and extensive memory for reliable, high-speed VPN services delivery
- Single and dual-homed embedded WAN interfaces ranging from nxT1/E1 to DS-3/E3 and OC-3 for connectivity to the VPN and embedded dual autosensing 10/100BaseT Fast Ethernet ports for connectivity to the corporate LAN
- Service Module slot providing a modular architecture for hardware acceleration of VPN services, like encryption processing for IPSec and PPTP, at multimegabit speeds

## Specifications

Feature	Cisco 7120	Cisco 7140
<b>Embedded Dual 10/100BaseT Fast Ethernet Interfaces</b>	Autosensing, RJ-45	Autosensing, RJ-45
<b>Embedded WAN interface (by model)</b>	One of the following included, embedded: 7120-4T1: 4T1/E1 serial with 5-in-1 serial interface supporting EIA/TIA-232, EIA/TIA-449, EIA-530, X.21, and V.35 7120-T3: T3 serial with integrated DSU and BNC connectors 7120-E3: E3 serial with integrated DSU and BNC connectors 7120-AT3: T3 ATM with BNC connectors 7120-AE3: E3 ATM with BNC connectors 7120-SMI3: OC3 ATM with SC connectors	One of the following included, embedded: 7140-2FE: None, dual FEs only 7140-8T: 8 T1/E1 serial with 5-in-1 serial interface supporting EIA/TIA-232, EIA/TIA-449, EIA-530, X.21, and V.35 7140-2T3: Dual T3 with integrated DSU and BNC connectors 7140-2E3: Dual E3 with integrated DSU and BNC connectors 7140-2AT3: Dual T3 ATM with BNC connectors 7140-2AE3: Dual E3 ATM with BNC connectors 7140-2MM3: Dual OC3 ATM with SC connectors
<b>Physical Interfaces</b>	EIA/TIA-232, EIA/TIA-449, X.21, V.35, EIA-530, EIA/TIA-612, EIA/TIA-613, UNI 3.X, G.707, G.708, and SONET/SDH optical fiber (OC-3 or STM-1)	Same as Cisco 7120
<b>WAN/LAN Interface Expansion Slot</b>	1 slot	1 slot
<b>Supported Network Port Adapters</b>	Fast Ethernet 100BaseTX and 100BaseFX Fast Ethernet/ISL TX and ISL FX Ethernet 10BaseT and 10BaseFL Dedicated Token Ring ATM Synchronous Serial HSSI ISDN BRI High Capacity Digital Voice	Same as Cisco 7120
<b>Service Module Slot</b>	1 slot	1 slot
<b>Supported Service Modules</b>	Integrated Services Module (ISM)	Integrated Services Module (ISM)
<b>Console and Auxiliary Ports</b>	1 of each, RJ-45 interface	1 of each, RJ-45 interface
<b>SDRAM</b>	64 MB packet 64 MB system (expandable to 256 MB)	64 MB packet 64 MB system (expandable to 256 MB)
<b>Flash Memory</b>	40 MB	40 MB
<b>PCMCIA Slots for Flash Memory</b>	2	2
<b>Power Supply</b>	Single AC	Dual AC
<b>Dimensions (HxWxD)</b>	3.5 in. x 17.5 in. x 18.25 in.	3.5 in. x 17.5 in. x 18.25 in.
<b>Service Category</b>	13	14

## Competitive Products

- 3Com: PathBuilder S500 Series
- Check Point: VPN-1 Appliance
- Nortel (Bay): Contivity 4000, 4500
- Xedia (Lucent): QVPN Series

## Cisco IOS Software and Memory Requirements

The Cisco 7100 Series in distribution ships with:

- 40-MB Flash memory
- 64-MB DRAM memory

To run the Cisco IOS Feature Packs, you need, at a minimum, the amount of memory shown in the following table. Some configurations will require more than the recommended minimum.

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required	DRAM Memory Required
CD71-C-12.0XE=	IP only	12.0(4)XE	16 MB	64 MB
CD71-CL-12.0XE=	IP IPSEC 56	12.0(4)XE	16 MB	64 MB
CD71-CK2-12.0XE=	IP IPSEC 3DES	12.0(4)XE	16 MB	64 MB
CD71-CH-12.0XE=	IP/FW	12.0(4)XE	16 MB	64 MB
CD71-CHL-12.0XE=	IP/FW IPSEC 56	12.0(4)XE	16 MB	64 MB
CD71-CHK2-12.0XE=	IP/FW IPSEC 3DES	12.0(4)XE	16 MB	64 MB
CD71-A-12.0XE=	Enterprise	12.0(4)XE	16 MB	64 MB
CD71-AL-12.0XE=	Enterprise IPSEC 56	12.0(4)XE	16 MB	64 MB
CD71-AK2-12.0XE=	Enterprise IPSEC 3DES	12.0(4)XE	16 MB	64 MB
CD71-AH-12.0XE=	Enterprise/FW Feature Pack	12.0(4)XE	16 MB	64 MB
CD71-AHL-12.0XE=	Enterprise/FW IPSEC 56	12.0(4)XE	16 MB	64 MB
CD71-AHK2-12.0XE=	Enterprise/FW IPSEC 3DES	12.0(4)XE	16 MB	64 MB

## Distribution Part Numbers and Ordering Information

### Cisco 7120 Series<sup>1</sup>

CISCO7120-4T1	Cisco 7120 Router, 4-Port Serial, Dual 10/100 FE, AC, IP SW
CISCO7120-T3	Cisco 7120 Router, T3, Dual 10/100 FE, AC, with IP SW
CISCO7120-E3	Cisco 7120 Router, E3, Dual 10/100 FE, AC, with IP SW
CISCO7120-AT3	Cisco 7120 Router, ATM T3, Dual 10/100 FE, AC, with IP SW
CISCO7120-AE3	Cisco 7120 Router, ATM E3, Dual 10/100 FE, AC, with IP SW
CISCO7120-SMI3	Cisco 7120 Router, OC3-SMI, Dual 10/100 FE, AC, with IP SW

### Cisco 7140 Series

CISCO7140-2FE	Cisco 7140 Router, Dual 10/100 FE, dual AC, IP SW
CISCO7140-8T	Cisco 7140 Router, 8-port serial, Dual 10/100 FE, dual AC, IP SW
CISCO7140-2T3	Cisco 7140 Router, Dual T3, Dual 10/100 FE, Dual AC, IP SW
CISCO7140-2E3	Cisco 7140 Router, Dual E3, Dual 10/100 FE, Dual AC, IP SW
CISCO7140-2AT3	Cisco 7140 Router, Dual ATM T3, Dual 10/100 FE, Dual AC, IP
CISCO7140-2AE3	Cisco 7140 Router, Dual ATM E3, Dual 10/100 FE, Dual AC, IP
CISCO7140-2MM3	Cisco 7140 Router, Dual OC3-MM, Dual 10/100 FE, Dual AC, IP

### Cisco 7100 Memory Options

MEM-7100-FLD110M=	Cisco 7100 I/O PCMCIA Flash Disk, 110 MB, Spare
MEM-7100-FLD40M=	Cisco 7100 I/O PCMCIA Flash Disk, 40 MB, Spare
MEM-7120/40-64P=	Cisco 7100 64 MB SDRAM Packet Memory Upgrade
MEM-7120/40-64S=	Cisco 7100 64 MB SDRAM System Memory Upgrade
MEM-7120/40-128S=	Cisco 7100 128 MB SDRAM System Memory Upgrade

### Cisco 7100 Series Service Modules

SM-ISM	Integrated Services Module for PPTP and IPSec encryption processing
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### Cisco 7100 Port Adapters

PA-4R-DTR=	Port Adapter:4-Port Dedicated Token Ring,4/16Mbps, HDX/FDX
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**Cisco 7100 Series Software Feature Packs**

CD71-C-12.0XE=	IP only
CD71-CL-12.0XE=	IP IPSEC 56
CD71-CK2-12.0XE=	IP IPSEC 3DES
CD71-CH-12.0XE=	IP/FW
CD71-CHL-12.0XE=	IP/FW IPSEC 56
CD71-CHK2-12.0XE=	IP/FW IPSEC 3DES
CD71-A-12.0XE=	Enterprise
CD71-AL-12.0XE=	Enterprise IPSEC 56
CD71-AK2-12.0XE=	Enterprise IPSEC 3DES
CD71-AH-12.0XE=	Enterprise/FW Feature Pack
CD71-AHL-12.0XE=	Enterprise/FW IPSEC 56
CD71-AHK2-12.0XE=	Enterprise/FW IPSEC 3DES

**Cisco 7100 Series Basic Maintenance**

CON-SNT-PKG13	Cisco 7120 Series SMARTnet Maintenance
CON-SNT-PKG14	Cisco 7140 Series SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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**For More Information**

See the Cisco 7100 Series Website: <http://www.cisco.com/go/7100>

## Cisco 7200 Series

The Cisco 7200 series routers deliver exceptional price/performance to meet the following requirements: regional and branch offices that



need gateway connectivity to the WAN and the Internet; remote site aggregation for enterprise and service providers where multiple dispersed locations are interconnected through a central site; sites that require IBM data center connectivity; and sites that require multifunction capabilities that combine all the above for multiservice voice, video, and data traffic.

A key strength of the Cisco 7200 is its modularity. With a choice of 4- and 6-slot chassis, three processors providing up to 300 kpps, an extensive range of LAN and WAN interfaces with up to 48 ports, and single or dual power supplies, the customer gets the performance and capacity required. This modularity also provides investment protection and a guaranteed expansion path.

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### When to Sell

#### Sell This Product

##### Cisco 7204

- 4-slot chassis
- 150-, 175-, 200-, or 225 MHz processor

##### Cisco 7204VXR

- 4-slot chassis
- 150-, 175- 200-, 225-, or 263 MHz processor
- Higher backplane bandwidth
- For using the MIX bus in multiservice applications

##### Cisco 7206

- 6-slot chassis
- 150-, 175-, 200-, or 225 MHz processor

##### Cisco 7206VXR

- 6-slot chassis
- 150-, 175- 200-, 225-, or 263 MHz processor
- Higher backplane bandwidth
- For using the MIX bus in multiservice applications

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### Key Features

- High performance switching—Supports high-speed media and high-density configurations; with its RISC-based and SRAM-configured system processors, the Cisco 7200 can switch up to 300,000 packets per second
- Full support for Cisco IOS software and enhancements for high-performance network services—Performs network services including quality of service, security, compression, and encryption at high speed
- High port density—Provides high port density and an extensive range of LAN and WAN media, dramatically reducing the cost per port and allowing flexible configuration
- Common port adapters—Uses the same port adapters as the Cisco 7500 Versatile Interface Processor (VIP), which simplifies stocking spares and protects customer investment in interfaces

## Specifications

Feature	Cisco 7204	Cisco 7204VXR	Cisco 7206	Cisco 7206VXR
<b>Fixed Ports</b>	None	None	None	None
<b>Modular Slots</b>	4	4	6	6
<b>LAN Port Adapters</b>	4- or 8-port 10BaseT 5-port 10BaseFL 1-port 100BaseTX 1-port F100BaseFX 2-port 100BaseTX (TR ISL) 2-port 100BaseFX (TR ISL) 1-port Gigabit Ethernet 4-port Token Ring 4/16Mbps, Half/Full Duplex 1-port FDDI multimode or single mode 1-port FDDI full duplex multimode or single mode 12-port Ethernet/2-port Fast Ethernet Etherswitch	4- or 8-port 10BaseT 5-port 10BaseFL 1-port 100BaseTX 1-port 100BaseFX 2-port 100BaseTX (TR ISL) 2-port 100BaseFX (TR ISL) 1-port Gigabit Ethernet 4-port Token Ring 4/16Mbps, Half/Full Duplex 12-port Ethernet/2-port Fast Ethernet Etherswitch	Same as Cisco 7204	Same as Cisco 7204VXR
<b>Serial Port Adapters</b>	4-port Serial, enhanced 8-port Serial, V.35, RS-232, or X.21 4-port Serial E1 (G.703)	Same as Cisco 7204	Same as Cisco 7204	Same as Cisco 7204
<b>High Speed Serial Port Adapters</b>	1- and 2-port HSSI 1- and 2-port High Speed T3 Serial (with DSU) 1- and 2-port High Speed E3 Serial (with DSU)	Same as Cisco 7204	Same as Cisco 7204	Same as Cisco 7204
<b>Multichannel and ISDN Port Adapters</b>	2-port Enhanced Multichannel T3 1-port Multichannel T3 1-port Multichannel E3 2-, 4-, and 8-port Multichannel T1 (CSU/DSU & PRI) 2- and 8-port Multichannel E1 (G.703/G.704 & PRI) 8 port ISDN BRI (S/T) 4-port ISDN BRI (U), NT-1 1-port Channelized DS3 with 4 T1 breakout ports	2-port Enhanced Multichannel T3 1-port Multichannel T3 1-port Multichannel E3 2-, 4-, and 8-port Multichannel T1 (CSU/DSU & PRI) 2- and 8-port Multichannel E1 (G.703/G.704 & PRI) 8 port ISDN BRI (S/T) 4-port ISDN BRI (U), NT-1	Same as Cisco 7204	Same as Cisco 7204VXR
<b>Digital Voice Trunk Port Adapter</b>	2 Port T1/E1 High Capacity Digital Voice	Same as Cisco 7204	Same as Cisco 7204	Same as Cisco 7204
<b>SONET Port Adapters</b>	2- port Dynamic Packet Transport OC12/STM4 1 port Packet Over SONET OC3/STM1	Same as Cisco 7204	Same as Cisco 7204	Same as Cisco 7204
<b>ATM Port Adapters</b>	1-port ATM OC3/STM1 multimode and single mode 1-port ATM Enhanced OC12/STM4 multimode and single mode 1-port ATM Enhanced OC3/STM1 multimode and single mode 1-port ATM Enhanced DS3 1-port ATM Enhanced E3 8-port ATM Enhanced T1 IMA 8-port ATM Enhanced E1 IMA ATM Circuit Emulation Services	Same as Cisco 7204	Same as Cisco 7204	Same as Cisco 7204
<b>Mainframe Channel Connection Port Adapters</b>	1-port ESCON Mainframe Channel Port Adapter 1-port Parallel Mainframe Channel Port Adapter	Same as Cisco 7204	Same as Cisco 7204	Same as Cisco 7204
<b>Service Adapter Modules</b>	Compression Encryption	Compression Encryption	Compression Encryption	Compression Encryption
<b>Network Processing Engines</b>	150-, 175-, 200-, or 225 MHz	150-, 175- 200-, 225-, or 263 MHz	150-, 175-, 200-, or 225 MHz	150-, 175- 200-, 225-, or 263 MHz

Feature	Cisco 7204	Cisco 7204VXR	Cisco 7206	Cisco 7206VXR
<b>Processor Speed (type)</b>	150-, 175-, 200-, or 225 MHz (MIPS RISC)	150-, 175- 200-, 225-, or 263 MHz (MIPS RISC)	Same as Cisco 7204	Same as Cisco 7204VXR
<b>Flash PCMCIA Memory</b>	16 MB (default); 110 MB (max)	16 MB (default); 110 MB (max)	Same as Cisco 7204	Same as Cisco 7204VXR
<b>DRAM Memory</b>	64 MB (default) 128 MB (max)	64 MB (default) 128 MB (max)	64 MB (default) 128 MB (max)	64 MB (default) 128 MB (max)
<b>Power Supply</b>	AC or DC, dual optional	Same as Cisco 7204	Same as Cisco 7204	Same as Cisco 7204
<b>Dimensions (HxWxD)</b>	5.25 x 16.8 x 17 in.	5.25 x 16.8 x 17 in.	5.25 x 16.8 x 17 in.	5.25 x 16.8 x 17 in.
<b>Service Category</b>	13	13	14	14

## Competitive Products

- 3Com: NETBuilder II
- Bay Networks: Backbone Link Node (BLN)
- Packeteer: PacketShaper 4000
- Sentient: Ultimate 1000

## Cisco IOS Software and Memory Requirements

The Cisco 7200 Series in distribution ships with:

- 20-MB Flash memory
- 64-MB DRAM memory

To run the Cisco IOS Feature Packs, you need, at a minimum, the amount of memory shown in the following table. Some configurations will require more.

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required	DRAM Memory Requir
CD72-C-12.0T=	IP	12.0(4)T	16 MB	64 MB
CD72-CL-12.0T=	IP IPSEC 56	12.0(4)T	16 MB	64 MB
CD72-CK2-12.0T=	IP IPSEC 3DES	12.0(4)T	16 MB	64 MB
CD72-CH-12.0T=	IP/FW	12.0(4)T	16 MB	64 MB
CD72-CHL-12.0T=	IP/FW IPSEC 56	12.0(4)T	16 MB	64 MB
CD72-CHK2-12.0T=	IP/FW IPSEC 3DES	12.0(4)T	16 MB	64 MB
CD72-BS-12.0T=	Desktop/IBM	12.0(4)T	16 MB	64 MB
CD72-BSL-12.0T=	Desktop/IBM IPSEC 56	12.0(4)T	16 MB	64 MB
CD72-BHS-12.0T=	Desktop/IBM/FW	12.0(4)T	16 MB	64 MB
CD72-BHSL-12.0T=	Desktop/IBM/FW IPSEC 56	12.0(4)T	16 MB	64 MB
CD72-BHK2-12.0T=	Desktop/IBM/FW IPSEC 3DES	12.0(4)T	16 MB	64 MB
CD72-A-12.0T=	Enterprise	12.0(4)T	16 MB	64 MB
CD72-AL-12.0T=	Enterprise IPSEC 56	12.0(4)T	16 MB	64 MB
CD72-AK2-12.0T=	Enterprise IPSEC 3DES	12.0(4)T	16 MB	64 MB
CD72-AH-12.0T=	Enterprise/FW	12.0(4)T	16 MB	64 MB
CD72-AHL-12.0T=	Enterprise/FW IPSEC 56	12.0(4)T	16 MB	64 MB
CD72-AHK2-12.0T=	Enterprise/FW IPSEC 3DES	12.0(4)T	16 MB	64 MB

## Distribution Part Numbers and Ordering Information

### Cisco 7200 Series Base Chassis, NPE, and I/O Controller<sup>1</sup>

CISCO7204-CH	Cisco 7204 Modular Router, 4 Slots, AC Power
CISCO7206-CH	Cisco 7206 Modular Router, 6 Slots, AC Power
NPE-100=	Cisco 7200 Series Network Processing Engine 100, Zero SRAM
NPE-150=	Cisco 7200 Series Network Processing Engine 150, 1-MB SRAM
NPE-175=	NPE-175 Network Processing Engine for 7200
NPE-200=	Cisco 7200 Network Processing Engine, 4 MB SRAM
NPE-225=	NPE-225 Network Processing Engine for 7200, spare
NPE-300=	Cisco 7200VXR Network Processing Engine 300, Spare
C7200-I/O=	Cisco 7200 Input/Output Controller, Spare
C7200-I/O-FE=	Cisco 7200 Input/Output Controller with Fast Ethernet Port
CISCO7206/200	7206 Bundle with NPE-200 and I/O Controller W/O FE
CISCO7204/150	7204 Bundle with NPE-150 and I/O Controller W/O FE
CISCO7206VXR/300	7206VXR Bundle with NPE-300 and I/O Controller with FE
CISCO7204VXR/200	7204VXR Bundle with NPE-200 and I/O Controller with FE
CISCO7204VXR/100	7204VXR Bundle with NPE-100 and I/O Controller with FE
CISCO7204VXR/175	7204VXRsystem with NPE-175 and IOS
CISCO7204VXR/225	7204VXRsystem with NPE-225, FE and IOS
CISCO7206VXR/225	7206VXRsystem with NPE-225, FE and IOS

### Cisco 7200 Series Software Feature Packs

CD72-C-12.0T=	Cisco 7200 Series IP Feature Pack
CD72-CL-12.0T=	Cisco 7200 Series IP IPSEC 56 Feature Pack
CD72-CK2-12.0T=	Cisco 7200 Series IP IPSEC 3DES Feature Pack
CD72-CH-12.0T=	Cisco 7200 Series IP/FW Feature Pack
CD72-CHL-12.0T=	Cisco 7200 Series IP/FW IPSEC 56 Feature Pack
CD72-CHK2-12.0T=	Cisco 7200 Series IP/FW IPSEC 3DES Feature Pack
CD72-BS-12.0T=	Cisco 7200 Series Desktop/IBM Feature Pack
CD72-BSL-12.0T=	Cisco 7200 Series Desktop/IBM IPSEC 56 Feature Pack
CD72-BHS-12.0T=	Cisco 7200 Series Desktop/IBM/FW Feature Pack
CD72-BHSL-12.0T=	Cisco 7200 Series Desktop/IBM/FW IPSEC 56 Feature Pack
CD72-BHK2-12.0T=	Cisco 7200 Series Desktop/IBM/FW IPSEC 3DES Feature Pack
CD72-A-12.0T=	Cisco 7200 Series Enterprise Feature Pack
CD72-AL-12.0T=	Cisco 7200 Series Enterprise IPSEC 56 Feature Pack
CD72-AK2-12.0T=	Cisco 7200 Series Enterprise IPSEC 3DES Feature Pack
CD72-AH-12.0T=	Cisco 7200 Series Enterprise/FW Feature Pack
CD72-AHL-12.0T=	Cisco 7200 Series Enterprise/FW IPSEC 56 Feature Pack
CD72-AHK2-12.0T=	Cisco 7200 Series Enterprise/FW IPSEC 3DES Feature Pack

### Cisco 7200 Series License for Advanced Software Options

FR-WPP72=	Cisco IOS 7200 Series WAN Packet Protocols/Netflow License
FR-IR72=	Cisco IOS 7200 Series InterDomain Routing/Tag Switching License
FR-CES72=	CES software license for ATM CES PA*

### Cisco 7200 Series Port Adapters

PA-4E=	4-Port Ethernet 10BaseT Port Adapter
PA-8E=	8-Port Ethernet 10BaseT Port Adapter
PA-5EFL=	5-Port Ethernet 10BaseFL Port Adapter
PA-4R=	4-Port Token Ring 4/16 Mbps Port Adapter
PA-4R-FDX=	4-Port Token Ring 4/16Mbps, Full Duplex Port Adapter
PA-FE-TX=	1-Port Fast Ethernet 100BaseTx Port Adapter
PA-FE-FX=	1-Port Fast Ethernet 100BaseFx Port Adapter
PA-F-MM=	1-Port FDDI Multimode Port Adapter
PA-F-SM=	1-Port FDDI Single-mode Port Adapter
PA-F/FD-MM=	1-Port FDDI Full Duplex Multi-Mode Port Adapter
PA-F/FD-SM=	1-Port FDDI Full Duplex Single-Mode Port Adapter
PA-100VG=	1-Port 100VG Port Adapter
PA-4T+=	4-Port Serial Port Adapter, Enhanced
PA-8T-V35=	8-Port Serial,V.35 Port Adapter
PA-8T-232=	8-Port Serial, 232 Port Adapter
PA-8T-X21=	8-Port Serial, X.21 Port Adapter
PA-2CT1/PRI=	2-Port Channelized T1/PRI Port Adapter
PA-2CE1/PRI-75=	2 Port Channelized E1/PRI Port Adapter, 75 Ohm
PA-2CE1/PRI-120=	2 Port Channelized E1/PRI Port Adapter, 120 Ohm
PA-H=	Port Adapter: 1-Port HSSI

PA-2H=	Port Adapter: 2-Port HSSI
PA-A1-OC3SM=	1 Port ATM OC3 Single Mode Intermediate Reach Port Adapter
PA-A1-OC3MM=	1-Port ATM OC3 Multimode Port Adapter
PA-4B-U=	4-Port BRI Port Adapter, U Interface
PA-8B-S/T=	8-Port BRI Port Adapter, S/T Interface
PA-4E1G/75=	4-Port E1 G.703 Serial Port Adapter (75ohm/Unbalanced)
PA-4E1G/120=	4-Port E1 G.703 Serial Port Adapter (120ohm/Balanced)
PA-A2-4T1C-OC3SM=	ATM CES Port Adapter, 4T1 CES Ports and 1 OC3 ATM SM Port
PA-A2-4T1C-T3ATM=	ATM CES Port Adapter, 4T1 CES Ports and 1 T3 ATM Port
PA-A2-4E1XC-OC3SM=	CES OC3 Port Adapter 4E1 Ports 120ohms
PA-A2-4E1XC-E3ATM=	CES Port Adapter E3/E1 120 ohms
PA-CT3/4T1=	Channelizes DS3 Port Adapter with 4 T1 breakout connectors
PA-MC-4T1=	4 port multichannel T1 port adapter with integrated CSU/DSUs
PA-MC-8T1=	8 port multichannel T1 port adapter with integrated CSU/DSUs
PA-VXC-2TE1=	2 port T1/E1 high capacity digital voice port adapter, Spare

### Cisco 7200 Series Service Adapters

SA-COMP/1=	Service Adapter; Compression (64 VC's Stac) - Spare
SA-COMP/4=	Service Adapter; Compression (256 VC's Stac) - Spare

### Cisco 7200 Series Memory and Memory Upgrades

MEM-NPE-32MB=	32MB Memory Upgrade Kit for NPE-200/NPE-150/NPE-100
MEM-NPE-64MB=	64MB Memory Upgrade Kit for NPE-200/NPE-150/NPE-100
MEM-NPE-128MB=	128MB Memory Upgrade Kit for NPE-200/NPE-150/NPE-100
MEM-I/O-FLC8M=	Cisco 7200 I/O PCMCIA Flash Memory, 8MB
MEM-I/O-FLC16M=	Cisco 7200 I/O PCMCIA Flash Memory, 16MB
MEM-I/O-FLC20M=	Cisco 7200 I/O PCMCIA Flash Memory, 20MB
MEM-SD-NPE-32MB=	32MB Memory Upgrade Kit for NPE-300/NPE-225/NPE-175
MEM-SD-NPE-64MB=	64MB Memory Upgrade Kit for NPE-300/225/175
MEM-SD-NPE-128MB=	128MB Memory Upgrade Kit for NPE-300/NPE-225/NPE-175
MEM-SD-NPE-256MB=	256MB Memory Upgrade Kit for NPE-300

### Cisco 7200 Series Accessories

PWR-7200-AC=	Cisco 7200 AC Power Supply With United States Cord
ACS-7200-RMK=	Cisco 7200 Rack mount Kit and Cable Management Bracket

### Cisco 7200 Series Basic Maintenance

CON-SNT-PKG13	Cisco 7204 Series SMARTnet Maintenance
CON-SNT-PKG14	Cisco 7206 Series SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco 7200 Series Website: <http://www.cisco.com/go/7200>

## Cisco 7500 Series

The Cisco 7500 series is Cisco's premier high-end platform of multiprotocol routers. These systems combine Cisco's proven software technology with exceptional reliability, availability, serviceability, and performance features to meet the requirements of today's most mission-critical internetworks. The Cisco 7500 series provides information system professionals with the flexibility they need to meet the constantly changing requirements at the core and distribution points of the internetwork.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Cisco 7505

- One CyBus
- Solution for complex networking products in the data center, the workgroup, and the core of the network

##### Cisco 7507

- Dual CyBuses
- High-bandwidth applications with medium-density requirements

##### Cisco 7513

- Dual CyBuses
- Ideal solution for large, collapsed backbone environments or as an aggregation router supporting large numbers of remote users

##### Cisco 7576

- Four CyBuses for a total aggregate chassis bandwidth of over 4 Gbps
- Ideal for high-density, high-bandwidth environments or as an aggregation router supporting access applications

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### Key Features

- High-performance switching—Delivers high performance for mission-critical applications by supporting high-speed media and high-density configurations; using the processing capabilities of the Versatile Interface Processors (VIPs) and Cisco Express Forwarding, the Cisco 7500 series system capacity can exceed a million packets per second
- Full support for Cisco IOS software and enhancements for high-performance network services—Performs network services such as quality of service, security, compression, and encryption at high speed; VIP technology extends the performance of these services through distributed IP services feature
- High port density—Provides high port density and an extensive range of LAN and WAN media; this feature dramatically reduces the cost per port and allows a flexible configuration
- Common port adapters—VIPs use the same port adapters as Cisco 7200, which simplifies sparing and protects customer investment in interfaces

## Specifications

Feature	Cisco 7505	Cisco 7507	Cisco 7513	Cisco 7576
<b>Routers per Chassis</b>	1	1	1	2
<b>Fixed Ports</b>	None	None	None	None
<b>Modular Slots</b>	5	7	13	13
<b>Interface Processor Slots</b>	4	5	11	11
<b>RSPs</b>	1 (100-MHz RSP1 or 200-MHz RSP4)	2 (optional dual RSPs; 100-MHz RSP2 and/or 200-MHz RSP4)	2 (optional dual RSPs; 100-MHz RSP2 and/or 200-MHz RSP4)	2 (100-MHz RSP2 and/or 200-MHz RSP4)
<b>LAN Port Adapters</b>	4- or 8-port Ethernet 10BaseT 5-port Ethernet 10BaseFL 1-port Fast Ethernet 100BaseTX 1-port Fast Ethernet 100BaseFX 2-port Fast Ethernet/ISL 100BaseTX (TR ISL) 2-port Fast Ethernet/ISL 100BaseFX (TR ISL) 4-port Token Ring 4/16 Mbps, Full Duplex 1-port FDDI multimode or single mode 1-port FDDI full duplex multi- or singlemode	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>Serial Port Adapters</b>	4-port Serial, enhanced 8-port Serial, V.35, RS-232, or X.21 4-port Serial E1 (G.703)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>High-Speed Serial Port Adapters</b>	1- and 2-port HSSI 1- and 2-port High Speed T3 Serial (w/ DSU) 1- and 2-port High Speed E3 Serial (w/ DSU)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>Multichannel and ISDN Port Adapters</b>	2-port Enhanced Multichannel T3 1-port Multichannel T3 1-port Multichannel E3 2-, 4-, and 8-port Multichannel T1 (CSU/DSU & PRI) 2- and 8-port Multichannel E1 (G.703/G.704 & PRI)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>Digital Voice Trunk Port Adapter</b>	2 Port T1/E1 High Capacity Digital Voice	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>SONET Port Adapters</b>	2- port Dynamic PacketTransport OC12/STM4 1 port Packet Over SONET OC3/STM1	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>ATM Port Adapters</b>	1-port ATM OC3/STM1 multimode and single mode 1-port ATM Enhanced OC12/STM4 multimode and single mode 1-port ATM Enhanced OC3/STM1 multimode and single mode 1-port ATM Enhanced DS3 1-port ATM Enhanced E3 8-port ATM Enhanced T1 IMA 8-port ATM Enhanced E1 IMA	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>Cisco Mainframe Channel Connection Port Adapters</b>	1-port ESCON Mainframe Channel Port Adapter 1-port Parallel Mainframe Channel Port Adapter	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>Advanced Technology Interface Processors</b>	1-port Gigabit Ethernet single mode 1-port Gigabit Ethernet multimode 1-port Packet-Over-SONET OC3/STM-1 single mode 1-port Packet-Over SONET OC3/STM-1 multimode 1-port Channelized DS3 with 4 T1 breakout ports 2-port Dynamic PacketTransport OC12/STM4	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505

Feature	Cisco 7505	Cisco 7507	Cisco 7513	Cisco 7576
<b>Hardware Service Adapters</b>	Compression Service Adapter (CSA) Encryption Service Adapters (ESA)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>VIP Modules</b>	VIP2-15, VIP2-40, VIP2-50	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>Processor</b>	Mips RISC	Mips RISC	Mips RISC	Mips RISC
<b>High-Speed Backplane</b>	5 CyBus slots 1 Gbps backplane 4 interface processor slots 1 RSP slot	7 CyBus slots 2 Gbps backplane 5 interface processor slots 2 RSP slots	13 CyBus slots 2 Gbps backplane 11 interface processor slots 2 RSP slots	13 CyBus slots 4 Gbps backplane 11 interface processor slots 2 RSP slots
<b>Boot Memory</b>	256 KB	256 KB	256 KB	256 KB
<b>Shared Memory</b>	16 MB (min) 40 MB (max)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>DRAM Memory</b>	32 MB (default) 128 MB (RSP2 max) 256 MB (RSP4 max)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
<b>Power Supply</b>	AC, dual AC/DC, dual DC	Same as Cisco 7505	Same as Cisco 7505	2 standard, AC, dual AC/DC, dual DC
<b>Dimensions (HxWxD)</b>	10.5 x 17.5 x 17 in.	19.25 x 17.5 x 25 in.	33.75 x 17.5 x 22 in.	33.75 x 17.5 x 22 in.

## Distribution Part Numbers and Ordering Information

### Cisco 7500 Series Route Switch<sup>1</sup>

RSP4= Cisco 7500 Series Route Switch Processor 4

### Cisco 7500 Series Blank Card Carrier

MAS-7KBLANK= Blank Card Carrier

### Cisco 7500 Memory and Memory Upgrades

MEM-RSP4-FLC16M= RSP4 Flash Card: 16 MB Kit  
MEM-RSP4-FLC20M= RSP4 Flash Card: 20 MB Kit  
MEM-RSP4-32M= RSP4 32MB DRAM Upgrade Kit  
MEM-RSP4-64M= RSP4 64MB DRAM Option  
MEM-RSP4-128M= RSP4 128MB DRAM Upgrade Kit  
MEM-RSP4-256M= RSP4 256MB DRAM Upgrade Kit  
MEM-VIP240-64M= 64 MB DRAM Option for VIP2-40 (Spare)  
MEM-VIP250-8M-S= 8 MB SRAM Option for VIP2-50/xIP-50

### Cisco 7500 License for Advanced Software Options

FR-WPP75= Cisco IOS RSPx Series WAN Packet Protocols/Netflow License  
FR-IR75= Cisco IOS RSP Series InterDomain Routing License  
FR-NF75= Cisco IOS RSPx Series NetFlow Switching License  
FR75-C-DS= Cisco IOS RSPx Series IP to IP/IPX/IBM  
FR75-C-BS= Cisco IOS RSPx Series IP to Desktop/IBM  
FR75-C-A= Cisco IOS RSPx Series IP to Enterprise  
FR75-40= Cisco IOS RSPx Encryption 40 Upgrade  
FR75-56= Cisco IOS RSPx Encryption 56 Upgrade  
FL75-K2= Cisco IOS 7500 Series IPSEC 3DES Upgrade  
FL75-L= Cisco IOS 7500 Series IPSEC 56 Upgrade

### Cisco 7500 Gigabit Interface Processors & Converters

GEIP= Gigabit Ethernet Interface Processor  
GBIC-SX= Gigabit Interface Converter For 1000BASE-SX (Short Wavelength)  
GBIC-LX/LH= Gigabit Interface Converter for 1000BASE-LX standard

### Cisco 7500 Spare Port Interface Processor

CX-EIP2= Spare Two Port Ethernet I/f Pr  
CX-EIP6= Spare Six Port Ethernet I/f Pr  
CX-FIP-MM= Spare FDDI Multi-Mode I/f Proc  
CX-FIP-SS= Spare FDDI Singlemode I/f Proc  
CX-HIP= Spare HSSI I/f Proc.(52 Mbps)  
CX-FSIP8= 8 PORT SERIAL I/F PROC

**Cisco 7500 ATM Interface Processor**

CX-AIP-SM=	ATM Interface, SONET/SDH Multimode, 155 Mbps
CX-AIP-DS3=	ATM Interface, DS3 Coax, 45 Mbps A

**Cisco 7500 Fast Ethernet Interface Processor**

CX-FEIP-2TX=	Fast Ethernet Interface Processor Spare: 2-ports
CX-FEIP-2FX=	FEIP (100FX); 2-PORT
FEIP2-DSW-2TX=	2-Port Fast Ethernet IP with Dist. Switching (100TX)
FEIP2-DSW-2FX=	2-Port Fast Ethernet IP with Dist. Switching (100FX)

**Cisco 7500 Multi-Channel Interface Processor**

CX-MIP-2CT1=	MultiChannel Interface Processor: T1/PRI 2-port
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**Cisco 7500 Versatile Interface**

VIP2-50=	Versatile Interface Processor 2, Model 50
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**Cisco 7500 Channelized DS3**

CT3IP-40=	Channelized DS3 with 2M SRAM, DSW,DS - Spare
CT3IP-50=	Channelized DS3 Model 50 Interface Processor

**Cisco 7500 Port Adapters**

PA-7KF-SPA=	Dual Serial Port Adapter
PA-7KF-E1/75=	Dual E1 G.703/G.704 75ohm/Ubal Port Adapter
PA-2FEISL-FX=	2-port Fast Ethernet/ISL 100BaseFx Port Adapter SPARE
PA-2FEISL-TX=	2-port Fast Ethernet/ISL 100BaseTx Port Adapter SPARE
PA-F-MM=	1-port FDDI Multimode Port Adapter
PA-F-SM=	1-port FDDI Single-mode Port Adapter
PA-F/FD-MM=	1-port FDDI Full Duplex Multi-Mode Port Adapter
PA-F/FD-SM=	1-port FDDI Full Duplex Single-Mode Port Adapter
PA-2H=	2-port HSSI Port Adapter
PA-A3-OC3MM=	1-port ATM Enhanced OC3c/STM1 Multimode Port Adapter
PA-A3-OC3SMI=	1-port ATM Enhanced OC3c/STM1 Singlemode (IR) Port Adapter
PA-A3-OC3SML=	1-port ATM Enhanced OC3c/STM1 Singlemode (LR) Port Adapter
PA-T3=	1-port T3 Serial Port Adapter with T3 DSUs
PA-T3+=	1-port T3 Serial Port Adapter Enhanced
PA-2T3=	2-port T3 Serial Port Adapter with T3 DSUs
PA-2T3+=	2-port T3 Serial Port Adapter Enhanced, Spare
PA-MC-T3=	1-port multichannel T3 port adapter
PA-MC-4T1=	4-port multichannel T1 port adapter with integrated CSU/DSUs
PA-MC-8T1=	8-port multichannel T1 port adapter with integrated CSU/DSUs
PA-MC-8DSX1=	8-port multichannel DS1 port adapter with integrated DSUs
PA-100VG=	1-port 100VG Port Adapter
PA-2JT2=	2-port JT2 6.3Mb/s Serial Port Adapter
PA-POS-OC3MM=	1-port Packet/SONET OC3c/STM1 Multimode PA
PA-POS-OC3SMI=	1-port Packet/SONET ONC3c/STM1 Singlemode (IR) P
PA-POS-OC3SML=	1-port Packet/SONET OC3c/stm1 Singlemode (LR) PA
MAS-VIP-PABLANK=	Blank, Spare, Port Adapter

**Cisco 7500 Service Adapters**

SA-COMP/1=	Service Adapter; Compression (64 VC's Stac) - Spare
SA-COMP/4=	Service Adapter; Compression (256 VC's Stac) - Spare
SA-ENCRYPT=	Encryption Service Adapter - Spare

**Cisco 7500 Packet Over SONET**

POSIP-OC3-50-MM=	Packet Over SONET Model 50 - OC3/SDH Multi-Mode 1-port
POSIP-OC3-50-SM=	Packet Over SONET Model 50 - OC3/SDH Single-Mode 1-port

**Cisco 7500 Power Supplies**

PWR/7-DC=	Cisco 7000/7507 DC Power Supply (Spare)
PWR/7-AC=	Cisco 7000/7507 AC Power Supply, US (Spare)
PWR-7513-DC=	Cisco 7513 DC Power Supply (Spare)
PWR-7513-AC=	Cisco 7513 AC Power Supply Spare, US

- For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

**For More Information**

See the Cisco 7500 Series Website: <http://www.cisco.com/go/7500>

## Cisco 12000 Series<sup>1</sup>

The Cisco 12000 series gigabit switch router (GSR) family is Cisco's premier gigabit routing platform for service providers. The product provides a cost-effective solution for implementing high bandwidth, packet-optimized, core backbones. The GSR series combines carrier class design with Cisco's proven software technology in delivering a reliable and scalable (bandwidth and performance) system to meet the exponential growth in data traffic. The GSR series provides an industry-leading breadth of interfaces including DS3, Fast Ethernet, Gigabit Ethernet, Dynamic Packet Transport, OC-3/STM-1 and OC-12/STM-4, Packet over SONET (POS) and ATM, and OC-48/STM-16 POS.




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### When to Sell

#### Sell This Product

##### Cisco 12008

#### When a Customer Needs These Features

- 40 Gbps switching capacity
- High density broadband interfaces per system (up to 84 DS3 to 7 OC48/STM16 per rack)
- Compact design, ideal solution for high port densities per 7 ft rack (up to 252 DS3 to 21 OC48/STM16 per rack)

##### Cisco 12012

- 60 Gbps switching capacity
- High density broadband interfaces per system (up to 132 DS3s, 11 OC48/STM16 persystem)

##### Cisco 12016

- 80 Gbps switching capacity
- High density broadband interfaces per system (up to 180 DS3s, 15 OC48/STM16 persystem)
- Future support for OC-192/STM 64 interfaces

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### Key Features

- Scalable Performance
  - Innovative switch fabric design supports virtual output queues (VoQs) to eliminate head-of-line blocking (HOLB) and increase overall system efficiency; supports partial fulfillment for multicast traffic
  - Distributed architecture delivers scalable Layer 3 switching performance through intelligent line cards (LCs) that can be added incrementally
- Scalable Services
  - Industry leading Cisco IOS software
  - State-of-the-art queuing and congestion management techniques: random early detection (RED), weighted RED (WRED), and deficit round robin (DRR) that provide an enhanced weighted fair queuing (WFQ) mechanism
  - Smooth scalability to OC-192/STM 64 infrastructures
- Carrier-class design with redundancy in all key system components

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco 12008	Cisco 12012	Cisco 12016
<b>Modular Slots</b>	8 configurable 5 switch fabric	12 configurable 5 switch fabric	16 configurable 5 switch fabric
<b>Line Card Slots</b>	7 (maximum)	11 (maximum)	15 (maximum)
<b>Supported Line Cards</b>	1-port OC-48/STM-16 POS 1-port channelized OC-12 to DS3 1-port channelized OC-12 to STM1 1-port Gigabit Ethernet 1-port OC-12/STM-4 ATM 4-port OC-3/STM-1 ATM 1-port OC-12/STM-4 POS 4-port OC-3/STM-1 POS 12-port DS3 8-port Fast Ethernet 4-port OC-12/STM-4 POS 2-port/1 ring OC-12/STM-4 SRP	Same as Cisco 12008	Same as Cisco 12008
<b>Processor Speed (type)</b>	200 MHz (R5000)	200 MHz (R5000)	200 MHz (R5000)
<b>Flash Memory</b>	20 MB (default) 128 MB (maximum)	20 MB (default) 128 MB (maximum)	20 MB (default) 128 MB (maximum)
<b>DRAM Memory</b>	128 MB GRP (default); 256 MB EDO (max) 64 MB line cards (default); 256 MB EDO (max) 64 MB buffered memory (default) to 256 MB (max) varies by line card	Same as Cisco 12008	Same as Cisco 12008
<b>Power Supply</b>	AC or DC	AC or DC	AC or DC
<b>Dimensions (HxWxD)</b>	24.85 x 17.4 x 21.2 in.	56 x 17.3 x 21 in.	71.5 x 19 x 22 in.

## Competitive Products

- Juniper: M40

## For More Information

See the Cisco 12000 Series Website: <http://www.cisco.com/go/12000>

## Cisco IP Telephones<sup>1</sup>

The telephone is the most visible and integral component of the voice communications network. IP telephones deliver essential business communications at a touch. Fully programmable, with two models to choose from, Cisco IP telephones provide the most frequently used business features in an easy-to-program and easy-to-use platform. Each model is a full-featured telephone that can be plugged directly into a standard 10BaseT Ethernet connection. Each provides toll-quality audio, with no need for a companion PC. Because they are IP-based telephones, they can be installed anywhere on a corporate IP network. The phones are Dynamic Host Configuration Protocol (DHCP) supported and don't need to be co-located with the Cisco CallManager. Cisco IP telephones support both G.711 and G.723.1 audio compression for low-bandwidth requirements. Each model also contains an integrated Ethernet repeater, so you can use a single Ethernet switch port for the computer (data) and the Cisco IP telephone.



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### Key Features

- The Cisco 30 VIP is the full-featured Cisco IP telephone for executives and managers. It provides 30 programmable line and feature buttons, an internal, high-quality, two-way speakerphone with microphone mute, and a transfer feature button. A 40-character LCD display features 5/8" characters with information such as date and time, calling party name, calling party number, and digits dialed. An LED associated with each of the 30 feature and line buttons provides feature and line status.
- The Cisco 12 SP+ is the Cisco IP telephone designed for business professionals and office workers. This voice instrument supports 12 programmable line and feature buttons, an internal, high-quality two-way speakerphone, microphone mute, and a large LCD display for call status and identification. An LED associated with each of the 12 feature and line buttons provides feature and line status.
- DHCP support for Cisco IP telephones makes phone setup virtually automatic. With DHCP new installations can be accomplished in seconds, saving time and money over today's PBX system management.
- Moving Cisco IP telephones saves additional time and money because it requires no manual database adjustments or wiring changes. The phones can be moved from one 10BaseT port to another anywhere on the enterprise IP network. Cisco IP telephones will automatically boot and reregister with Cisco CallManager.
- Cisco IP telephones are Microsoft NetMeeting enabled. Using NetMeeting, features such as application sharing and video conferencing are available simply by pressing a button on your Cisco IP telephone. The phones are configured using your Web browser.

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

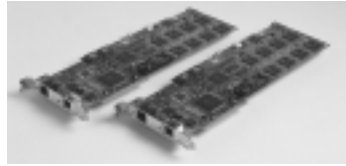
Feature	Cisco IP Telephone
<b>Dimensions (H x W x D)</b>	14.1 x 0.75 x 10.75 in (10.4 x 27.3 x 27.3)
<b>Phone Weight</b>	3.2 pounds (1.5 kg)
<b>Material, Housing</b>	ABS plastic, Dove Gray color Display
<b>Model 30 VIP</b>	5.58" x 0.78" in, 40 character X two-line; character height, 0.66" cm.
<b>Model 12SP+</b>	3" x 0.60", 20 character X two-line; character height.50"
<b>Interface</b>	Two Standard 10Base-T RJ-45 interfaces (IEEE 802.3)—one for 10BaseT network to phone connection and one "hub port" for connection from phone to PC or other network device
<b>Software Specification</b>	Requires Cisco CallManager to be installed on the IP network
<b>Description Output</b>	48 VDC
<b>AC Input Voltage</b>	100 to 230 VAC Country specific AC input current
<b>Frequency</b>	50 or 60 Hz
<b>Operating Temperature</b>	32° to 104°F (0° to 40°C)
<b>Storage Temperature</b>	14° to 140°F (-10° to 60°C)
<b>Operating Humidity</b>	10% to 95% (non-condensing)

## For More Information

See the Cisco IP Telephones Web site: <http://www.cisco.com/go/iptel>

## Cisco Access Digital Gateways<sup>1</sup>

The Cisco Access Digital Gateway cards, the DT-24+ and DE-30+, provide the digital conversion gateways that enable IP telephones to send and receive telephone calls to and from the outside world. The cards work in conjunction with the Cisco CallManager software to convert digital IP voice calls to regular telephone calls, and vice-versa.



The cards plug into a personal computer's PCI slot, and have two interfaces: a T1-PRI or E1-PRI interface, which has 24 or 30 PCM (Pulse Code Modulated) channels, respectively; and a 10BaseT Ethernet interface.

When a Cisco IP telephone receives an incoming call from outside the LAN, the T1-PRI interface (or E1-PRI interface) receives the signal and sends it to the 10BaseT Ethernet interface, which converts it to digital IP packets.

Conversely, when a Cisco IP telephone dials an outside number, the signal is transmitted over the LAN to the 10BaseT Ethernet interface where the digital IP packets are reassembled and sent back out by the T1-PRI interface.

Cisco Access Digital Gateways are for customers who need digital interface capability for their IP telephones for one or both of the following reasons:

- System size (based on number of users and/or call traffic) makes a digital trunk interface more economical than separate analog interfaces.
- Direct inward dial (DID) functionality is desired in order to eliminate manually transferring outside calls.

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### Key Features

- Flexibility
  - The DT-24+ and DE-30+ can be installed in any PCI bus computer; they draw power from the bus, and are controlled by the Cisco CallManager to provide call ingress and egress to the IP telephone system
  - Since it does not touch the data bus, it does not affect the performance or operation of the host PC in any way
  - Multiple cards can be mounted in the same chassis
- Support and installation convenience
  - Cisco Access Digital Gateways automatically registers with the Cisco CallManager, making it simple to install
  - The DT-24+ and DE-30+ are fully manageable from the Cisco CallManager
  - Highly reliable design provides fewer points of failure
  - Downloadable software via automatic TFTP upon boot-up
  - The DT-30+ supports CRC4 framing only

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Description	Cisco Access Digital Gateway
<b>Supported Features</b>	Supplementary services (hold, transfer park, etc.) on outside calls ISDN-PRI- both network and user side Switchover to secondary (and tertiary) Cisco CallManager during Cisco CallManger failover situations
<b>Performance</b>	Supports up to 23 (DT-24+) or 30 (DE-30+) simultaneous compressed calls
<b>Dimensions (H x W)</b>	4.125 x 12.25 in. (10.48 x 31.12 cm)
<b>Power</b>	1 Amp from 5v PCI bus, (0 Amps from 3.3V bus), for approximately 5 Watts power
<b>Operating Temperature</b>	32° to 104°F (0° to 40°C)
<b>Relative Humidity</b>	10 to 95% (noncondensing)
<b>Storage Temperature</b>	14° to 140°F (-10° to 60°C)
<b>On-board, Integrated Digital Signal Processors (DSPs) connect to 2 interfaces</b>	T1/E1 (RJ-48C female) interface 10Base-T Ethernet network interface (RJ-45 female)
<b>Simultaneous, 30-channel operation of these functions:</b>	Circuit-switched to packet adaption G.711 mu-law to A-law translation G.711 A-law to mu-law translation G.711 (A-law or mu-law) to G.723.1 transcoding OR G.711 (A-law or mu-law) to G.729A transcoding Line echo cancellation DTMF detection and out-of-band signaling translation towards packet side

## For More Information

See the Cisco Access Digital Gateways Web site: <http://www.cisco.com/go/adg>

## Cisco Media Convergence Server 7830<sup>1</sup>



The Cisco Media Convergence Server 7830 (MCS-7830) is a high-availability server platform for the Cisco desktop IP telephony system. With Cisco C allManager software preinstalled in this fault-tolerant server, the wide-scale deployment of industry-leading Cisco IP telephony solutions has never been easier. The Cisco MCS-7830 is an integral part of a complete, scalable architecture for a new generation of high-quality IP voice solutions that run on the enterprise data network. The MCS-7830 delivers the high performance and availability demanded by today's enterprise networks and represents a turnkey solution that is easy to deploy and highly cost-effective.

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### Key Features

The Media Convergence Server has the following features:

- Fault-tolerant, high availability rack mount Windows NT server with Cisco C allManager software preinstalled
- Combines with Cisco switching infrastructure, Cisco IP Telephony Gateways, and Cisco IP telephones to build a “New World” Cisco Desktop IP Telephony system
- Powerful enough for large enterprise IP telephony deployments thanks to a Pentium III / 500 MHz processor and 256 MB of ECC SDRAM
- Includes redundancy features such as redundant, hot-swappable power supplies and redundant 9.1GB SCSI hard drives configured for RAID 0/1 disk mirroring
- Includes a Remote Management Board (RMB) that is completely independent of the server operating system and processor for remote access to the server; also, the RMB is capable of sending a network manager an email or page if the server is experiencing difficulty
- Includes a rack mount kit that allows the MCS-7830 to be installed in most industry standard 19-inch racks
- Fully supported by Cisco's Technical Assistance Center

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

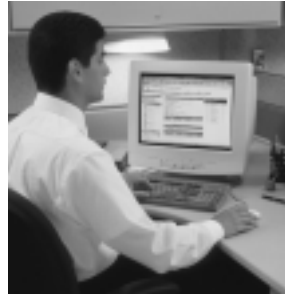
Description	Cisco Media Convergence Server 7830
<b>Server</b>	Intel Pentium III 500-MHz processor (dual processor capability) 512-KB second-level ECC cache 256 MB 100-MHz ECC SDRAM memory, expandable to 1 GB 10/100 TX PCI UTP controller (embedded) on the PCI local bus Integrated dual channel wide ultra SCSI-3 controller Support for up to six 1-inch wide ultra2 SCSI hot-plug drives Dual 9.1-GB Ultra SCSI hot-plug drives 1.44-MB floppy disk Preinstalled high-speed IDE CD ROM drive Dual 325W hot-plug redundant power supplies Two PCI and four shared PCI/ISA slots, (six total slots) Integrated 1024 x 768, 256-color, noninterlaced on PCI local bus, 1-MB video memory 5U rack height, ships with sliding rails and cable management
<b>Remote Management Board</b>	Automatic server recovery-2 (ASR-2) Integrated remote console (IRC) Hardware remote console Full remote server reboot capability Reset and failure sequence replay Host hardware independent Operating system independent Communication is out of band Serial port for modem connection Battery backup
<b>Security</b>	Power-on password Hot-plug keyboard password Diskette drive control Diskette boot control QuickLock, network server mode Parallel and serial interface control Administrator's password Disk configuration lock
<b>Preinstalled Software</b>	Cisco CallManager (call processing and call control application) Cisco CallManager database (ODBC configuration database) Cisco CallManager Administration software (web-browsable application provides graphical user interface to Cisco CallManager database) Cisco ConferenceBridge (basic voice-conferencing application) Cisco ActivePhoneBook (click to call, browsable directory service) Cisco Web Attendant Console (software-only, web-browsable manual attendant console) Windows TAPI version 2.1 service provider interface Microsoft Windows NT Server Microsoft Internet Information Server (IIS) (web server for remote access to Cisco CallManager database)
<b>Dimensions (HxDxW)</b>	8.67 x 19 x 22.75 in. (22 x 48.34 x 55.9 cm)
<b>Weight</b>	63 lbs (28.35 kg) (without hard drives)
<b>Acoustic Noise NPEL (BELS)</b>	Idle (fixed disk drives spinning) 643
<b>Average SPL (dBA)</b>	Operating (random seeks to fixed disks) 6.144

## For More Information

See the Cisco Media Convergence Server 7830 Web site:  
<http://www.cisco.com/go/mcs>

## Cisco CallManager Version 2.4<sup>1</sup>

The Cisco CallManager is the call-processing software component of the CiscoAVVID (Architecture for Voice, Video and Integrated Data) network. Cisco CallManager software is preinstalled and preconfigured on a server-class, high availability platform that extends enterprise telephony features and functions to packet telephony network devices such as IP phones, software phones, and Voice over IP (VoIP) gateways. Additional voice, video, and data services such as unified messaging, multimedia conferencing, collaborative contact centers, and interactive multimedia response systems are provided through open application programming interfaces (API). Cisco CallManager provides basic call processing, signaling, and connection services to packet telephony devices.



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### Key Features

- Features a suite of integrated voice applications that perform voice conferencing, manual Web attendant console, click-to-call, and other functions.
- Extends supplementary services such as hold, transfer, forward, conference, multiple line appearances, automatic route selection, speed dial, last-number redial, and other features to IP phones and gateways.
- Allows phones, gateways, and applications to be distributed across a routable IP network, providing a single, distributed, virtual telephony network.
- Reduces cost of ownership over traditional enterprise telephony networks while extending capabilities well beyond the capabilities of traditional PBX.
- Is preinstalled on Windows NT servers. In a multiserver environment, Cisco CallManagers are logically coupled through an H.323 signaling interface. Microsoft IIS (Internet Information Server) is installed on the Cisco CallManager server to provide a Web-browsable interface to the Cisco CallManager configuration database.
- A duplicate, hot-standby CiscoCallManager server can back up individual Cisco CallManager servers, providing complete call processing redundancy.
- Currently, Cisco CallManager scales to a single server. The architecture allows for a natural progression to a scalable network of multiple, redundant Cisco CallManager servers with inter-CallManager feature transparency.
- Enhancing Cisco CallManager is a matter of upgrading software, so you avoid expensive hardware upgrades.
- A Windows Telephony Applications Programming Interface (TAPI) is available for third-party applications development.

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco CallManager
<b>Platform</b>	Media Convergence Server, MCS-7830 Enterprise packet telephony application High availability, 5U high, 19 inch wide, suitable for platform mounting in 19 inch racks
<b>Preinstalled, Preconfigured Software</b>	<p>Cisco CallManager version 2.4 (call processing and call control application)</p> <p>Cisco CallManager version 2.4 configuration database</p> <p>Cisco CallManager Administration software (Web-browsable application provides graphical user interface to Cisco CallManager database - unlimited usage)</p> <p>Cisco ConferenceBridge (basic voice conferencing application - unlimited usage)</p> <p>Cisco Active PhoneBook (click to call, browsable directory service - unlimited usage)</p> <p>Cisco Web Attendant Console (software-only, Web-browsable manual attendant console - unlimited usage)</p> <p>Windows TAPI version 2.1 service provider interface (unlimited usage/number TAPI ports)</p> <p>Microsoft Internet Information Server (IIS) (Web server for remote access to Cisco CallManager database)</p>
<b>System Capabilities</b>	<p>Automated bandwidth and route selection</p> <p>H.323 supplementary services; H.323 compliant interface to third-party gateways, clients, gatekeepers; H.323 version 2 RAS Call processing server redundancy—hot standby server</p> <p>Manual attendant console—software-only</p> <p>Multiple ISDN protocol support—N12, 5ESS, 4ESS, EuroISDN, DMS-100/250, 5ESS custom and more</p> <p>Transparently deployable across an IP network VoIP Gateway redundancy</p> <p>Outbound call blocking and filtering</p> <p>TAPI 2.1 service provider interface</p> <p>Device configuration through Web browser</p> <p>Call admission control across constricted WAN links</p> <p>Digit analysis and subsequent call treatment</p> <p>SMDI interface for message waiting indication</p> <p>Secure Cisco CallManager remote serviceability access through Cisco bridged Telnet service</p> <p>Enterprise dial plan support</p> <p>Single, unified dial plan</p> <p>Out-of-band DTMF signaling for improved</p> <p>DTMF response with low bandwidth CODECs</p> <p>Command line interface for server monitoring</p> <p>Emergency 911 call locator regulation compliance</p>
<b>User Features</b>	<p>Ad-hoc multiparty voice conference; meet-me multiparty conference; single button video conference initiation</p> <p>Calling Party ID display</p> <p>Multiple extensions per phone; Shared extension, multiple phones</p> <p>Answer/answer release</p> <p>Auto-answer</p> <p>Click to dial from Web phone listing</p> <p>Shared extension privacy</p> <p>Call Forward-All; Call Forward-Busy; Call Forward-No Answer</p> <p>Single button data collaboration initiation</p> <p>Direct Inward Dial (DID); Direct Outward Dial; Last Number Redial</p> <p>Call Hold/Retrieve; Tone-on-Hold</p> <p>Manual Attendant Console; Transfer-with consult Call Park/Pickup; Transfer-without consult</p> <p>Call Waiting/Retrieve; Message Waiting Indication</p> <p>User device configuration-speed dial, call forward</p>
<b>Administrative Features</b>	<p>Call Detail Records</p> <p>Remote system event monitoring</p> <p>Y2K software compliance</p> <p>Configurable per-phone date/time display format; Configurable per-phone time zone - synced to Cisco CallManager</p> <p>Remote system and component performance monitoring</p> <p>Zero-cost phone/gateway moves</p> <p>OS time services</p> <p>Phone/gateway upgrades through software download</p> <p>E911 database configuration utility</p>

## For More Information

See the Cisco CallManager Web site: <http://www.cisco.com/go/callmgr>

# Cisco Switches and Hubs at a Glance

Product	Features	Page
<b>Cisco 1548 Series Micro Switches 10/100</b>	Fixed-configuration 10/100 Fast Ethernet switches <ul style="list-style-type: none"> <li>• 8 autosensing 10/100 ports</li> <li>• Managed and unmanaged versions</li> <li>• Part of the Cisco Networked Office stack family</li> </ul>	101
<b>Catalyst 1900 Series</b>	Fixed-configuration Ethernet switches <ul style="list-style-type: none"> <li>• 12 or 24 10BaseT ports</li> <li>• Two 100BaseTX, one 100BaseFX, or two 100BaseFX uplinks</li> <li>• Cisco switch clustering enabled</li> <li>• Managed</li> </ul>	103
<b>Catalyst 2820 Series</b>	Modular Ethernet switches <ul style="list-style-type: none"> <li>• 24 10BaseT ports</li> <li>• Two high-speed module slots for Fast Ethernet, FDDI, and ATM</li> <li>• Cisco switch clustering enabled</li> <li>• Managed</li> </ul>	106
<b>Catalyst 2900 Series</b>	Fixed-configuration Ethernet switches <ul style="list-style-type: none"> <li>• 10/100 autosensing and autonegotiating interface</li> <li>• Dual high-speed 100BaseTX, 100BaseFX, 1000BaseSX, or 1000BaseLX uplinks</li> <li>• Cisco switch clustering enabled</li> <li>• Managed</li> </ul>	109
<b>Catalyst 2900 Series XL</b>	Fixed and modular 10/100 Ethernet switches <ul style="list-style-type: none"> <li>• 12, 22, or 24 10/100 ports</li> <li>• 12 100Base FX ports (2912MF XL)</li> <li>• Two high-speed module slots accommodating 10/100, 100BaseFX, Gigabit Ethernet, ATM, and GigaStack GBIC (2912 MFXL and 2 924MXL only)</li> <li>• Cisco switch clustering enabled</li> <li>• Managed</li> </ul>	112
<b>Catalyst 3500 Series XL</b>	Fixed-configuration 10/100 and Gigabit Ethernet switches <ul style="list-style-type: none"> <li>• 12, 24, or 48 10/100 ports with 2 GBIC-based Gigabit Ethernet ports</li> <li>• 8 GBIC-based ports (3508G XL)</li> <li>• Stackable up to 9 switches with GigaStack GBIC</li> <li>• Cisco Switch Clustering capable</li> <li>• Managed</li> </ul>	115
<b>Catalyst 3900 Series</b>	Fixed and modular Token Ring switches <ul style="list-style-type: none"> <li>• 20 or 24 Token Ring ports</li> <li>• Stackable up to 8 switches</li> <li>• One FlexSlot accommodating additional Token Ring ports or ATM or ISL uplinks (Cisco 3900 only)</li> <li>• Managed</li> </ul>	118
<b>Catalyst 4000 Series</b>	10/100/1000 Ethernet for Desktop and Server switching with intelligent enterprise IOS services <ul style="list-style-type: none"> <li>• Ethernet, Fast Ethernet, and Gigabit Ethernet</li> <li>• Gigabit Interface Converter (GBIC) architecture on fiber port interfaces</li> <li>• 24 Gbps of dedicated bandwidth</li> <li>• Managed</li> </ul>	121
<b>Catalyst 5000 Family</b>	Fully modular, high-performance, multimedia switches <ul style="list-style-type: none"> <li>• Ethernet, Fast Ethernet, Fast EtherChannel®, Gigabit Ethernet (future), FDDI/CDDI, Token Ring, and ATM modules</li> <li>• System multicast throughput ranging from 1 Mpps to &gt;50 Mpps</li> <li>• Optional route switch module and NetFlow switching feature card for Layer 3 functionality</li> <li>• Managed</li> </ul>	123
<b>Catalyst 6000 Family</b>	High-performance, multilayer switches <ul style="list-style-type: none"> <li>• Fast Gigabit Ethernet backbone solution</li> <li>• 10/100 Ethernet, Fast Ethernet (fiber), and Gigabit Ethernet modules</li> <li>• Packet throughput scalable to 150 Mpps</li> <li>• Managed</li> </ul>	128
<b>Catalyst 8500 Series</b>	High-performance, modular, multimedia switch router <ul style="list-style-type: none"> <li>• Wire speed, nonblocking IP/PPX, IP multicast Layer 3 switching</li> <li>• Multiple interface options</li> <li>• Managed</li> </ul>	131

<b>Product</b>	<b>Features</b>	<b>Page</b>
<b>Cisco HP 10BaseT Hub</b>	Fixed configuration Ethernet hub <ul style="list-style-type: none"> <li>• 16 10BaseT ports and 1 AUI connection</li> <li>• Manageable via SNMP, telnet, or terminal-based</li> <li>• Integrated with Cisco IOS technologies</li> </ul>	133
<b>Cisco 1538 Series Micro Hubs 10/100</b>	Fixed-configuration 10/100 Fast Ethernet hubs <ul style="list-style-type: none"> <li>• 8 autosensing 10/100 ports</li> <li>• Managed and manageable versions</li> <li>• Part of the Cisco Networked Office stack family</li> </ul>	135
<b>FastHub 400 10/100 Series Repeaters</b>	Modular 10/100 Fast Ethernet hubs <ul style="list-style-type: none"> <li>• 12 and 24 autosensing 10/100 ports</li> <li>• Managed and manageable versions</li> <li>• Stackable up to 4 units</li> <li>• Optional switched uplink modules</li> </ul>	137

# Cisco Switches and Hubs Port Matrix

	Switches											Hubs		
	Cisco 1548U/1548M	Catalyst 1900	Catalyst 2820	Catalyst 2900	Catalyst 2900 XL	Catalyst 3500 XL	Catalyst 3900	Catalyst 4000	Catalyst 5000	Catalyst 6000	Catalyst 8500	Cisco HP 1516	Cisco 1538/1538M	FastHub 400
Fixed Ports Only	X	X										X	X	
Fixed and Modular Ports			X	X	X	X	X							X
Modular Ports Only								X	X	X	X			
<b>Ports</b>														
10BaseT Switched		X	X		X	X			X					
10BaseFL Switched				X					X					
100BaseT Switched		X	X	X	X	X			X					
100BaseF Switched		X	X	X	X				X	X	X			
10/100 Autosensing Switched	X			X	X	X		X	X	X	X			
Shared 10BaseT									X			X		
Shared 10/100													X	X
Shared 100BaseT			X						X					
Shared 100BaseF			X											
Token Ring							X		X					
FDDI/CDDI			X						X					
ATM			X		X		X		X					
Gigabit Ethernet				X	X	X		X	X	X	X			

## Cisco Ethernet and Fast Ethernet Switches Overview

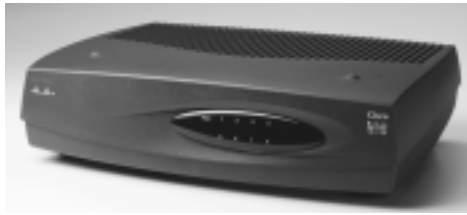
Cisco's award-winning Catalyst switch family spans the entire user application spectrum, from cost-conscious desktop and workgroup switches to multilayer-capable switches for scalable enterprise applications in the wiring closet, data center, and backbone. The Catalyst line of switching solutions offers scalability, breadth, performance, and manageability.

Cisco IOS software delivers advanced network services to Catalyst platforms and networked applications. Cisco IOS technologies, optimized for switching and available on all Catalyst switches, include Fast EtherChannel technology for bandwidth aggregation, Cisco Group Management Protocol support for optimized performance with multicast and multimedia traffic, and extensive management features. Cisco IOS software also provides support for virtual LAN (VLAN) configuration and management, IP address management, and secure access to network services.

Some of the key features of Cisco IOS software as it is supported by Catalyst Ethernet switches include the following:

- CiscoView graphical-user-interface (GUI) based network management support, allowing easy point-and-click discovery of device status, statistics, and comprehensive per-port configuration and performance information
- Web-based interface for installation and administration
- Telnet and SNMP support for in-band and out-of-band management console
- Embedded RMON for four groups of RMON and a Switched Port Analyzer port, supporting a RMON probe for complete traffic monitoring
- LEDs for monitoring the activities and status of the switches
- IEEE 802.1d spanning tree for network loop detection and disabling, and for fault-tolerant connectivity
- Cisco Discovery Protocol (CDP) to deliver network topology discovery and mapping, allowing devices to discover other Cisco devices on the network
- Multicast address registration and packet filtering
- Intranet multimedia and multicast support through the CGMP
- VLANs ease network administration by enabling users to be logically grouped, regardless of physical location (Catalyst 1900, 2820, 2900, 2900 OXL, 3500 XL, 3900, 4000 Family, 5000 Family, and 6000 Family)
  - Virtual Trunking Protocol (VTP) allows VLAN configuration changes made on one switch to be automatically updated to the other switches
  - Inter-Switch Link (ISL) protocol dynamically configures trunk ports between Catalyst switches
- Fast EtherChannel and Gigabit EtherChannel technologies provide bandwidth aggregation, which enable parallel bandwidth links between switches (Catalyst 1900, 2820, 2900 XL, 3500 XL, 4000 Family, 5000 Family, and 6000 Family)

## Cisco 1548 Series Micro Switches 10/100



The Cisco 1548 Series Micro Switches are affordable autosensing 10/100 Fast Ethernet switches for creating high-performance LANs in

enterprise remote branch offices or small and growing businesses. For customers whose bandwidth requirements have outgrown their legacy 10BaseT networks, the eight-port Cisco 1548M and Cisco 1548U switches offer dedicated 10/100 autosensing Fast Ethernet connections for aggregating workgroups or connecting Ethernet or Fast Ethernet desktops.

The Cisco Series Micro Switches 1548 are part of the Cisco Networked Office stack family of products designed to provide integrated, secure networking solutions for small businesses and small branch offices.

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### When to Sell

#### Sell This Product

##### Cisco 1548U

#### When a Customer Needs These Features

- Dedicated 10- or 100-Mbps autosensing, autonegotiating connections to individual users, workgroups, and servers to support bandwidth-intensive applications

##### Cisco 1548M

- Dedicated 10- or 100-Mbps autosensing, autonegotiating connections to individual users, workgroups and servers to support bandwidth-intensive applications
- Cost-effective and powerful management with SNMP and RMON management protocols and a Web-based management interface
- Port-based VLANs for increased performance and security

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### Key Features

- Eight autosensing 10BaseT/100BaseTX Fast Ethernet ports that support connections at Ethernet and Fast Ethernet speeds
- Autosensing of communications speed and autonegotiation of duplex mode
- Web-based management interface provides the most powerful and cost-effective management options in its class (1548M only)
- Full-duplex operation on each switched 10/100 port, delivering up to 200 Mbps of bandwidth to end stations or servers and between switches
- Automatic configuration and self-test on startup
- Extensive array of LEDs for convenient visual management
- Operation as a standalone device or connected to other hubs, switches, or routers to form a larger network

## Specifications

Feature	Cisco 1548U	Cisco 1548
<b>Fixed Ports (connections)</b>	8-port 10/100 autosensing	8-port 10/100 autosensing
<b>Modular Slots</b>	None	None
<b>Stackable</b>	No	No
<b>Full-Duplex Capabilities</b>	Yes	Yes
<b>VLAN Maximum</b>	No	Up to four overlapping bridge groups or VLANs
<b>Management Capabilities</b>	No	SNMP out-of-band, Telnet, RMON, CDP, Web-Based Management Interface, CWSI support, CiscoView support
<b>Embedded RMON</b>	No	History, Events, Alarms, Statistics
<b>Dimensions (HxWxD)</b>	3.1 x 11.2 x 8.7 in.	3.1 x 11.2 x 8.7 in.
<b>Service Category</b>	1	1

## Competitive Products

- 3Com: Baseline 10/10 Switch and OfficeConnect Switch 400
- Intel: InBusiness Switch Plus
- Nortel: NetGear FS508

## Distribution Part Numbers and Ordering Information

### Cisco 1548 Series Micro Switches 10/100<sup>1</sup>

CISCO1548U-DS	8-port 10/100- Autosensing, Full-Duplex Switch
CISCO1548M	8-port 10/100- Autosensing, Full-Duplex, Managed Switch
CON-SNT-PKG1	Cisco 1548 Micro Switch SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco 1548 Micro Switch Web site: <http://www.cisco.com/go/1548>

## Cisco Catalyst 1900 Series

The Catalyst 1900 series switches, available in Standard and Enterprise editions, provide industry-leading performance and



Cisco end-to-end network integration at an exceptionally affordable price. Enterprise edition software enables the Catalyst 1900 Series to deliver unmatched network configuration flexibility and scalability through embedded Cisco IOS technologies, delivering comprehensive management and security, bandwidth optimization, networked multimedia, and virtual LAN (VLAN) support.

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### When to Sell

#### Sell This Product

##### Catalyst 1900 Series Standard Edition

##### Catalyst 1900 Series Enterprise Edition

#### When a Customer Needs These Features

- Lowest-cost switched Ethernet to individual desktops and 10BaseT hubs
- High-speed connections to 100BaseT or 100BaseFX backbones or servers
- Software upgradable to Enterprise edition
- End-to-end ISL VLANs
- Bandwidth aggregation with Fast EtherChannel technology
- Enhanced security with TACACS+ and multi-level console access
- Consistent management interface across Cisco product lines with Cisco IOS command-line interface (CLI)
- Dynamic multicast containment with CGMP
- Increased reliability via uplinkfast

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### Key Features

- 1024 Media Access Control (MAC) address cache
- Web-based interface for ease of installation, administration and management
- CiscoWorks device-management support
- Telnet and SNMP support for in-band management and a menu-driven, out-of-band management console
- CGMP for dynamic and selective forward routed IP multicast traffic to target multimedia end stations, reducing overall network traffic and reducing network disruptions
- Embedded RMON software agents that support four RMON groups and SPAN port for connection to RMON probe
- Support for up to four overlapping bridge groups to manage bandwidth and provide added security through broadcast control
- Cisco IOS CLI (Enterprise edition)
- Cisco's switch clustering technology enables up to 16 interconnected Catalyst 1900, 2900 XL, and 3500 XL switches, regardless of geographic location, to form a flexible, single IP managed network

## Specifications

Feature	Catalyst 1912	Catalyst 1924
<b>Fixed Ports (connections)</b>	12-port (10BaseT) 1-port (AUI) 2-port 100BaseTX or 1-port 100BaseTX and 1-port 100BaseFX (1912C)	24-port (10BaseT) 1-port (AUI) 2-port 100BaseTX, 1-port 100BaseTX and 1-port 100BaseFX (1924C), or 2-port 100BaseFX (1924F)
<b>Modular Slots</b>	None	None
<b>Backplane</b>	1 Gbps	1 Gbps
<b>Stackable</b>	No	No
<b>Full-Duplex Capabilities</b>	Half/full duplex autonegotiated	Half/full duplex autonegotiated
<b>VLAN Maximum</b>	Up to four overlapping bridge groups or 1024 ISL VLANs	Up to four overlapping bridge groups or 1024 ISL VLANs
<b>FEC</b>	Yes	Yes
<b>ISL</b>	Yes	Yes
<b>Management Capabilities</b>	SNMP, out-of-band, Telnet, RMON, Cisco Visual Switch Manager Web-based interface, CWSI, CiscoView, StackView/Stack Maker	Same as Catalyst 1912
<b>Processor</b>	80486 CPU	80486 CPU
<b>Flash Memory</b>	1 MB	1 MB
<b>DRAM</b>	2 MB	2 MB
<b>Embedded RMON</b>	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics
<b>Dimensions (HxWxD)</b>	1.73 x 17.5 x 8.25 in.	1.73 x 17.5 x 8.25 in.
<b>Service Category</b>	1 (Standard edition) 2 (Enterprise edition)	2 (Standard edition) 3 (Enterprise edition)

## Competitive Products

- 3Com: SuperStack Switch 1100
- Nortel: BayStack 303 and 304 switches

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## Distribution Part Numbers and Ordering Information

### Catalyst 1900 Switch Family (Standard)<sup>1</sup>

WS-C1912-A	12-port 10bT, 2-port 100bTX (Enterprise Upgradeable)
WS-C1924F-A	24-port 10bT, 2-port 100bFX
WS-C1912C-A	12-port 10bT, 1-port 100bTX, 1-port 100bFX (Enterprise Upgradeable)
WS-C1924-A	24-port 10bT, 2-port 100bTX- Enterprise Upgradeable
WS-C1924C-A	24-port 10bT, 1-port 100bTX, 1-port 100bFX (Enterprise Upgradeable)

### Catalyst 1900 Switch Family (Enterprise)

WS-C1912-EN	12-port 10bT + 2-port 100bTX (ISL, CGMP, RMON)
WS-C1912C-EN	12-port 10bT + 1-port 100bTX + 1-port 100bFX (ISL, CGMP, RMON)
WS-C1924-EN	24-port 10bT + 2-port 100bTX (ISL, CGMP, RMON)
WS-C1924C-EN	24-port 10bT + 1-port 100bTX + 1-port 100bFX (ISL, CGMP, RMON)
WS-C1924F-EN	24-port 10bT + 2-port 100bFX

### Catalyst 1900 Switch Bundles

WS-C1924-EN-5PACK	Five Catalyst 1924-EN Switches
WS-C1924C-EN-5PACK	Five Catalyst 1924C-EN Switches

### Catalyst 1900 Series Upgrade Kits

WS-C19/28-EN	Catalyst 1900/2820 Enterprise Edition Upgrade Kit
WS-C19/28-IDEN	Catalyst 1900/2820 Enterprise Edition Upgrade Kit (10 pack)

### Catalyst 1900 Series Basic Maintenance

CON-SNT-PKG1	Catalyst 1912 Standard Edition SMARTnet Maintenance
CON-SNT-PKG2	Catalyst 1912 Enterprise Edition SMARTnet Maintenance
CON-SNT-PKG2	Catalyst 1924 Standard Edition SMARTnet Maintenance
CON-SNT-PKG3	Catalyst 1924 Enterprise Edition SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Catalyst 1900 Website: <http://www.cisco.com/go/1900>

## Cisco Catalyst 2820 Series

The Catalyst 2820 series switches, available in Standard and Enterprise editions, provide industry-leading performance and Cisco end-to-end network integration at an exceptionally affordable price. Enterprise edition software enables these switches to deliver unmatched network configuration flexibility and scalability through embedded Cisco IOS technologies, which delivers comprehensive management and security, bandwidth optimization, networked multimedia, and virtual LAN (VLAN) support. Cisco's switch clustering technology enables up to 16 interconnected Catalyst 1900, 2900 XL, and 3500 XL switches, regardless of geographic location, to form a flexible, single IP managed network.




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### When to Sell

#### Sell This Product

##### Catalyst 2820 Series Standard Edition

##### Catalyst 2820 Series Enterprise Edition

#### When a Customer Needs These Features

- Affordable switched Ethernet for larger workgroups
- High-speed module choices with switched and shared 100BaseTX, 100BaseFX, switched FDDI, and ATM
- Dynamic multicast management support (CGMP)
- Software upgradability to Enterprise edition features
- End-to-end ISL VLANs
- Bandwidth aggregation with Fast EtherChannel technology
- Up to 64 emulated LANs (ELANs)

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### Key Features

- Increases performance of Ethernet workgroups that require 100BaseTX, 100BaseFX, FDDI, or ATM connectivity to servers and backbones
- CollisionFree operation for full-duplex 100BaseT, providing up to 200-Mbps bandwidth and extended distances using fiber cabling
- Web-based interface for ease of installation and administration
- Up to 370-Mbps maximum forwarding bandwidth and 550,000 packets-per-second (pps) aggregate packet-forwarding rate (64-byte packets)
- Telnet and SNMP support for in-band management and a menu-driven, out-of-band management console
- CGMP for dynamic and selective forward routed IP multicast traffic to target multimedia end stations, reducing overall network traffic
- Embedded RMON software agents that support four RMON groups (history, statistics, alarms, and events)
- Cisco IOS CLI (Enterprise edition)
- Bandwidth aggregation through Fast EtherChannel enhances fault tolerance and offers up to 400 Mbps of bandwidth between switches and routers and individual servers (Enterprise edition)

## Specifications

Feature	Catalyst 2828
<b>Fixed Ports (connections)</b>	24-port (10BaseT) 1-port (AUI)
<b>Modular Slots</b>	2
<b>Available Modules</b>	1-port 100BaseT 8-port 100BaseTX (shared) 1-port 100BaseFX 4-port 100BaseFX (shared) 1-port FDDI fiber DAS 1-port FDDI fiber SAS 1-port FDDI UTP SAS (CDDI) 1-port ATM UTP 1-port ATM MMF 1-port ATM 155 single mode, medium-reach fiber 1-port ATM 155 single mode, long-reach fiber
<b>Backplane</b>	1 Gbps
<b>Stackable</b>	No
<b>Full Duplex Capabilities</b>	Half/full duplex autonegotiated
<b>Maximum Number of Addresses</b>	8192
<b>VLAN Maximum</b>	Up to four overlapping bridge groups or 1024 ISL VLANs
<b>FEC</b>	Yes
<b>ISL</b>	Yes
<b>Management Capabilities</b>	SNMP, out-of-band, Telnet, RMON, Cisco Visual Switch Manager Web-based interface, CWSI, ATM Director, CiscoView, StackView/Stack Maker
<b>Processor</b>	80486 CPU
<b>Flash Memory</b>	1 MB
<b>DRAM</b>	2 MB
<b>Embedded RMON</b>	History, Events, Alarms, Statistics
<b>Dimensions (HxWxD)</b>	3.43 x 17.5 x 12.4 in.
<b>Service Category</b>	2 (Standard edition) 3 (Enterprise edition)

## Competitive Products

- 3Com: SuperStack Switch 1100
- Bay: BayStack 303 and 304 switches

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## Distribution Part Numbers and Ordering Information

### Catalyst 2820 Switch Family (Standard)<sup>1</sup>

WS-C2828-A 24-port 10bT, 2-slots (8K MAC, Enterprise Upgradeable)

### Catalyst 2820 Switch Family (Enterprise)

WS-C2828-EN 24-port 10bT, 2-slots (8K MAC, ISL, CGMP, RMON)

### Catalyst 2820 Series Modules

WS-X2811 1-port 100bT Module

WS-X2818 8-port 100bTX Module

WS-X2821 1-port 100bFX Module

WS-X2824 4-port 100bFX Module

WS-X2831 1-port FDDI Module (UTP,SAS)

WS-X2841 1-port FDDI Module (Fiber,SAS)

WS-X2842 1-port FDDI Module (Fiber,DAS)

WS-X2851 1-port ATM Module (155 Mbps, UTP)

WS-X2861 1-port ATM Module (155 Mbps, multimode, fiber)

WS-X2871 1-port ATM Module (155 Mbps, single mode, fiber - Medium Range)

WS-X2872 1-port ATM Module (155 Mbps, single mode, fiber - Long Range)

### Catalyst 2820 Series Upgrade Kits

WS-C19/28EEUG Catalyst 1900/2820 Enterprise Edition Upgrade Kit

WS-C19/28UG10 Catalyst 1900/2820 Enterprise Edition Upgrade Kit (10 Pack)

### Catalyst 2820 Series Basic Maintenance

CON-SNT-PKG2 Catalyst 2820 Series Standard Edition SMARTnet Maintenance

CON-SNT-PKG3 Catalyst 2820 Series Enterprise Edition SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Catalyst 2820 Website: <http://www.cisco.com/go/2820>

## Cisco Catalyst 2900 Series

The Cisco standalone Catalyst 2900 Series switches provide 10/100 autosensing and autonegotiating interfaces for enterprise level high-speed configuration flexibility in the wiring closet. The Catalyst 2900



Series is ideal for Ethernet workgroups and individual users who want the investment protection of 10BaseT and 100BaseTX connectivity alternatives without the need to replace wiring closet network devices. This product series also provides dual high-speed 100BaseTX, 100BaseFX, 1000BaseSX, or 1000BaseLX uplinks for wiring closet riser connections to the backbone or to servers.

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### When to Sell

#### Sell This Product

##### Catalyst 2926

#### When a Customer Needs These Features

- High-density 10/100 autosensing, autoconfiguring switching
- High-end enterprise features (Catalyst 5000 family code image and interfaces)
- Fast EtherChannel port aggregation (up to 800 Mbps) with load balancing, fault detection, and intelligent fail-over
- Gigabit Ethernet and Gigabit EtherChannel uplinks

##### Catalyst 2948G

- Alternative to Hubs and older switches when multimedia services are required in the wiring closet
- Lowest-cost mid-range switched 10/100/1000 Ethernet to individual desktops
- Wirespeed, non-blocking performance with large MTBF reliability
- Mature/proven Catalyst software compatibility in the wiring closet and data center
- End-to-end VLANs, EtherChannel, multicasting, and security

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### Key Features

- Enhanced Switched Port Analyzer (SPAN) functionality enables the user to mirror traffic on any port or VLAN
- Support for load balancing using VLANs and spanning tree on multiple parallel Fast Ethernet ISL trunks
- Complete VLAN solution that is easy to configure and manage
- Full SNMP management

## Specifications

Feature	Catalyst 2926	Catalyst 2948G
<b>Fixed Ports (connections)</b>	2-port 100BaseTX, 100BaseFX, 1000BaseSX, or 1000BaseLX 24-port 10/100 autosensing	48-port 10/100BaseTX 2-port 1000BaseX (GBIC)
<b>Backplane</b>	1.2 Gbps	24 Gbps
<b>Stackable</b>	No	No
<b>Full-Duplex Capabilities</b>	All ports	All ports
<b>VLAN Maximum</b>	1000	1024
<b>FEC</b>	Yes	Yes
<b>ISL</b>	2926T/2926F: Uplinks 2926GS/2926GL: All ports	No
<b>802.1Q</b>	2926T/2926F: No 2926GS/2926GL: Yes	Yes
<b>Management Capabilities</b>	Inboard console via terminal or modem, outboard via Telnet, SNMP, CSCOView, CWSI	CiscoWorks 2000, CWSI, CiscoView, CDP, VTP, Enhanced SPAN, SNMP, Telnet Client, BOOTP, TFTP
<b>Processor Speed (Type)</b>	2926T/2926F: 25MHz(C68EC040) 2926GS/2926GL: 15 0MHz( R4700RISC)	200 MHz (R5000 RISC)
<b>Flash Memory</b>	2926T/2926F: 4 MB 2926GS/2926GL: 8 MB	12 MB
<b>DRAM Memory</b>	2926T/2926F: 20 MB 2926GS/2926GL: 32 MB	64 MB
<b>Embedded RMON</b>	Statistics, history, alarms, events	Statistics, history, alarms, events
<b>Dimensions (HxWxD)</b>	5.75 x 17 x 18 in.	2.62 x 17.5 x 15 in.
<b>Service Category</b>	2926T/2926F: 10 2926GS/2926GL: 11	8

## Competitive Products

- 3Com: SS3300
- Bay Networks: BayStack 350T and 450T
- Cabletron: SmartSwitch 6000 and 2200

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## Distribution Part Numbers and Ordering Information

### Catalyst 2900 Series Switches (Standard)<sup>1</sup>

WS-C2926T	24-port 10/100 (autosensing, RJ-45), 2-port 100bTX
WS-C2926F	24-port 10/100 (autosensing, RJ-45), 2-port 100bFX
WS-C2948G	48-port 10/100 (autosensing, RJ-45), 2 1000X Slots
WS-C2926GS	24-port 10/100 (autosensing, RJ-45), 2-port 1000bSX
WS-C2926GL	24-port 10/100 (autosensing, RJ-45), 2-port 1000bLX

### Catalyst 2900 Series Modules

WS-G5484=	GBIC Module, fiber media SX
WS-G5486=	GBIC Module, fiber media LX/LH

### Catalyst 2900 Series Software

WS-C2900-EMS-LIC	Catalyst 2900 RMON License
WS-C2926-EMS-LIC	Catalyst 2926 RMON License
WS-C2948G-EMS-LIC	Catalyst 2948G RMON Agent License

### Catalyst 2900 Series Accessories

WS-X2948G-RACK=	Catalyst 2948G Rack Mount Kit (spare)
WS-C2948G-3PACK	3 Catalyst 2948G Switches
WS-C2948-AGPACK	Aggregation Pack w/ Cat 4912G + (2X) Cat 2948G Switches

### Catalyst 2900 Series Basic Maintenance

CON-SNT-PKG8	Catalyst 2948 SMARTnet Maintenance
CON-SNT-PKG10	Catalyst 2926F/2926T SMARTnet Maintenance
CON-SNT-PKG11	Catalyst 2926GL/2926GS SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Catalyst 2900 Website: <http://www.cisco.com/go/2900>

## Cisco Catalyst 2900 Series XL

Cisco's Catalyst 2900 Series XL is a full line of stand-alone, 10/100 autosensing Fast Ethernet switches that combine outstanding



performance, ease of use, and integrated Cisco IOS software.

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### When to Sell

#### Sell This Product

##### Catalyst 2912XL

#### When a Customer Needs These Features

- Switch for connecting smaller Ethernet and Fast Ethernet workgroups or servers
- Low entry price

##### Catalyst 2912MF XL

- All fiber switch to aggregate Fast Ethernet workgroups over 100Base FX connections in small and mid-size campus environments
- High-speed uplinks to backbone or server via Fast Ethernet, Gigabit Ethernet, or ATM modules

##### Catalyst 2924 XL or Catalyst 2924C XL

- Dedicated 10-Mbps or 100-Mbps connections to individual PCs, servers, and other systems
- High-speed uplink flexibility over extended distances with 100BaseFX connections (Catalyst 2924C XL only)
- Low per-port cost

##### Catalyst 2924M XL

- Any combination of dedicated 10-Mbps or 100-Mbps connections to individual PCs, servers, and other systems or connectivity between existing Ethernet and Fast Ethernet workgroups
- The option to easily increase the switch's port density and provide inexpensive high-speed uplinks through bandwidth aggregation (Fast EtherChannel and Gigabit EtherChannel technologies)
- Gigabit Ethernet and ATM interface modules for high-speed links
- Hot swap insertion and removal of modules
- Maximum flexibility

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### Key Features

- Switch fabric of 3.2 Gbps, a forwarding rate of more than 3.0 million packets per second, and a maximum forwarding bandwidth of 1.6 Gbps, delivering wire-speed performance across all 10/100 ports
- Support for IEEE 801.1P protocol for prioritization of mission-critical and time-sensitive applications such as voice and telephony traffic
- Cisco Switch Clustering technology to create a managed network with a single IP address, containing up to 16 Catalyst 3500 XL, 2900 XL, and 1900 switches
- Up to 64 port-based VLANs (Standard edition) or ISL/802.1Q trunks (Enterprise edition)
- Network port allows operation in networks with unlimited MAC addresses
- Autoconfiguration of multiple switches on a network from one boot server
- Up to 4 Gbps bandwidth between routers, switches, and servers with Fast EtherChannel and Gigabit EtherChannel technologies

## Specifications

Feature	Catalyst 2912 XL	Catalyst 2912MF XL	Catalyst 2924 XL	Catalyst 2924C XL	Catalyst 2924 MXL
<b>Fixed Ports</b>	12-port 10/100 autosensing	12-port 100BaseFX	24-port 10/100 autosensing	24-port (22 10/100 ports autosensing and 2 ports 100BaseFX)	24-port 10/100 autosensing
<b>Modular Slots</b>	None	2	None	None	2
<b>Available Modules</b>	None	4-port switched 10BaseT/100BaseTX autosensing 2-port switched 100BaseFX 4-port 100BaseFX 1-port, GBIC-based Gigabit 1-port ATM OC-3 (UTP, multimode, medium and long reach)	None	None	Same as Catalyst 2912MF XL
<b>Backplane</b>	3.2 Gbps	3.2 Gbps	3.2 Gbps	3.2 Gbps	3.2 Gbps
<b>Stackable</b>	No	No	No	No	No
<b>Full Duplex Capabilities</b>	All ports	All 10BaseTX, 100BaseTX, 100BaseFX, 1000BaseX, and ATM ports	All ports	All port	Same as Catalyst 2912MF XL
<b>VLAN Maximum</b>	64-port-based VLANs or ISL/802.1Q trunks	Same as Catalyst 29 12XL	Same as Catalyst 2912 XL	Same as Catalyst 29 12XL	Same as Catalyst 2912 XL
<b>FEC</b>	Yes	Yes	Yes	Yes	Yes
<b>ISL</b>	Yes	Yes	Yes	Yes	Yes
<b>Management Capabilities</b>	SNMPTelnet, RMON, CWSI, (CLI)-based out-of-band, embedded Cisco Visual Switch Manager Web-based interface	Same as Catalyst 29 12XL	Same as Catalyst 2912 XL	Same as Catalyst 29 12XL	Same as Catalyst 2912 XL
<b>Processors</b>	Cisco designed ASICs, Power PC 403C	Cisco designed ASICs, Power PC 403C	Cisco designed ASICs, Power PC 403C	Cisco designed ASICs, Power PC 403C	Cisco designed ASICs, Power PC 403C
<b>Flash Memory</b>	4 MB	4 MB	4 MB	4 MB	4 MB
<b>CPU DRAM</b>	8 MB	8 MB	8 MB	8 MB	8 MB
<b>Embedded RMON</b>	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics
<b>Dimensions (HxWxD)</b>	1.73 x 17.5 x 4.8 in.	3.46 x 17.5 x 12 in.	1.73 x 17.5 x 4.8 in.	1.73 x 17.5 x 4.8 in.	3.46 x 17.5 x 12 in.
<b>Service Category</b>	4	7	4	4	4

## Competitive Products

- 3Com: SuperStack II Switch 3300, SuperStack II 630
- Nortel: BayStack 350 and 450 switches

## Distribution Part Numbers and Ordering Information

### Catalyst 2900 Series XL Switches<sup>1</sup>

WS-C2912MF-XL	12-port 100BASEFX, 2 module slots
WS-C2912-XL-A	12-port 10/100 (autosensing), (Standard Edition)
WS-C2912-XL-EN	12-port 10/100 (autosensing), (Enterprise Edition)
WS-C2924C-XL-A	22-port 10/100 (autosensing), 2-port 100BASEFX (Standard Edition)
WS-C2924C-XL-EN	22-port 10/100 (autosensing), 2-port 100BASEFX (Enterprise Edition)
WS-C2924M-XL-A	24-port 10/100 (autosensing), 2 module slots (Standard Edition)
WS-C2924M-XL-EN	24-port 10/100 (autosensing), 2 module slots (Enterprise Edition)
WS-C2924-XL-A	24-port 10/100 (autosensing), (Standard Edition)
WS-C2924-XL-EN	24-port 10/100 (autosensing), (Enterprise Edition)

### Catalyst 2900 Series XL Switch Bundles

WS-C2900-XL-EN-56	StackPack56: one 2924M XL-EN, two 2924XL-ENs, accessory kit
WS-C2900-XL-EN-104	StackPack104: one 2924M XL-EN and four 2924XL-ENs, accessory kit
WS-C2924M-XL-EN-5P	Five Catalyst 2924M XL Switches (Enterprise Edition)
WS-C2924-XL-EN-5P	Five Catalyst 2924XL Switches (Enterprise Edition)
WS-C2924C-XL-EN-5P	Five Catalyst 2924CXL Switches (Enterprise Edition)

### Catalyst 2900 Series XL Modules

WS-X2914-XL	4-port 10/100BaseTX switch module for Catalyst2616M XL
WS-X2914-XL-V	4-port 10/100 ISL/802.1Q Module
WS-X2924-XL-V	4-port 100BASEFX ISL/802.1Q Module
WS-X2922-XL-V	2-port 100BASEFX ISL/802.1Q Module
WS-X2931-XL	1-port, GBIC-based, 1000BASEFX Switch Uplink Module
WS-X2951-XL	1-port ATM-OC-3 UTP module
WS-X2961-XL	1-port ATM-OC-3 multimode fiber module
WS-X2971-XL	1-port ATM-OC-3 single mode fiber, medium reach module
WS-X2972-XL	1-port ATM-OC-3 single mode fiber, long reach module
WS-X3500-XL	GigaStack GBIC
WS-G5484=	SX GBIC; 1000BaseSX short wavelength, multimode fiber
WS-G5486=	LX GBIC; 1000BaseLX/LH, long wavelength/long haul, single or multimode fiber

### Catalyst 2900 Series XL Software

WS-C2900-SA6-EN	Upgrade for 2900XL Enterprise Edition Software
WS-C2900-SA6-10EN	Upgrade for 2900 XL Enterprise Edition Software (10 Pack)
WS-C2900-SA6-CM	Catalyst 2900 XL Command Software Upgrade

### Catalyst 2900 Series XL Accessories

WS-C2900-XL-EXPKT	Four Fast EtherChannel cables, Application Note
CAB-GS-1M	1 meter cable for GigaStack GBIC
CAB-GS-50CM	50 centimeter cable for GigaStack GBIC

### Catalyst 2900 Series XL Basic Maintenance

CON-SNT-PKG4	Catalyst 2900 Series XL SMARTnet Maintenance (except for 2912MF XL)
CON-SNT-PKG7	Catalyst 2912MF XL SMARTnet Maintenance

- For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Catalyst 2900 Series XL Web site: <http://www.cisco.com/go/2900xl>

## Cisco Catalyst 3500 Series XL

The Cisco Systems Catalyst 3500 series XL is a scalable line of stackable 10/100 and Gigabit Ethernet switches that delivers premium performance, manageability, and flexibility, with unparalleled investment protection. This line of low-cost, high-performance switching solutions provides next-generation stackable switching through an independent high-speed stacking bus that preserves valuable desktop ports. Cisco's breakthrough Switch Clustering technology expands the stacking domain beyond a single wiring closet, enabling up to 16 interconnected Catalyst 3500 XL, 2900 XL and Catalyst 1900 switches—regardless of geographic location—to form a flexible, single IP managed network.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Catalyst 3512 XL

- A high-performance, stackable, nonblocking switch for aggregating a small group of Catalyst 2900 XL or Catalyst 1900 switches in a clustered configuration
- Low entry price

##### Catalyst 3524 XL

- A stackable, wire-speed 10/100 and Gigabit Ethernet switch for delivering dedicated 10 or 100 Mbps to individual users and servers
- Built-in GBIC-based Gigabit Ethernet ports provide flexible and scalable uplinks or GigaStack GBIC stacking

##### Catalyst 3548 XL

- The highest density, stackable 10/100 and Gigabit Ethernet switch delivering 10 or 100 Mbps to users and servers, and dual Gigabit ports
- Low per-port cost

##### Catalyst 3508G XL

- A stackable Gigabit Ethernet switch with eight GBIC-based ports for aggregating a group of Gigabit Ethernet switches and servers through Cisco GigaStack GBICs or standard 1000BaseX GBICs
- Dedicated, high-speed Gigabit Ethernet performance

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### Key Features

- Switch fabric of 10 Gbps, forwarding rates of up to 7.4 million packets per second, and a maximum forwarding bandwidth of 5 Gbps, delivering wire-speed performance across all 10/100 ports
- Built-in Gigabit Ethernet ports accommodate a range of GBIC transceivers, including the Cisco GigaStack GBIC, and 1000BaseSX and 1000BaseLX/LH GBICs
- Low-cost, two-port Cisco GigaStack GBIC offers a range of highly configurable stacking and performance options by delivering 1-Gbps connectivity in a daisy-chained connection or up to 2-Gbps connectivity in a dedicated, switch-to-switch connection
- Support for IEEE 802.1p technology for prioritization of mission-critical and time-sensitive application such as voice and telephony traffic

## Specifications

Feature	Catalyst 3512 XL	Catalyst 3524 XL	Catalyst 3548 XL	Catalyst 3508G XL
<b>Fixed Ports</b>	12-port 10/100 autosensing 2-port 1000BaseX (GBIC)	24-port 10/100 autosensing 2-port 1000BaseX (GBIC)	48-port 10/100 autosensing 2-port 1000BaseX (GBIC)	8-port 1000BaseX (GBIC)
<b>Modular Slots</b>	None	None	None	None
<b>Backplane</b>	10 Gbps	10 Gbps	10 Gbps	10 Gbps
<b>Stackable</b>	Yes	Yes	Yes	Yes
<b>Full-Duplex Capabilities</b>	All ports	All ports	All ports	All ports
<b>VLAN Maximum</b>	250-port-based VLANs or ISL/802.1Q trunks	Same as Catalyst 3512 XL	Same as Catalyst 3512 XL	Same as Catalyst 3512 XL
<b>FEC</b>	Yes	Yes	Yes	Yes
<b>ISL</b>	Yes	Yes	Yes	Yes
<b>Management Capabilities</b>	SNMP/Telnet, RMON, CWSI, (CLI)-based out-of-band, embedded Cisco Visual Switch Manager, Web-based interface	Same as Catalyst 3512 XL	Same as Catalyst 3512 XL	Same as Catalyst 3512 XL
<b>Processors</b>	Cisco designed ASICs	Cisco designed ASICs	Cisco designed ASICs	Cisco designed ASICs
<b>Flash Memory</b>	4 MB	4 MB	4 MB	4 MB
<b>CPU DRAM</b>	8 MB	8 MB	8 MB	8 MB
<b>Embedded RMON</b>	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics
<b>Dimensions (HxWxD)</b>	1.75x17.5x11.8 in	1.75x17.5x11.8 in	1.75x17.5x16 in	1.75x17.5x11.8 in
<b>Service Category</b>	4	5		9

## Competitive Products

- 3Com: SuperStack II Switch 3300, 3900, and 9300
- Hewlett Packard: ProCurve 2424, 4000, and 8000
- Nortel: BayStack 450 switches

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## Distribution Part Numbers and Ordering Information

### Catalyst 3500 Series XL Switches<sup>1</sup>

WS-C3512-XL-A	12-port 10/100 (autosensing), 2 1000X GBIC Slots (Standard Edition)
WS-C3512-XL-EN	12-port 10/100 (autosensing), 2 1000X GBIC Slots (Enterprise Edition)
WS-C3524-XL-A	24-port 10/100 (autosensing), 2 1000X GBIC Slots (Standard Edition)
WS-C3524-XL-EN	24-port 10/100 (autosensing), 2 1000X GBIC Slots (Enterprise Edition)
WS-C3548-XL-A	48-port 10/100 (autosensing), 2 1000X GBIC Slots (Standard Edition)
WS-C3548-XL-EN	48-port 10/100 (autosensing), 2 1000X GBIC Slots (Enterprise Edition)
WS-C3508G-XL-A	8 1000X GBIC Slots (Standard Edition)
WS-C3508G-XL-EN	8 1000X GBIC Slots (Enterprise Edition)

### Catalyst 3500 Series XL Accessories

WS-X3500-XL	GigaStack GBIC
WS-G5484=	1000BaseSX GBIC
WS-G5486=	1000Base LX/LH GBIC
CAB-GS-1M	1 meter cable for GigaStack GBIC

### Catalyst 3500 Series XL Software

WS-C3500-SA6-EN	Enterprise Edition Software Upgrade, Release SA6
WS-C3500-SA6-10EN	Enterprise Edition Software Upgrade, Release SA6; 10 Licenses

### Catalyst 3500 Series XL Basic Maintenance

CON-SNT-PKG4	Catalyst 3512 XL SMARTnet Maintenance
CON-SNT-PKG5	Catalyst 3524 XL SMARTnet Maintenance
CON-SNT-PKG9	Catalyst 3508G XL SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Catalyst 3500 series XL Website: <http://www.cisco.com/go/3500xl>

## Cisco Catalyst 3900 Series

Cisco's Catalyst 3900 series are second-generation Token Ring switches that combine media-rate performance with a variety of high-speed uplinks, extensive network management, and support for multiple virtual LANs at a price per port that makes the series an ideal choice for backbone, workgroup, and desktop use.



The Catalyst 3900 is a stackable switch that offers 20 fixed ports, a stack port, and a unique FlexSlot that supports one double-wide card or up to two feature cards that can provide additional Token Ring ports or high-speed uplinks. The Catalyst 3920 offers 24 fixed Token Ring ports and can be stacked with other Catalyst 3920 units or with the Catalyst 3900.

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### When to Sell

#### Sell This Product

##### Catalyst 3900

#### When a Customer Needs These Features

- To relieve congestion in existing bridges, server rings, and backbone rings with micro-segmentation and direct server attachment
- To replace existing shared-media hubs to improve performance
- To update the backbone infrastructure to ATM or ISL and support multiple VLANs

##### Catalyst 3920

- To provide switching to the desktop at a price competitive to shared hubs but with the performance and manageability characteristics of the second generation Catalyst 3900 series
- To add additional low-cost ports to an existing Catalyst 3900 stack
- As a remote branch Token Ring solution in combination with Cisco Token Ring attached router

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### Key Features

- Stackable up to eight switches (up to 224 ports)
- Expandable configuration (Catalyst 3900)
- Source-route switching (SRS), source-route bridging (SRB), source-route transparent bridging (SRT) switching/bridging modes
- Flexible port operation
- Two priority queues for traffic
- VLAN support
- Highest performance in the industry (TollyGroup Industry Study)

## Specifications

Feature	Catalyst 3900	Catalyst 3920
<b>Fixed Ports</b>	20-port Token Ring	24-port Token Ring
<b>Modular Slots</b>	2	None
<b>Available Modules</b>	4-port Token Ring (UTP/STP/RJ45) 4-port Token Ring (MMM, ST) 1-port ATM (MMM, SC) 2-port 100BaseTX with ISL (UTP, RJ45) 2-port 100BaseFX with ISL (MMF, SC)	None
<b>Backplane</b>	520 Mbps	520 Mbps
<b>Stackable</b>	2 switches can be stacked back-to-back by direct cabling; up to 8 switches (any mix of 3900s or 3920s) can be stacked using the Catalyst 3020 Matrix Switch	Same as Catalyst 3900
<b>Full-Duplex Capabilities</b>	All ports	All ports
<b>VLAN Maximum</b>	63	63
<b>ISL</b>	2-port fiber or copper	None
<b>Management Capabilities</b>	SNMP and out-of-band console, Telnet, CiscoView, TrafficDirector™ software	SNMP and out-of-band console, Telnet, CiscoView, TrafficDirector software, CWSI
<b>Embedded RMON</b>	With optional RMON feature	With optional RMON feature
<b>Dimensions (HxWxD)</b>	3.4 x 17.4 x 15.3 in.	1.7 x 17.4 x 11.1 in.
<b>Service Category</b>	9	6

## Competitive Products

- Bay Networks: Centillion 100/50T and System 5000/5005
- IBM: 8272/8270
- Madge: SmartSwitch Plus
- Olicom: OC-8600/8601

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## Distribution Part Numbers and Ordering Information

### Catalyst 3900 Switch Family<sup>1</sup>

WS-C3900	Catalyst 3900 20-port Token Ring Switch
WS-C3920	Catalyst 3920 24-port Token Ring Switch

### Catalyst 3900 Series Modules

WS-C3900-2ISL=	2-port 100BaseTX Module (ISL, UTPRJ-45)
WS-C3900-2ISLF=	2-port 100BaseFX Module (ISL, multimode fiber, SC)
WS-C3900-4R=	4-port Token Ring Module (UTPRJ-45)
WS-C3900-4RF=	4-port Token Ring Module (multimode fiber, ST)
WS-C3900-ATMSC=	1-port ATM Module (multimode fiber, SC, 155 Mbps)
WS-C3900-STACK=	Catalyst 3900 Stack Port Module

### Catalyst Matrix

WS-C3020	Catalyst Matrix
WS-X3021=	Catalyst Matrix Redundant Component

### Catalyst 3900 Series Software

WS-C3900-EMS-LIC	Catalyst 3900 RMON Agent License
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### Catalyst 3900 Series Basic Maintenance

CON-SNT-PKG9	Catalyst 3900 SMARTnet Maintenance
CON-SNT-PKG6	Catalyst 3920 SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Catalyst 3900 series Web site: <http://www.cisco.com/go/3900>

## Cisco Catalyst 4000 Series

The Catalyst 4000 Series provides advanced enterprise wiring closet switching. The Catalyst 4000 Series provides intelligent Layer 2 services leveraging a 24 Gbps bandwidth architecture for 10/100/1000-Mbps Ethernet switching. The modular, three-slot Catalyst 4003 leverages the same feature set with identical software code base along with the same enterprise functionality as the Catalyst 5500/5000 Series in the wiring closet, delivering a consistent end-to-end solution. The Catalyst 4912G offers 12-ports dedicated Gigabit Ethernet switching.




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### When to Sell

#### Sell This Product

##### Catalyst 4003

#### When a Customer Needs These Features

- Latest technology advances, with modular protection at stackable price points
- Advanced wirespeed, non-blocking 10/100/1000 Ethernet performance with intelligent IOS services
- Affordable switched Fast Ethernet to larger workgroups, with Gigabit Ethernet Uplink protection
- High-speed connections to desktops and servers
- Up to 96 Fast Ethernet ports or up to 36 Gigabit Ethernet ports
- Modular flexibility and investment protection

##### Catalyst 4912G

- Advanced wirespeed, non-blocking Gigabit Ethernet performance with intelligent IOS services
- High-speed connections to workstations or servers
- Flexible Gigabit Interface Converter (GBIC) interfaces on all ports

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### Key Features

- Catalyst 4003 only:
  - 3-slot modular chassis with hot-swappable power supplies (dual option)
  - Modular Supervisor Engine for long-term technology protection
  - Variety of alternate Fast Ethernet and Gigabit Ethernet switch linecards (hot swappable)
  - Supports up to 96 10/100 Mbps FE ports, or up to 36 1,000 Mbps GE ports
- Catalyst 4003 and 4912G:
  - Powerful 24 Gbps switch fabric capacity
  - Wirespeed 18 Million pps throughput, 16000 MAC addresses
  - Consistent Catalyst 5500 Series enterprise software Code Image
  - Intelligent Multilayer IOS services (Security, Multicast, QOS)
  - QOS (802.3x support, dual queues), VLANs (1.024)
  - Security (TACACS+, port lockdown)

## Specifications

Feature	Catalyst 4003	Catalyst 4912G
<b>Fixed Ports</b>	None	12
<b>Modular Slots</b>	3	–
<b>Available Modules</b>	6	–
<b>Backplane</b>	24 Gbps	24 Gbps
<b>Stackable</b>	No	Yes
<b>VLAN Maximum</b>	1,024	1,024
<b>802.1Q</b>	Yes	Yes
<b>ISL</b>	No (future)	No (future)
<b>Management Capabilities</b>	Inboard console via terminal or modem, outboard via Telnet, SNMP, CSCOView, CWSI, CiscoWorks 2000	Same as Catalyst 4003
<b>Embedded RMON</b>	Statistics, History, Alarm, Events	Same as Catalyst 4003
<b>Dimensions (HxWxD)</b>	10.5 x 15.25 x 12 in.	2.75 x 17.5 x 15 in.
<b>Service Category</b>	11	12

## Competitive Products

- 3Com: SS3300
- Cabletron: SmartSwitch 6000 and 2200
- Extreme Networks: Summit 48
- Nortel Networks: BayStack 450T,(350 and 350T)

## Distribution Part Numbers and Ordering Information

### Catalyst 4000 Switch Family<sup>1</sup>

WS-C4003-S1-82	Catalyst 4000 Chassis, Sup Eng I, 80-port 10/100 (autosensing) FE, 2-port GE, AC
WS-C4003-S1	Catalyst 4000 Chassis, Sup Eng I, AC Pwr Supply, Fan Tray
WS-C4912G	Catalyst 4912G fixed-configuration switch, 12-ports dedicated Gigabit Ethernet (GBIC)
WS-C4003=	Catalyst 4000 Chassis (3-Slot), Single AC Power Supply (Spare)

### Catalyst 4000 Family Modules

WS-X4148-RJ=	48-port 10/100 (autosensing)
WS-X4232-GB-RJ=	32-port 10/100 and 2-port Gigabit Ethernet (GBIC)
WS-X4232-RJ-XX=	32-port 10/100 with modular uplink support
WS-X4306-GB=	6-port Gigabit Ethernet module (GBIC)
WS-X4418-GB=	18-port Gigabit Ethernet module (GBIC)
WS-U4504-FX-MT=	4-port 100FX daughter card

### Catalyst 4000 Family Software

WS-C4003-EMS-LIC	Catalyst 4003 RMON Agent License
WS-C4912G-EMS-LIC	Catalyst 4912G RMON Agent License

### Catalyst 4000 Family Accessories

WS-X4012=	Catalyst 4000, Supervisor 1 Console (DB-25) & Mgt (RJ-45) (spare)
WS-X4099=	Catalyst 4000, Rack Mount Kit (spare)
WS-X4008=	Catalyst 4000, AC Power Supply (spare)
WS-X4004=	Catalyst 4000, FanTray (spare)

### Catalyst 4000 Series Basic Maintenance

CON-SNT-PKG11	Cisco 4003 SmartNet maintenance
CON-SNT-PKG12	Cisco 4912G SmartNet maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Catalyst 4000 series Website: <http://www.cisco.com/go/cat4000>

## Cisco Catalyst 5000 Family

Cisco Systems' Catalyst 5000 Family provides the industry's most powerful, feature-rich solution for wiring closet and mid-range backbone applications. The 5000 Family features Ethernet, Fast Ethernet, Gigabit Ethernet, FDDI, Token Ring, and ATM platforms that offer users high-speed trunking technologies and media-rate performance with a broad variety of interface modules.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Catalyst 5000

- Desktop/server connectivity
- Five slots—up to 192 10BaseT ports or 144 10/100 ports

##### Catalyst 5002

- Workgroup connectivity
- Two slots—up to 48 10BaseT ports or 36 10/100 ports

##### Catalyst 5500

- Catalyst 8510/LightStream 1010 features and line-card support
- Gigabit Ethernet
- Full system redundancy
- High density (13 slots—up to 528 10BaseT ports or 396 10/100 ports)

##### Catalyst 5505

- Gigabit Ethernet (high-performance desktop/server connectivity)
- Full system redundancy
- Five slots—up to 192 10BaseT ports or 144 10/100 ports

##### Catalyst 5509

- High-performance desktop/server switching
- Full system redundancy
- High-density Gigabit Ethernet up to 38 ports
- Nine slots—up to 384 10BaseT ports or 288 10/100 ports

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### Key Features

- High-speed connectivity using standard Gigabit Ethernet, Fast Ethernet, Token Ring, FDDI, or ATM
- Multilayer switching
- Dual redundant switching engines, power supplies, and a passive backplane design ensure full system redundancy for mission-critical environments
- Fast EtherChannel or Gigabit EtherChannel support
- Support for all advanced features of Cisco IOS software
- Any-to-any switching (that is, any media to any media—Token Ring to ATM, Gigabit to ATM, FDDI to ATM, and so forth)
- Cisco's VTP supports dynamic VLANs and dynamic trunk configuration across all switches

## Specifications

Feature	Catalyst 5000	Catalyst 5002	Catalyst 5500	Catalyst 5505	Catalyst 5509
<b>Modular Slots</b>	5	2	13	5	9
<b>Available Modules</b>	Supervisor <sup>1</sup> Engine II, II G, III <sup>G</sup> , or III plus any combination of the following modules: 48-port Group Switched 10bT Eth 48-port Switched 10bT Ethernet 24-port Switched 10bT Ethernet 12-port Switched 10bFL Ethernet 24-port Switched 10bFL Ethernet 24-port Group Switched 100bTX Ethernet 24-port Switched 10/100bTX Backbone Fast Ethernet 24-port Switched 10/100bTX Desktop Fast Ethernet 24-port Switched 10/100bTX Fast Ethernet with QoS 36-port Switched 10/100bTX Fast Ethernet with QoS 12-port Switched 100bFX Fast Ethernet 24-port Switched 100bFX Fast Ethernet with QoS 9-port Switched Gigabit Ethernet (GBIC) 3-port Switched Gigabit Ethernet (GBIC) 16-port Switched Token Ring Copper 16-port Switched Token Ring Fiber 1-port CDDI/FDDI 1-port dual PHY ATM LAN Emulation/MPOA OC-3 or OC-12	Same as Catalyst 5000	Same as Catalyst 5000 plus: LightStream 1010 Catalyst 8510	Same as Catalyst 5000	Same as Catalyst 5000
<b>Backplane</b>	1.2 Gbps	1.2 Gbps	3.6 Gbps ATM switching: 5-Gbps backplane	3.6 Gbps	3.6 Gbps
<b>Stackable</b>	No	No	No	No	No
<b>Full-Duplex Capabilities</b>	All Ethernet, Fast Ethernet, Token Ring, and ATM port	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000
<b>VLAN Maximum</b>	Spanning tree: Yes per VLAN 1000 VLANs	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000
<b>FEC</b>	24 100BaseTX/ FEC switching 12 100BaseFX/ FEC switching	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000
<b>Management Capabilities</b>	Inboard console via terminal or modem, outboard via Telnet, SNMP, CiscoView, CWSI Statistics, history, alarms, events	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000
<b>Dimensions (HxWxD)</b>	10.4 x 17.21 x 18.14 in.	5.75 x 17 x 18 in.	15.2 x 17.3 x 18 in.	10.4 x 17.2 x 18 in.	20 x 17.25 x 18 in.
<b>Service Category</b>	13	9	16	13	15

1. Supervisor module(s) require a slot in the chassis.

## Competitive Products

- 3Com: Corebuilder 5000 and 9000
- Bay Networks: Accelar 1000 and 8000
- Cabletron: SmartSwitch 6000

## Distribution Part Numbers and Ordering Information

### Catalyst 5000 Family Switch Families<sup>1</sup>

WS-C5002=	2-slot Chassis, Dual AC Power Supplies
WS-C5007=	5-slot Chassis, AC Power Supply
WS-C5507=	13-slot Chassis, AC Power Supply
WS-C5505-CHAC=	Catalyst 5505 Chassis, AC Power Supply
WS-C5509-CHAC=	Catalyst 5509 Spare Chassis, AC Power Supply
WS-C5509-CHDC=	Catalyst 5509 Spare Chassis, DC Power Supply

### Catalyst 5000 Family Wiring Closet Bundles

WS-C5000-WCFX	WS-C5000, WS-C5008B, WS-X5506 (Limit 10)
WS-C5000-WCTX	WS-C5000, WS-C5008B, WS-X5509 (Limit 10)
WS-C5500-WCFX	WS-C5500, WS-C5508, WS-X5506 (Limit 10)
WS-C5500-WCTX	WS-C5500, WS-C5508, WS-X5509 (Limit 10)
WS-C5505-WCFX	WS-C5505, WS-C5008B, WS-X5506 (Limit 10)
WS-C5505-WCTX	WS-C5505, WS-C5008B, WS-X5509 (Limit 10)
WS-C5509-WCFX	Catalyst 5509 Chassis, Sup II (fiber), AC Power Supply
WS-C5509-WCTX	Catalyst 5509 Chassis, Sup II, AC Power (UTP)
WS-C5000-S2G	WS-C5000 Chassis, Sup Eng II G, AC Power Supply
WS-C5505-S2G	WS-C5505 Chassis, Sup Eng II G, AC Power Supply
WS-C5509-S2G	WS-C5509 Chassis, Sup Eng II G, AC Power Supply
WS-C5500-S2G	WS-C5500 Chassis, Sup Eng II G, AC Power Supply
WS-C5505-S3G	WS-C5505 Chassis, Sup Eng III G, AC Power Supply
WS-C5509-S3G	WS-C5509 Chassis, Sup Eng III G, AC Power Supply
WS-C5500-S3G	WS-C5500 Chassis, Sup Eng III G, AC Power Supply
WS-C5500-S3	WS-C5500 Chassis, Sup Eng III, AC Power Supply
WS-C5500-S3-E3	WS-C5500 Chassis, Sup Eng III, WS-X5530-E3 (NFFC II), AC Power Supply
WS-C5505-S3	WS-C5505 Chassis, Sup Eng III, AC Power Supply
WS-C5505-S3-E3	WS-C5505 Chassis, Sup Eng III, WS-X5530-E3 (NFFC II), AC Power Supply
WS-C5509-S3	WS-C5509 Chassis, Sup Eng III, AC Power Supply
WS-C5509-S3-E3	WS-C5509 Chassis, Sup Eng III, WS-X5530-E3 (NFFC II), AC Power Supply

### Catalyst 5000 Supervisor Engine II Modules

WS-X5505=	Catalyst 5000 Family Supervisor Engine II - 2-port, 100bFX (single mode fiber)
WS-X5506=	Catalyst 5000 Family Supervisor Engine II - 2-port, 100bFX (multimode fiber)
WS-X5509=	Catalyst 5000 Family Supervisor Engine II - 2-port, (100bTX & MII)
WS-X5540=	Catalyst 5000 Family Supervisor Engine II G, with modular uplinks
WS-X5509-BOOT=	Catalyst 5000 Family Sup Eng II Boot ROM Kit
WS-X5530-BOOT=	Catalyst 5000 Family Sup Eng III Boot ROM Kit

### Catalyst 5000 Supervisor Engine III Modules

WS-F5521=	Supervisor Engine III NetFlow Feature Card
WS-F5531=	Supervisor Engine III NetFlow Feature Card II
WS-U5531-FETX=	2-port 100bTX Module (for Sup Eng III)
WS-U5533-FEFX-MMF=	2-port 100bFX (multimode fiber) Module (for Sup Eng III)
WS-U5534-GESX=	2-port 1000BaseSX (SC) Module (for Sup Eng III)
WS-U5536-GELX=	2-port 1000Base-LX (SC) Module (for Sup Eng III)
WS-U5535-FEFX-SMF=	2-port 100bFX (single mode fiber) Module (for Sup Eng III)
WS-U5537-FETX=	4-port 10/100bTX Module (for Sup Eng III)
WS-X5530-E1=	Catalyst 5000 Family Sup Eng III w/out Uplink Module
WS-X5530-E2=	Catalyst 5000 Family Sup Eng III w/ NFFC - modular uplink slot
WS-X5530-E3	Catalyst 5000 Family Sup Eng III w/ NFFC II - modular uplink slot
WS-X5550=	Catalyst 5000 Family Sup Eng III G, with GBIC uplinks

### Catalyst 5000 Family Modules

WS-C5514-CL=	Catalyst 5505/5509 Backplane Clock Module
WS-X5012=	48-port 10bT Switching Module (RJ-21) (Telco)
WS-X5012A=	48-port 10bT Switching Module (RJ-21)
WS-X5013=	24-port 10bT Switching Module (RJ-45)
WS-X5014=	48-port 10bT Module (RJ-45, spare)
WS-X5020=	48-port 10bT Group Switching Module (RJ-21)
WS-X5030=	16-port Token Ring Switch Module (copper)
WS-X5031=	16-port Token Ring Switch Module (fiber)
WS-X5101=	1-port FDDI Switching Module (MMF, MIC)
WS-X5103=	1-port CDDI Switching Module (UTP, RJ45)
WS-X5104=	1-port FDDI Switching Module (SMF, ST)
WS-X5114=	12-port 100bFX (6-port MMF, 6-port SMF, SC)

WS-X5156=	2-port ATM LANE Module (Dual Phy, UTP)
WS-X5157=	2-port ATM LANE Module (Dual Phy, SC, SMF)
WS-X5158=	2-port ATM LANE Module (Dual Phy, SC, MMF)
WS-X5161=	1-port ATM OC-12 Module (Dual Phy, SC, MMF)
WS-X5162=	1-port ATM, OC-12 Module (Dual Phy, SMF)
WS-X5165=	Catalyst 5500 ATM Fabric Integration Module
WS-X5167=	1-port ATM OC-3 LANE/MPOA (Dual PHY, MMF, SC)
WS-X5168=	1-port ATM OC-3 LANE/MPOA (Dual PHY, SMF, SC)
WS-X5201=	12-port 100bFX Fast EtherChannel Module (SC, MMF)
WS-X5201R=	12-port 100bFX Backbone Switching Module (SC, MMF)
WS-X5203=	12-port 10/100 (autosensing) Fast EtherChannel Module (RJ-45)
WS-X5213A=	12-port 10/100 (autosensing) Module (RJ-45)
WS-X5223=	24-port 10/100 (autosensing) Group Switching Module (RJ-45)
WS-X5224=	24-port 10/100 (autosensing) Switching Module (RJ-45)
WS-X5225R=	24-port 10/100 (autosensing) Backbone Switching Module (RJ-45)
WS-X5234-RJ45	24-port 10/100 (autosensing) QoS Switching Module (RJ-45)
WS-X5236-FX-MT	24-port 10/100 (autosensing) QoS Switching Module(MT-RJ)
WS-X5239-RJ21	36-port 10/100 (autosensing) QoS Switching Module (RJ-21)
WS-X5380=	Catalyst 5000/5500 Network Analysis Module, RMON.RMON2/NetFlow
WS-X5403=	3-port Gigabit Ethernet Switching Module (GBIC)
WS-X5410=	9-port Gigabit Etherchannel Switching Module (GBIC)
WS-G5486=	1000Base-LX/LH (long wavelength/long-haul) GBIC
WS-G5487=	1000Base-ZX extended reach GBIC (single mode)
WS-G5484=	1000Base-SX short wavelength GBIC (multimode only)
WS-C5514-CL=	Catalyst 5505/5509 Backplane Clock Module (spare)

#### Catalyst 5000 Family Bundles Modules

WS-X5012-3PACK=	Three Pack of WS-X5012 (RJ-21, 3x48 ports)
WS-X5012A-3PACK=	Three Pack of WS-X5012 (RJ-21, 3x48 ports)
WS-X5014-3PACK=	Three Pack of WS-X5014 (RJ-45, 3x48 ports)
WS-X5223-3PACK=	Three Pack of WS-X5223 (RJ-45, 3x24 ports)
WS-X5224-3PACK=	Three Pack of WS-X5224= (RJ-45, 3x24 ports)
WS-X5234-RJ-3PACK=	24-port 10/100TX (FEC,WRED,802.1Q/ISL,RJ-45) 3PACK

#### Catalyst 5000 RSM/Route Switch Feature Cards

WS-X5302=	Catalyst 5000 Route Switch Module
WS-X5303-15=	Catalyst 5000 Versatile Interface Processor Model 2-15
WS-X5303-40=	Catalyst 5000 Versatile Interface Processor Model 2-40
WS-X5541=	Catalyst 5000 Route Switch Feature Card for Sup II G and Sup III G

#### Catalyst 5500 Supervisor III E1/E2/E3 PCMCIA Flash

MEM-S3-FLC8M=	Supervisor III E1/E2/E3 PCMCIA Flash Memory Card, 8 MB
MEM-S3-FLC16M=	Supervisor III E1/E2/E3 PCMCIA Flash Memory Card, 16 MB
MEM-S3-FLC20M=	Supervisor III E1/E2/E3 PCMCIA Flash Memory Card, 20 MB

#### Catalyst 5000 Family Software

SWC5K-BEFS-4X-UG	Catalyst 5000 Family Rel. 4.x Software License (Enhanced Feature Set, Upgrade)
SWC5K-BEFS-4X=	Catalyst 5000 Family Rel. 4.x Software License (Enhanced Feature Set)
FL-C5K-EFS-5X=	Catalyst 5000 Rel. 5.x Software License (Enhanced Feature Set, spare)
FL-C5K-EFS-5X-UG	Catalyst 5000 Rel. 5.x Software License (Enhanced Feature Set, Upgrade)
FL-C5K-IPX=	Catalyst 5000 IPX Feature Set (spare)
WS-C5K-EMS-LIC	Catalyst 5000 RMON Agent License
WS-C5002-EMS-LIC	Catalyst 5002 RMON Agent License
WS-C5500-EMS-LIC	Catalyst 5500 RMON Agent License
WS-C5505-EMS-LIC	Catalyst 5505 RMON Agent License
WS-C5509-EMS-LIC	Catalyst 5509 RMON Agent License

#### Catalyst 5000 Family Accessories

WS-C5099=	Catalyst 5000, Rack Mount Kit
WS-C5599=	Catalyst 5500, Rack Mount Kit
WS-C5509-RACK=	Catalyst 5509, Rack Mount Kit and Cable Organizer
WS-C5097=	Catalyst 5000 Family, Center Rack Mount Kit
WS-C5508=	Catalyst 5500, AC Power Supply
WS-C5008B=	Catalyst 5000/5505, AC Power Supply
WS-C5068B=	Catalyst 5000/5505, DC Power Supply
WS-C5518=	Catalyst 5509, AC Power Supply (Spare)
WS-C5598=	Catalyst 5509, DC Power Supply (Spare)
WS-C5509-FAN=	Catalyst 5509, FanTray (Spare)

**Catalyst 5000 Family Basic Maintenance**

CON-SNT-PKG13	Catalyst 5000 and 5505 SMARTnet Maintenance
CON-SNT-PKG9	Catalyst 5002 SMARTnet Maintenance
CON-SNT-PKG16	Catalyst 5500 SMARTnet Maintenance
CON-SNT-PKG15	Catalyst 5509 SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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**For More Information**

See the Catalyst 5500/5000 series Web site: <http://www.cisco.com/go/5000>

## Cisco Catalyst 6000 Family

The Catalyst 6000 Family provides a high-performance, multilayer switching solution for campus networks. It is designed to address the increased requirements for gigabit density, data and voice integration, scalability, high availability, and multilayer switching in backbone/distribution and server-aggregation environments. Coupled with Cisco IOS, the Catalyst 6000 Family provides the required infrastructure to support high-capacity gigabit switching and the multilayer intelligence to efficiently manage network traffic.




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### When to Sell

#### Sell This Product

#### When a Customer Needs These Features

##### Catalyst 6006

- Backplane bandwidth of 32 Gbps
- Multilayer switching up to 15 Mpps
- Six slots—up to 240 user ports

##### Catalyst 6009

- Backplane bandwidth of 32 Gbps
- Multilayer switching up to 15 Mpps
- Nine slots—up to 384 user ports

##### Catalyst 6506

- Scalable switching bandwidth up to 256 Gbps
- Scalable multilayer switching up to 150 Mpps
- Six slots—up to 240 user ports

##### Catalyst 6509

- Scalable switching bandwidth up to 256 Gbps
- Scalable multilayer switching up to 150 Mpps
- Nine slots—up to 384 user ports

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### Key Features

- Scalable backbone densities for Fast Ethernet and Gigabit Ethernet, high-performance multilayer switching, and policy enforcement in the backbone
- Supports up to 384 10/100 Ethernet, 192 100FX Fast Ethernet, and 130 Gigabit Ethernet ports—the highest in the industry
- Multilayer switching scaling to 15 Mpps on Catalyst 6000 Series and 150 Mpps on Catalyst 6500 Series switches
- Exceptional scalability and price/performance
- Efficient intranet multimedia and multicast support through Protocol Independent Multicast (PIM), Internet Group Management Protocol (IGMP), Cisco Group Management Protocol (CGMP) and GARP Multicast Registration Protocol (GMRP)
- Extensive Quality of Service (QoS) features to support mission-critical applications

## Specifications

Feature	Catalyst 6006	Catalyst 6009	Catalyst 6506	Catalyst 6509
<b>Modular Slots</b>	6	9	6	9
<b>Available Modules</b>	8-port Gigabit Ethernet 16-port Gigabit Ethernet 24-port 100FX Ethernet 48-port 10/100TX Ethernet (RJ-45) 48-port 10/100 Ethernet (RJ-21 or TELCO) 1-port Multimode OC-12 ATM 1-port Single-Mode OC-12 ATM	Same as Catalyst 6006	Same as Catalyst 6006	Same as Catalyst 6006
<b>Backplane</b>	32 Gbps	32 Gbps	Scalable to 256 Gbps	Scalable to 256 Gbps
<b>Stackable</b>	No	No	No	No
<b>Multilayer Performance</b>	Scalable to 15 Mpps	Scalable to 15 Mpps	Scalable to 150 Mpps	Scalable to 150 Mpps
<b>VLAN Maximum</b>	1000	1000	1000	1000
<b>FEC/GEC</b>	Up to 8 noncontiguous ports; supports multimodule channeling	Same as Catalyst 6006	Same as Catalyst 6006	Same as Catalyst 6006
<b>Management Capabilities</b>	CiscoWorks 2000, RMON, Enhanced Switched Port Analyzer (ESPA), SNMP, Telnet, BOOTP, and Trivial File Transfer Protocol (TFTP)	Same as Catalyst 6006	Same as Catalyst 6006	Same as Catalyst 6006
<b>Dimensions (HxWxD)</b>	20.1 x 17.2 x 18.1 in.	25.2 x 17.2 x 18.1 in.	20.1 x 17.2 x 18.1 in.	25.2 x 17.2 x 18.1 in.
<b>Service Category</b>	16	17	16	17

## Competitive Products

- 3Com: CoreBuilder 9000
- Cabletron: SmartSwitch Router 8000
- Lucent: Cajun Switch 550
- NT/BAY: Accelar 12xx

## Distribution Part Numbers and Ordering Information

### Catalyst 6000 Family Chassis<sup>1</sup>

WS-C6509-S1	Catalyst 6509 Chassis, A/C Pwr Supply + WS-X6K-SUP1-2GE
WS-C6009-S1	Catalyst 6009 Chassis, A/C Pwr Supply + WS-X6K-SUP1-2GE
WS-C6006-S1	Catalyst 6006 Chassis, WS-X6K-SUP1-2GE + AC Pwr Supply
WS-C6506-S1	Catalyst 6506 Chassis, WS-X6K-SUP1-2GE + AC Pwr Supply
WS-C6006-1000AC=	Catalyst 6006 Chassis w/ 1000W AC Power Supply
WS-C6006-1300AC=	Catalyst 6006 Chassis w/ 1300W AC Power Supply
WS-C6009-1300AC=	Catalyst 6009 Chassis w/ 1300W AC Power Supply
WS-C6506-1000AC=	Catalyst 6506 Chassis w/ 1000W AC Power Supply
WS-C6506-1300AC=	Catalyst 6506 Chassis w/ 1300W AC Power Supply
WS-C6509-1300AC=	Catalyst 6509 Chassis w/ 1300W AC Power Supply

### Catalyst 6000 Family Supervisor Engines

WS-X6K-SUP1-2GE=	Catalyst 6000, Sup Eng 1, 2 GE (Req. GBICs)
WS-X6K-SUP1A-2GE=	Catalyst 6000 Supervisor Engine1A, Enhanced QoS, 2GE
WS-X6K-SUP1A-PFC=	Catalyst 6000 Supervisor Engine1-A, 2GE, plus PFC
WS-X6K-SUP1A-MSFC=	Catalyst 6000 Supervisor Engine1-A, 2GE, plus MSFC & PFC
SWC6K-SUP-5.2.1=	Catalyst 6000 Supervisor Software Kit, Release 5.2(1)
SWC6K-SUP-5.3.1=	Catalyst 6000 Supervisor Flash Image, Release 5.3(1a)

### Catalyst 6000 Family Modules

WS-X6408-GBIC=	Catalyst 6000, 8-port Gigabit Ethernet Module (Req. GBICs)
WS-X6416-GE-MT=	Catalyst 6000, 16-port Gigabit Ethernet Module, MT-RJ
WS-X6248-RJ-45=	Catalyst 6000, 48-port 10/100bTX (RJ-45) Module
WS-X6224-100FX-MT=	Catalyst 6000, 24-port 100bFX (multi-mode, MT-RJ)
WS-X6248-TEL	Catalyst 6000, 48-port Telco Module
WS-X6101-OC12-MMF=	Catalyst 6000 1-port Multimode OC-12 ATM Module, Spare
WS-X6101-OC12-SMF=	Catalyst 6000 1-port Single-Mode OC-12 ATM Module, Spare

### Catalyst 6000 Family Accessories

WS-CDC-1300W=	Catalyst 6000, 1300W DC Power Supply
WS-CAC-1300W=	Catalyst 6000, 1300W AC Power Supply
WS-CAC-1000W	Catalyst 6000, 1000W AC Power Supply
WS-C6X09-RACK=	Catalyst 6x00 Rack Mount Kit and Cable Organizer
WS-C6K-6SLOT-FAN=	Catalyst 6000, FanTray for 6-slot Systems
WS-C6X06-RACK=	Catalyst 6x06, Rack Mount Kit and Cable Organizer
WS-X6K-SLOT-CVR=	Catalyst 6000 Blank Line Card Slot Cover

### Catalyst 6000 Family Software

WS-C6X09-EMS-LIC	Catalyst 6x09, RMON Agent License
WS-C6X06-EMS-LIC	Catalyst 6x06, RMON Agent License
FRC6-MSM-IPX=	Catalyst 6000, IPX Feature Set License
SC6MSFCA-12.0.3XE=	Cisco IOS Catalyst 6000 Family MSFC - Enterprise
SC6MSFCB-12.0.3XE=	Cisco IOS Catalyst 6000 Family MSFC - Desktop
SC6MSFCC-12.0.3XE=	Cisco IOS Catalyst 6000 Family MSFC - IP
SC6MSFCD-12.0.3XE=	Cisco IOS Catalyst 6000 Family MSFC - IP/IPX
SC6-ATM-12.0.5XE=	12.0(5)XE image for WS-X6101-OC12-MMF and WS-X6101-OC12-SMF
FR-IRC6=	Catalyst 6000 Family InterDomain Routing Feature License

### Catalyst 6000 Family Memory Options

MEM-C6K-FLC16M=	Catalyst 6000, Supervisor PCMCIA 16MB Flash Memory Card
MEM-C6K-FLC24M=	Cat 6000 Sup PCMCIA Flash Memory Card, 24MB Spare
MEM-MSFC-128MB=	Catalyst 6000 MSFC Mem, 128MB DRAM Option

### Catalyst 6000 Family Basic Maintenance

CON-SNT-PKG16	Catalyst 6006 and 6506, SMARTnet Maintenance
CON-SNT-PKG17	Catalyst 6009 and 6509, SMARTnet Maintenance

- For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Catalyst 6000 Family Web site: <http://www.cisco.com/go/6000>

## Cisco Catalyst 8500 Multiservice Switch Routers<sup>1</sup>

The Catalyst 8500 family multiservice switch routers integrate multiservice ATM switching with wire-speed multiprotocol routing for gigabit Ethernet into a single platform that also supports advanced Cisco IOS services for QoS and security. The Catalyst 8500 family delivers campus and metropolitan network solutions with scalable performance, lower cost of ownership, and the features needed by intranet-based applications to deliver increased business productivity. The Catalyst 8500 series switch routers are designed to meet the high-performance requirements of the campus backbone and offer multiple interface options in a modular chassis. The Catalyst 8500 series consists of the modular Catalyst 8510 (10-Gbps, 5-slot) switch and the modular Catalyst 8540 (40-Gbps, 13-slot) switch. Both switches implement Cisco IOS software to provide a variety of network services, including reliability, security, management, and QoS with CiscoAssure policy networking.



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### Key Features

- Ideal for integrated multiservice ATM switching with wire-speed
- Ideal for aggregating multiprotocol traffic from multiple wiring closets or from workgroup switches such as the Catalyst 5000 or distribution/server aggregation switches such as the Catalyst 6000 Family
- Provides nonblocking routing for IP, IPX, and IP multicast while also offering wire-speed Layer 2 switching for nonroutable protocols such as NetBIOS and DECnet local-area transport (LAT)
- Aggregate throughput of 6-24 million packets per second (pps) for both Layer 2 and Layer 3 switching, non-blocking ATM switching

1. For ordering information on this product, contact your Cisco Account Team.

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## Specifications

Feature	Catalyst 8510	Catalyst 8540
<b>Fixed LAN Ports</b>	1-port Ethernet (for out-of-band management)	1-port Ethernet (for out-of-band management)
<b>Management Ports</b>	2-port serial (EIA/TIA-232)	2-port serial (EIA/TIA-232)
<b>Modular Slots</b>	5	13
<b>Stackable</b>	No	No
<b>Shared Memory</b>	10 Gbps	40 Gbps
<b>Flash Memory</b>	8 MB (default) 20 MB (maximum)	8 MB (default) 20 MB (maximum)
<b>DRAM</b>	64 MB	256 MB
<b>Power Supply</b>	Optional redundant power supplies	Optional redundant power supplies
<b>Dimensions (HxWxD)</b>	10.5 x 17.2 x 18.14 in.	25.25 x 17.3 x 18.25 in.

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## For More Information

See the 8500 series Web site: <http://www.cisco.com/go/8500>

## Cisco HP 10BaseT Hub-16M



Developed by Hewlett-Packard and integrated with Cisco IOS technologies, the HP 10Base-T Hub-16M combines cost-effective LAN connectivity, security, and integrated management with the benefits of Cisco IOS technologies. The 10 Mbps shared hub is the ideal complement to the Cisco Catalyst 1900 and 2820 series Ethernet switches for small- and medium-sized businesses and enterprise branch offices.

The HP 10Base-T Hub-16M has 16 10BaseT ports for workgroup connectivity, and one AUI port to connect coaxial or fiber Ethernet cable. The hub also features an MDI/MDI-X switch on port 16 for inter-hub connectivity without special crossover cables. Up to four HP 10Base-T Hub-16M units can be cascaded together to create a single collision domain of up to 58 10BaseT ports. The hub can be connected upstream to a Catalyst 1900 or 2820 series Ethernet switch in a high-performance network, or installed as a standalone solution in a small business environment.

This hub has comprehensive hub-level and port-level security features including intruder prevention, auto port disabling, network management alarm, eavesdrop prevention, and password protection to prevent unauthorized network access. The hub also provides intelligent error monitoring through automatic port/segment partitioning and reconnection for ports experiencing excessive collision problems.

This hub is fully integrated with Cisco 3600 series routers, Catalyst 1900 and 2820 series switches, Catalyst 2900 XL series 10/100 autosensing switches, and FastHub 200 and 300 series system of modular, stackable LAN and WAN products through Cisco IOS technologies for guaranteed product interoperability and unified management. The hub is also equipped with a connector for the Cisco 600-Watt AC Redundant Power System (RPS) to guarantee maximum uptime.

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### When to Sell

#### Sell This Product

**Cisco HP 1516**

#### When a Customer Needs These Features

- An economical solution for creating a LAN
- Cisco IOS technologies for seamless integration with other Cisco switches and routers
- Ability to create a manageable collision domain that supports up to 58 users and devices

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### Key Features

- MDI/MDI-X switch for inter-hub connectivity without special crossover cables
- Support for up to four units cascaded together
- SNMP, Telnet, and terminal out-of-band management console for comprehensive management and troubleshooting
- Comprehensive security features include intruder prevention, eavesdrop prevention, network management alarm, auto port disabling, and password protection

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## Specifications

Feature	Cisco HP 1516
<b>Fixed Ports (connections)</b>	16-port Ethernet (10BaseT) 1-port Ethernet (AUI)
<b>Modular Slots</b>	None
<b>Stackable</b>	No (Can be cascaded up to 58 users and devices)
<b>Management Capabilities</b>	Configuration Managed Per port LEDs: Link Integrity/Receive Activity and Port Enabled/Disabled
<b>Dimensions (HxWxD)</b>	1.7 x 16.8 x 9.4 in.
<b>Service Category</b>	1

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## Competitive Products

- 3Com: SuperStack II PS 12
- Bay: Bay 2813-05
- HP: AdvanceStack 16-U/SNMP Bundle

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## Distribution Part Numbers and Ordering Information

### Cisco HP 1516 Hub Chassis<sup>1</sup>

CISCO1516M	16-port 10bT - SNMP Managed Repeater
CON-SNT-PKG1	Cisco 1500 Series SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco HP 10BaseT Hub Web site: <http://www.cisco.com/go/hp16m>

## Cisco 1538 Series Micro Hubs 10/100



The Cisco 1538 Series Micro Hubs 10/100 provide flexible 10/100 autosensing Fast Ethernet desktop connectivity for creating high-performance LANs at an affordable price. The eight-port 10BaseT/100BaseTX autosensing hubs provide 100-Mbps peak aggregate throughput, up to 10 times the performance of traditional Ethernet hubs. Ideal for enterprise remote branch offices and small and growing businesses where management is a requirement, the Cisco 1538M and Cisco 1538 Micro Hubs deliver the most cost-effective and powerful management option in their class. The Cisco 1538 Series Micro Hubs 10/100 are part of the Cisco Networked Office stack family of products designed to provide integrated, secure networking solutions for small businesses and small branch offices.

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### When to Sell

#### Sell This Product

##### Cisco 1538

#### When a Customer Needs These Features

- Up to 100-Mbps peak aggregate throughput for bandwidth-intensive applications
- Flexibility to stack up to four Cisco 1538 series Micro Hubs for up to 32 ports using the integrated stacking ports
- Option to manage the Cisco 1538 with a Cisco 1538M

##### Cisco 1538M

- Up to 100-Mbps peak aggregate throughput for bandwidth-intensive applications
- Flexibility to stack up to four Cisco 1538 series Micro Hubs for up to 32 ports using the integrated stacking ports
- Cost-effective and powerful management with SNMP and RMON management protocols and a Web-based management interface

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### Key Features

- Eight 10BaseT/100BaseTX autosensing hub ports
- 10 Mbps and 100 Mbps peak aggregate throughput
- Internal bridge function for connecting both 10 Mbps and 100 Mbps devices
- Web-based management interface provides the most powerful and cost-effective management options in its class
- Automatic configuration and self-test on startup
- Extensive LEDs for visual management
- One user-selectable MDI/MDI-X port for connecting a compatible hub or switch without a cross-over cable
- Integrated stacking ports allow up to four Cisco 1538 Micro Hubs 10/100 to be stacked to form one single, manageable, logical repeater of 32 10/100 ports

## Specifications

Feature	Cisco 1538	Cisco 1538M
<b>Fixed Ports (connections)</b>	8-port 10/100 autosensing	8-port 10/100 autosensing
<b>Modular Slots</b>	None	None
<b>Stackable</b>	Yes, up to 4 units	Yes, up to 4 units
<b>Management Capabilities</b>	Yes, manageable by Cisco 1538M	Yes
<b>Dimensions (HxWxD)</b>	3.1 x 11.2 x 8.7 in.	3.1 x 11.2 x 8.7 in.
<b>Service Category</b>	1	1

## Competitive Products

- 3Com: Office Connect Dual Speed Hub 8
- Intel: InBusiness 8-Port 10/100 Hub
- Nortel: NetGear DS508

## Distribution Part Numbers and Ordering Information

### Cisco 1538 Micro Hubs<sup>1</sup>

CISCO1538	8-port Autosensing,10/100 Mbps, Manageable, Stackable Repeater
CISCO1538M	8-port Autosensing,10/100 Mbps, Managed, Stackable Repeater
CON-SNT-PKG1	Cisco 1500 Series SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco 1538 Micro Hub Web site: <http://www.cisco.com/go/1538>

## Cisco FastHub 400 10/100 Series

The Cisco FastHub® 400 10/100 series of high-performance Fast Ethernet repeaters delivers unmatched flexibility and low-cost managed connectivity to the desktop. The FastHub 400 10/100 series is a full line of products that includes 12- and 24-port 10/100 Fast Ethernet repeaters in managed and manageable versions. As the ideal complement to Catalyst 2900 series XL and Catalyst 3500 series XL autosensing 10/100 Fast Ethernet and Gigabit Ethernet switches, the FastHub 400 10/100 series provides ultra low-cost 10/100 autosensing desktop connectivity where dedicated bandwidth is not required.




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### When to Sell

#### Sell This Product

##### FastHub 412 or FastHub 424 10/100

##### FastHub 412M or FastHub 424M 10/100

#### When a Customer Needs These Features

- Ultra low-cost 10/100 connectivity
- Option to provide management for up to three stacked, manageable FastHub 400 repeaters with a managed FastHub 412M or FastHub 424M
- Flexibility to stack up to four FastHub 400 10/100 repeaters to create a FastHub 400 10/100 stack—a single, manageable, logical repeater of up to 96 10BaseT/100BaseTX ports
- Option for long-distance connectivity to the network core or between repeaters with a switched uplink module
- Low-cost 10/100 connectivity
- Powerful management through an embedded Web-based management interface; SNMP and Telnet interface support for in band management and support for CLI for out-of-band management; RMON software agents for traffic management, monitoring, and analysis
- Flexibility to stack and manage up to four FastHub 400 10/100 repeaters to create a FastHub 400 10/100 stack
- Option for long-distance connectivity to the network core or between repeaters with a switched uplink module

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### Key Features

- 12 or 24 10BaseT/100BaseTX autosensing ports with internal bridging provide fast exchange of information among users and workgroup servers
- 10- and 100-Mbps peak and aggregate throughput enables high-performance data transfers for workstations and server farms
- Unmatched flexibility through a broad range of options, including integrated hub stacking ports, switched uplink modules, and management option
- Cost-effective and powerful management options, with an embedded Web-base management interface (FastHub 412M and FastHub424 M)
- Compliments the Catalyst 2900 XL and 3500 XL product lines of 10/100 autosensing, autonegotiating switches; for customers who want the flexibility of 10/100 Fast Ethernet at low cost, the Catalyst 2900 XL or Catalyst 3500 XL can be used to aggregate one or more FastHub 400 10/100 series repeaters to provide connectivity to the desktop

## Specifications

Feature	FastHub 412	FastHub 412M	FastHub 424	FastHub 424M
<b>Fixed Ports (connections)</b>	12-port autosensing 10/100	12-port autosensing 10/100	24-port autosensing 10/100	24-port autosensing 10/100
<b>Modular Slots</b>	1	1	1	1
<b>Modules Available</b>	1-port 10/100bTX 1-port 100bFX	1-port 10/100bTX 1-port 100bFX	1-port 10/100bTX 1-port 100bFX	1-port 10/100bTX 1-port 100bFX
<b>Stackable</b>	Yes, up to 4 units	Yes, up to 4 units	Yes, up to 4 units	Yes, up to 4 units
<b>Management Capabilities</b>	Manageable by a FastHub 412M or 424M LEDs for power, port status, bandwidth utilization, collision detection, and speed indication	Web-based management, SNMPTelnet, RMON, CLI-based out-of-band, CiscoWorks Windows, and CiscoView on a per-port, per-hub, and per-stack basis LEDs for power, port status, bandwidth utilization, collision detection, and speed indication	Same as FastHub 412	Same as FastHub 412M
<b>Dimensions (HxWxD)</b>	1.73 x 17.5 x 8.25 in.	1.73 x 17.5 x 8.25 in.	1.73 x 17.5 x 8.25 in.	1.73 x 17.5 x 8.25 in.
<b>Service Category</b>	1	1	1	1

## Competitive Products

- 3Com: SuperStack II Dual Speed Hub 500
- Nortel: BayStack 250 Series 10/100 Hubs
- Intel: Express 220T 10/100 Stackable Hub

## Distribution Part Numbers and Ordering Information

### FastHub 400 10/100 Series<sup>1</sup>

WS-C412	FastHub 412 10/100, 12-port, Manageable Repeater
WS-C412M	FastHub 412M 10/100, 12-port, Managed Repeater
WS-C424	FastHub 424 10/100, 24-port, Manageable Repeater
WS-C424M	FastHub 424M 10/100, 24-port, Managed Repeater
WS-C424-5PACK	5 FastHub 424 10/100 Repeaters
WS-C424M-5PACK	5 FastHub 424M 10/100 Repeaters
WS-X401	10/100TX Switched Module for FastHub 400
WS-X402	100BASEFX Switched Module for FastHub 400
WS-C400-CAB-EXP=	Stacking Cable for FastHub 400 10/100 Series

### FastHub Series Basic Maintenance

CON-SNT-PKG1	FastHub SMARTnet Maintenance for FastHub 400 10/100 Series Repeaters
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1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the FastHub 400 Series Website: <http://www.cisco.com/go/fh400>

# Cisco Security Products at a Glance

<b>Product<sup>1</sup></b>	<b>Features</b>	<b>Page</b>
<b>Cisco Secure PIX™ Firewall</b>	Standalone, high-performance firewall appliance <ul style="list-style-type: none"> <li>• Secure, real-time embedded system</li> <li>• Scalable to more than 250,000 simultaneous connections</li> <li>• Available in two form factors for small and enterprise sites</li> </ul>	140
<b>Cisco Secure Integrated Software (formerly Cisco IOS Firewall Feature Set)</b>	Value-added option that provides advanced firewall-specific capabilities <ul style="list-style-type: none"> <li>• Stateful packet filtering via context-based access control (CBAC)</li> <li>• Intrusion detection for real-time response to network attacks</li> <li>• Dynamic, network-to network, per-user authentication and authorization via TACACS+ and RADIUS</li> </ul>	142
<b>Cisco Secure Scanner (formerly NetSonar)</b>	Proactive network security analysis system <ul style="list-style-type: none"> <li>• Comprehensive security assessment and reporting tool</li> <li>• Robust network inventory and mapping system</li> <li>• Measure security, manage risks, eliminate security vulnerabilities</li> </ul>	144
<b>Cisco Secure Intrusion Detection System (formerly NetRanger)</b>	Real-time intrusion detection system <ul style="list-style-type: none"> <li>• Real-time blocking of unauthorized activity</li> <li>• Transparent to legitimate traffic</li> <li>• Support for a range of speeds and interface types</li> <li>• Highly scalable</li> </ul>	146
<b>Cisco Secure Policy Manager (formerly Cisco Security Manager)</b>	Policy-based security management system for Cisco PIX Firewalls <ul style="list-style-type: none"> <li>• Innovative approach to security management</li> <li>• Manages multiple firewalls from a central location</li> <li>• Part of CiscoAssure Policy Networking</li> </ul>	148

1. See also CiscoSecure Software Product Line on page 163.

## Cisco Secure PIX Firewall

The Cisco Secure PIX Firewall, the leading product in its segment of the market, is a high-speed, dedicated firewall appliance that delivers strong security without impacting network performance. The PIX 515 chassis expands this world-leading product line with a low-profile, lower-cost entry and midrange model. At 1RU (1.72") height, the PIX 515 saves valuable rack space without sacrificing throughput. With support for 50,000 and 100,000 connections, the PIX 515 is ideal for smaller or remote locations. In combination with the PIX 520 (which supports 250,000 connections), Cisco now offers an unmatched dedicated firewall product family.



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### When to Sell

#### Sell This Product

##### Cisco Secure PIX Firewall 515R

##### Cisco Secure PIX Firewall 515UR

##### Cisco Secure PIX Firewall 520

#### When a Customer Needs These Features

- Dedicated firewall device for small office
- 50,000 simultaneous connections
- Dedicated firewall device for mid-size company
- 100,000 simultaneous connections
- Dedicated firewall device for large enterprise
- 128, 1024, or 250,000+ simultaneous connections

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### Key Features

- Highest performance
- Real-time embedded operating system
- Resides between the corporate network and the Internet access router, and includes Ethernet, Fast Ethernet, Token Ring, or FDDI LAN connectivity options
- Protection scheme is based on the adaptive security algorithm (ASA) to ensure the utmost in security
- Cut-through proxy for authentication and authorization
- Support for up to 250,000 simultaneous connections
- URL filtering
- HP OpenView integration
- Graphical user interface for configuration and management
- Alert and alarm notification via e-mail and pager
- VPN support with Private Link encryption card
- Trust Technology Assessment Program (TTAP) compliant; National Security Agency (NSA) certified

## Specifications

Feature	515R	515UR	520
<b>Simultaneous Sessions</b>	50,000	100,000	128, 1024, or 250,000+
<b>Interfaces</b>	2-port Ethernet	4-6 port Ethernet (with s/w)	2-6 port Ethernet (with s/w) 3 port Token Ring 2 port FDDI Combo Ethernet and Token Ring
<b>PCI Slots</b>	2	2	4
<b>10/100 Connections on Board</b>	2	2	0
<b>RAM</b>	32 MB	64 MB	128 MB
<b>Processor Speed</b>	200 MHz	200 MHz	350 MHz
<b>Dimensions (HxWxD)</b>	1.72 x 16.82 x 11.8 in.	1.72 x 16.82 x 11.8 in.	5.21 x 16.82 x 17.5 in.
<b>Service Category</b>	10	13	12

## Competitive Products

- Axent: Raptor
- Checkpoint: Firewall-1
- Network Associates: Gauntlet

## Distribution Part Numbers and Ordering Information

### Cisco Secure PIX Firewall Chassis Bundles<sup>1</sup>

PIX-515-R-BUN	PIX Firewall 515 with Restricted software
PIX-515-UR-BUN	PIX Firewall 515 with Unrestricted software and 32MB RAM upgrade
PIX-515-FO-BUN	PIX Firewall 515 failover chassis and software bundle
PIX-520-128-CH	PIX Firewall 520, 128 sessions, Pentium II, two10/100 NICs (autosensing)
PIX-520-1K-CH	PIX Firewall 520, 1K sessions, Pentium II, two10/100 NICs (autosensing)
PIX-520-UR-CH	PIX Firewall 520, Unlimited sessions, 233 MHz, two10/100 NICs (autosensing)
PIX-520-FO-BUN	PIX Firewall 520 failover chassis and software bundle

### Cisco Secure PIX Upgrades

PIX-CONN-128-1K=	PIX License upgrade from 128 to 1024 connections
PIX-CONN-128-UR=	PIX License upgrade from 1024 to unlimited connections
PIX-CONN-1K-UR=	PIX License upgrade from 1024 to unlimited connections
PIX-515-MEM-32	32 MB RAM upgrade for the PIX 515 Firewall
PIX-MEM-5XX-128	Memory upgrade to 128 MB for PIX 510 and 520 firewalls (prior to the PIX 520-XM)
PIX-FO=	Failover cable/upgrade kit (software version 3.0 or later)
PIX-VPN-3DES=	PIX 3DES Software License Without Client Software

### Cisco PIX Modules

PIX-1FE=	1-port 10/100 autosensing Module (RJ-45)
PIX-4FE=	4-port 10/100 autosensing Module
PIX-1TR=	1-port Token-Ring Module (4/16 Mbps)
PIX-PL2=	PIX Private Link 2 Module
PIX-FDDI=	PIX FDDI Card

### Cisco PIX Basic Maintenance

CON-SNT-PKG10	Cisco Secure PIX Firewall 515R SMARTnet Maintenance
CON-SNT-PKG13	Cisco Secure PIX Firewall 515UR SMARTnet Maintenance
CON-SNT-PKG12	Cisco Secure PIX Firewall 520 SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Secure PIX Firewall Web site: <http://www.cisco.com/go/pix>

## Cisco Secure Integrated Software

The Cisco Secure Integrated Software (formerly the Cisco IOS Firewall Feature Set) enriches Cisco IOS security capabilities, integrating robust firewall functionality and intrusion detection for every network perimeter. When combined with Cisco IOS IPsec software and other Cisco IOS software-based technologies such as L2TP tunneling and quality of service (QoS), Cisco Secure Integrated Software provides a complete, integrated virtual private network solution. Cisco Secure Integrated Software is available on a wide range of Cisco router platforms, scaling to allow customers to choose a router platform based on bandwidth, LAN/WAN density, and multiservice requirements, while benefiting from advanced security.

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### When to Sell

#### Sell This Product

##### Cisco Secure Integrated Software

#### When a Customer Needs These Features

- For secure extranet and intranet perimeters and Internet connectivity for branch and remote offices
- Secure remote access or data transfer via a Cisco IOS-based VPN solution
- A real-time integrated intrusion detection system to complement the firewall or an existing intrusion detection system (NetRanger)
- Security and access to the network on a per-user basis

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### Key Features

- Context-based access control (CBAC) provides secure, stateful, application-based filtering, supporting the latest protocols and advanced applications
- Intrusion detection for real-time monitoring, interception, and response to network misuse
- Dynamic, per-user authentication and authorization for LAN and WAN-based users and VPN clients
- Graphical configuration and management through the use of ConfigMaker Security Wizard
- Provides strong perimeter security as an essential component of a complete Cisco IOS-based VPN solution, including IPSec, QoS, and tunnelling for a wide range of Cisco router platforms

## Specifications

Feature	Cisco Secure Integrated Software
<b>Supported Network Interfaces</b>	All network interfaces on supported platforms
<b>Supported Platforms</b>	Cisco 1720, 2600, 3600, 7100, and 7200 series router platforms (supports full feature set) Cisco 800, UBR900, 1600, and 2500 series router platforms include all firewall features with exception of intrusion detection and authentication proxy
<b>Memory</b>	Varies by platform and image
<b>Simultaneous Sessions</b>	No maximum; dependent on platform, network connection, and traffic

## Competitive Products

- Ascend: SecureAccess Firewall
- Nokia: IP400 Series
- Nortel: BaySecure Firewall-1

## Distribution Part Numbers and Ordering Information

### Cisco Secure Integrated Software for 1600 Series Routers<sup>1</sup>

CD16-CH-12.0=	IP/Firewall Feature Pack
CD16-BHP-12.0=	IP/IPX/Firewall Plus Feature Pack
CD16-QHY-12.0=	IP/IPX/AT/IBM/Firewall Plus 56 Feature Pack
CD16-QHL-12.0=	IP/IPX/AT/IBM/Firewall Plus IPSec 56 Feature Pack

### Cisco Secure Integrated Software for 2500 Series Routers

CD25-CH-12.0=	IP/Firewall Feature Pack
CD25-BHP-12.0=	IP/IPX/AT/DEC/Firewall Plus
CD25-AHY-12.0=	Enterprise/Firewall Plus 56 Feature Pack
CD25-AHL-12.0=	Enterprise/Firewall Plus IPSec 56 Feature Pack

### Cisco Secure Integrated Software for 2600 Series Routers

CD26-CH-12.05=	Cisco 2600 Series IOS IP/Firewall Feature Pack
CD26-CHL-12.05=	Cisco 2600 Series IOS IP/Firewall Plus IPSec 56 Feature Pack
CD26-CHK2-12.05=	IP/Firewall Plus IPSec 3DES
CD26-BHP-12.05=	Cisco 2600 Series IOS IP/IPX/AT/DEC/Firewall Plus Feature Pack
CD26-AHL-12.05=	Cisco 2600 Series IOS Enterprise/Firewall Plus IPSec 56 Feature Pack
CD26-AHK2-12.05=	Enterprise/Firewall Plus IPSec 3DES

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco Secure Integrated Software site: <http://www.cisco.com/go/cs>

## Cisco Secure Scanner

Proactive, Preventative Security. The Cisco Secure Scanner (formerly NetSonar) is an enterprise-class software tool offering superior network system identification, innovative data management, flexible user-defined vulnerability rules, comprehensive security reporting capabilities, and Cisco 24x7 worldwide support. The Scanner is a key component in Cisco's end-to-end network security solutions. The Scanner allows users to measure security, manage risk, and eliminate security vulnerabilities, thereby enabling more secure network environments.




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### When to Sell

#### Sell This Product

##### Cisco Secure Scanner

#### When a Customer Needs These Features

- The ability to measure and reduce their security exposure
- A method to improve network security
- A process to define and validate security policies

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### Key Features

- Flexible licensing designed to serve the changing needs of customers and to provide unprecedented scanning flexibility
- Easy-to-use, intuitive user interface allows users to quickly configure a network scan without pre-existing knowledge of the network or security vulnerabilities
- Comprehensive scanning engine that can analyze and identify specific networked systems—including Web servers, firewalls, routers, switches, and workstations
- Flexible data analysis and reporting capabilities, including graphics-generating features and report wizard
- User-defined implementation options, including scheduling, specialized profiles, and customized scanning rules for legacy or proprietary systems
- Unique matrix browser and display technology that allows users to easily navigate through the data
- Regular vulnerability updates of signature and rules files on a bi-monthly schedule to stay current in a rapidly changing security environment
- Extensive network security database with descriptions of security problems and options to improve or fix them

## Specifications

Component	Minimum System Requirements for Windows NT	Minimum System Requirements for Solaris
<b>Hardware</b>	266 MHz Pentium CD-ROM drive TCP/IP network interface Screen resolution of 800 x 600 or greater	Sun SPARC 5 266 MHz Pentium PC CD-ROM drive TCP/IP network interface Screen resolution of 800 x 600 or greater
<b>Operating System</b>	Windows NT 4.0 Service Pack 3 or later	Solaris 2.6 or 2.7 (for SPARC) Solaris x86 2.6 or 2.7 (for Pentium)
<b>Software</b>	Netscape Navigator 3.0 or later Microsoft Internet Explorer 3.0 or later	Netscape Navigator 3.0 or later
<b>Disk Space</b>	2 GB hard drive	2 GB hard drive
<b>Memory</b>	64 MB (96 MB recommended)	64 MB (96 MB recommended)
<b>User Privileges</b>	Local or domain administrator	Root

## Competitive Products

- Axent: NetRecon
- ISS: Internet Scanner
- NAI: CyberCop Scanner

## Distribution Part Numbers and Ordering Information

### Cisco Secure Scanner<sup>1</sup>

NS-20-NT-2500	Scanner 2.0 for NT (Up to 2500 Addresses)
NS-20-S-2500	Scanner 2.0 for Solaris (Up to 2500 Addresses)

### Cisco Secure Scanner Software Application Support (SAS) Maintenance

CON-SAS-NS-NT	SAS Maintenance for Scanner for NT
CON-SAS-NS-SOL	SAS Maintenance for Scanner for Solaris

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cisco Secure Scanner Web site: <http://www.cisco.com/go/scan>

## Cisco Secure Intrusion Detection System

Cisco Secure Intrusion Detection System (formerly NetRanger) is an enterprise-scale, real-time, intrusion detection system designed to detect, report, and terminate unauthorized activity throughout a network.



Cisco Secure Intrusion Detection System can operate in both Internet and intranet environments to protect an organization's entire network. It consists of two components: Sensors and Directors. Transparent to network performance, Sensors analyze the content and context of individual packets to determine if the traffic is unauthorized. If a network's data stream experiences unauthorized activity, such as a SATAN attack, a ping sweep, or a secret research project code word, Sensors detect the policy violation in real time, forward alarms to a Director management console, and remove the offender from the network.

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### When to Sell

#### Sell This Product

##### Cisco Secure Intrusion Detection System

#### When a Customer Needs These Features

- A network-based, real-time intrusion detection system capable of monitoring an entire enterprise network
- A robust, 24 hour x 7 day-a-week monitoring and response system with the latest attack detection capabilities
- A distributed intrusion detection system capable of directing and forwarding alarms between local, regional, and headquarters-based monitoring consoles
- A scalable architecture to allow the deployment of large numbers of Sensors and Directors in order to provide comprehensive security coverage in large network environments.
- An intrusion detection system designed to integrate smoothly with existing network management tools and practices

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### Key Features

- Real-time intrusion detection transparent to legitimate traffic/network usage
- Real-time response to unauthorized activity blocks offenders from accessing the network or terminates offending sessions
- Comprehensive attack signature list detects a wide range of attacks and can detect content and context-based attacks
- Support for a range of speeds and interface types, including 10/100-Mbps Ethernet, Token Ring, and FDDI
- Alarms include attacker and destination IP addresses, destination port, and attack description
- Scalability for even extremely large, distributed networks

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## Specifications

Feature	Cisco Secure Intrusion Detection System
<b>Monitoring Network Interface Cards</b>	Ethernet Token Ring Fast Ethernet Single Attached FDDI Dual Attached FDDI
<b>Control Network Interface Card</b>	10/100BaseT Ethernet
<b>Processor Speed (type)</b>	Single or Dual 400 MHz (Intel Pentium)
<b>Memory</b>	64 MB for single-processor units; 128 MB for dual-processor units
<b>Hard Drive</b>	4.55 GB
<b>Floppy Drive</b>	1.44 MB
<b>CD-ROM Drive</b>	12X CD ROM

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## Competitive Products

- Axent: NetProwler
- Internet Security Systems (ISS): Real Secure
- Network Flight Recorder, Inc.: NFR

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## Distribution Part Numbers and Ordering Information

### Cisco Secure Intrusion Detection System<sup>1</sup>

NRD-DIR	NetRanger/Cisco Secure IDS Director Software
NRS-2E-DM	NetRanger/Cisco Secure IDS Ethernet Sensor w/Device Mgmt
NRS-2FE-DM	NetRanger/Cisco Secure IDS Fast Ethernet Sensor w/Device Mgmt
NRS-DFDDI-DM	NetRanger/Cisco Secure IDS DAS FDDI Sensor w/Device Mgmt
NRS-SFDDI-DM	NetRanger/Cisco Secure IDS SAS FDDI Sensor w/Device Mgmt
NRS-TR-DM	NetRanger/Cisco Secure IDS Token Ring Sensor w/Device Mgmt

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco Secure Intrusion Detection System Web site:  
<http://www.cisco.com/go/ids>

## Cisco Secure Policy Manager

Cisco Secure Policy Manager (formerly Cisco Security Manager) is a scalable, powerful security policy management system for Cisco PIX™ Firewalls. With Cisco Secure Policy Manager, Cisco customers can define, distribute, enforce, and audit security policies for multiple distributed firewalls from a central location. As the management cornerstone of the Cisco end-to-end security product line and a fundamental element of CiscoAssure Policy Networking, Security Manager can dramatically simplify management of the PIX Firewall—the highest-performance, enterprise-class firewall available.

Cisco Secure Policy Manager, also introduces the policy-based management foundation that will be extended in the future to support additional Cisco security solutions such as IPSec encryption, user identity and authentication, and intrusion detection technologies.

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### When to Sell

#### Sell This Product

##### Cisco Secure Policy Manager

#### When a Customer Needs These Features

- Security administration for multiple PIX firewalls within their corporate network
- An easy way to define network security policies based on their business objectives
- A simple way to enforce and monitor their established network security policies

---

### Key Features

- Provides a powerful security management system for networks containing multiple, distributed Cisco Secure PIX firewalls
- Offers scalability by providing management support for up to 100 Cisco PIX firewalls
- Offers a distributed architecture to support PIX firewalls in Internet, intranet, and extranet environments
- Provides configuration of remote PIX firewalls
- Provides an easy mechanism to define and manage Network Address Translation (NAT) policies for Cisco Secure PIX firewalls
- Offers high-level security policy management that allows an administrator to easily define security policies based on business objectives
- Includes an auditing and reporting system to validate and monitor that status of network security policies

## Specifications

Feature	Recommended Requirements for Cisco Secure Policy Manager
<b>Operating System Support</b>	Policy Manager client: Windows 98 or Windows NT 4.0 with Service Pack 4 Policy server: Windows NT 4.0 with Service Pack 4
<b>Web Browser Support</b>	Microsoft Internet Explorer v4.01 <sup>1</sup>
<b>Processor Speed (type)</b>	400 MHz or faster (Pentium II)
<b>Memory</b>	128 MB RAM or greater
<b>Hard Drive</b>	4 GB free space available (for the application and database)
<b>Video Display</b>	1024 x 768 video adapter card capable of at least 64,000 colors
<b>Devices Supported</b>	PIX firewalls with software v4.2.4, 4.2.5, 4.4.1, or 4.4.2

1. Microsoft Internet Explorer is used for the embedded on-line HTML help system and is required for product installation.

## Competitive Products

- Axent: Raptor Firewall and Raptor Firewall Management Console
- Checkpoint: Firewall-1
- Network Associates, Inc.: Gauntlet firewall

## Distribution Part Numbers and Ordering Information

### Cisco Secure Policy Manager<sup>1</sup>

SECMGR-1 <sup>2</sup>	Security Manager supporting 1 PIX firewall
SECMGR-10	Security Manager supporting up to 10 PIX firewalls
SECMGR-100	Security Manager supporting up to 100 PIX firewalls
SECMGR-UPG-10-100	Upgrade of Security Manager support from 10 to 100 firewalls

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)
2. Only available on CCO Software Center as a software download.

## For More Information

See the Cisco Secure Policy Manager Web site: <http://www.cisco.com/go/csm>



# Cisco Internet Products at a Glance

<b>Product</b>	<b>Features</b>	<b>Page</b>
<b>LocalDirector</b>	Integrated hardware and software solution for load balancing across servers <ul style="list-style-type: none"> <li>• Allows many servers to appear as one for high availability and easy scalability</li> <li>• Secure real-time embedded operating system</li> <li>• Scalable to meet needs of largest Web sites</li> </ul>	152
<b>Cisco DistributedDirector</b>	Global Internet service scaling solution <ul style="list-style-type: none"> <li>• Enables set of distributed servers to be seen as a single virtual server</li> <li>• Configurable as authoritative Domain Name Services (DNS) caching name server and/or HTTP Session Redirector on a per-domain basis</li> </ul>	154
<b>Cache Engine 500 Series</b>	Network-integrated caching solutions <ul style="list-style-type: none"> <li>• Reduce WAN bandwidth usage</li> <li>• Accelerate network performance</li> <li>• Increase the scalability of existing networks</li> </ul>	156
<b>IP/TV</b>	Affordable network video system <ul style="list-style-type: none"> <li>• High-quality video broadcasting and video-on-demand services</li> <li>• Industry-leading management capabilities</li> <li>• Built-in scalability</li> <li>• Easily deployed on IP/TV Series Servers</li> </ul>	158
<b>IP/VC</b>	Reliable, easy-to-manage, cost-effective network infrastructure for videoconferencing applications <ul style="list-style-type: none"> <li>• IP-based network videoconferencing solution</li> <li>• Reduces travel time and costs</li> </ul>	160
<b>Cisco 6510 Service Solution Gateway</b>	Offers the customer a selection of services <ul style="list-style-type: none"> <li>• Easy service selection via an HTML dashboard menu</li> <li>• Up to 25,000 users can be logged into the Cisco 6510</li> </ul>	162
<b>CiscoSecure Software Product Line</b>	Software that supports Cisco's dial access solutions <ul style="list-style-type: none"> <li>• CiscoSecure access control server (ACS) for UNIX</li> <li>• CiscoSecure ACS for Windows NT</li> <li>• CiscoSecure Global Roaming Server (GRS) for UNIX</li> <li>• The Cisco DialOut Utility</li> </ul>	163

## Cisco LocalDirector

Cisco LocalDirector is a high-availability Internet appliance for mission-critical TCP and UDP applications such as E-commerce Web servers, database applications, intranet servers, DNS servers, and TN3270 services. It is an integrated solution with a secure real-time embedded operating system that intelligently load balances TCP and UDP traffic across multiple servers. Appearing as a single virtual server, it delivers optimized performance by intelligently distributing client requests across clusters of heterogeneous servers.



LocalDirector ensures maximum client access while providing flexible scalability for traffic spikes and system maintenance. Servers can be automatically and transparently placed in or out of service, for server fault tolerance, quick response to sudden increases in traffic, and server maintenance with no site downtime. LocalDirector itself is equipped with a hot standby fail-over mechanism, ensuring that its function is highly available. In addition, LocalDirector can be configured so that virtual and real servers back up each other for fail-over depth.

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### When to Sell

#### Sell This Product

##### LocalDirector

#### When a Customer Needs These Features

- Load-balancing TCP or UDP servers
- High performance to handle high-traffic Web sites
- High availability for mission-critical applications
- TN3270 sessions in an IBM environment

---

### Key Features

- Hot standby and stateful fail-over enables configuration of highly redundant, fault-tolerant systems
- Server and application probing for fail-over on a per-port basis, allowing a server with its working applications to remain in service for maximized resource availability
- Scalable to meet the needs of largest Web sites
- Simple setup, with normal configuration requiring only 10 commands and with little disruption to existing network configuration
- Configurable to a total of 64,000 virtual and real servers, offers flexibility in domain names and network configuration
- Up to 240 Mbps throughput and over 20,000 connections-per-second performance to handle high traffic rates and sudden spikes in demand
- Easy server configuration by adding and removing servers transparently as traffic grows

## Specifications

Feature	LocalDirector 416	LocalDirector 430
<b>Supported Interfaces</b>	3-port 10/100 Ethernet	4-port 10/100 Ethernet
<b>Processor Speed (type)</b>	300 MHz (Pentium II)	450 MHz (Pentium II)
<b>RAM</b>	32 MB	384 MB
<b>Throughput</b>	80 MB	240 MB with Fast Ethernet
<b>Dimensions (HxWxD)</b>	5.21 x 16.82 x 17.5 in	5.21 x 16.82 x 17.5 in
<b>Service Category</b>	10	15

## Competitive Products

- Alteon Networks: ACEdirector and Web Switches with WebOS SLB/AR
- F5 Labs: Big IP
- Foundry Networks: ServerIron Switch
- IBM: Network Dispatcher
- Resonate, Inc.: Central Dispatch
- RND Networks: Web Server Director

## Distribution Part Numbers and Ordering Information

### LocalDirector<sup>1</sup>

LDIR-416	Standard LocalDirector
LDIR-430	High Performance LocalDirector
LD-QUADFE=	4-Port High-Speed Ethernet Card Spare
LD-FD=	Local Director Fail Over Cable
LD-FDDI=	FDDI Card for Local Director

### LocalDirector Basic Maintenance

CON-SNT-PKG10	SMARTnet Maintenance for LocalDirector 416
CON-SNT-PKG15	SMARTnet Maintenance for LocalDirector 430

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the LocalDirector Web site: <http://www.cisco.com/go/localdir>

## Cisco DistributedDirector<sup>1</sup>

DistributedDirector provides dynamic, transparent, and scalable Internet traffic load distribution between multiple geographically dispersed servers.

DistributedDirector is the only global Internet service scaling solution that utilizes Cisco Internetwork Operating System (Cisco IOS) software and leverages routing table information in the network infrastructure to make “network intelligent” load distribution decisions.

DistributedDirector uses routing table intelligence in the network infrastructure to transparently redirect end-user service requests to the closest responsive server, which increases access performance and reduces transmission costs. Users need only a single subdomain name or Universal Resource Locator (URL)-embedded hostname for accessing a distributed set of servers, thus providing the appearance of a single virtual server. This feature eliminates the need for end users to choose a server from a list of possible sites.

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### When to Sell

#### Sell This Product

##### Cisco Distributed Director

#### When a Customer Needs These Features

- Load distribution across geographically/topologically dispersed TCP/IP servers
- High availability for dispersed mission-critical applications
- Data center redundancy and failover
- TN3270 sessions in an IBM environment

---

### Key Features

- Transparent distribution of all IP Services (TCP and UDP), including HTTP, FTP, Telnet, and Gopher; provides global scalability for all IP-based network services
- Leverages Routing Table Information (BGP and IGP) in the Network Infrastructure to make “network intelligent” network service load distribution decisions, and improves access performance by redirecting clients to the topologically closest server
- Calculates client-to-server round-trip times in real time, redirects clients to server with lowest client-to-server link latency, maximizing end-to-end server access performance
- Redirects clients only to responsive servers, resulting in maximized service availability
- Utilizes Cisco IOS software and standard Cisco IOS command line interface (CLI) for device configuration
- Allows servers to be added and removed transparently, simplifying maintenance of distributed servers
- Supports multiple domains; cost-effective IP service scalability solution

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	DistributedDirector 2501/2502	DistributedDirector 4700M
<b>Supported Interfaces</b>	D2501—1 port Ethernet DD2502—1 port Token Ring	DDD4700ME—1 Ethernet DD4700MFE—1 Fast Ethernet DD4700MTR—1 Token Ring DD4700MFDM—1 dual-attached multimode FDDI
<b>Processor (type)</b>	20-MHz (68030 processor)	133-MHz (IDT Orion RISC processor)
<b>Flash Memory</b>	8 MB	16 MB
<b>DRAM</b>	8 MB	32 MB
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 10.56 in	3.4 x 17.6 in x 17.7 in

## Competitive Products

- Alteon Networks: ACEdirector and Web Switches with WebOS GLSB
- F5 Labs: 3DNS
- Foundry Networks: ServerIron Switch with Internet IronWare
- IBM: Network Dispatcher
- Resonate, Inc.: Global Dispatch
- RND Networks, Inc.: Web Server Director - Network Proximity (WSD-NP)

## For More Information

See the DistributedDirector web site at <http://www.cisco.com/go/dd>

## Cisco Cache Engine 500 Series



The Cisco Cache Engine 500 series products are network-integrated caching solutions that reduce WAN bandwidth usage, maximize network service quality, and increase the scalability of existing networks. Cisco's network caching solution is architected and optimized to work as a single caching system, combining cache-aware internetworking equipment, running Cisco IOS software's industry-leading Web Cache Communication Protocol (WCCP) with network-integrated Cache Engine 500 series products that are managed and designed like networking products and adapt to the network.

Because the new Cache Engines can be easily integrated into existing network infrastructures, they have a low cost of ownership and can be deployed on a wide-scale basis.

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### When to Sell

#### Sell This Product

#### Cisco Cache Engine 500 Series

#### When a Customer Needs These Features

- A transparent solution for reducing WAN bandwidth usage associated with Web traffic
- A network accelerator that maximizes network service quality and content availability
- A cost-effective solution for greater network scalability

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### Key Features

- Network Integration: Designed and managed like networking products and dynamically adapts to the network
- Transparent caching using one or many routers
- Fault tolerance features that eliminate any single point of failure
- Fault prevention features that proactively prevent network or application-level problems associated with traditional caches
- Scalable clustering for cost-effective handling of heavy traffic loads
- Easy system administration using familiar Cisco IOS management and an intuitive web-based GUI

## Specifications

Feature	Cisco Cache Engine 505	Cisco Cache Engine 550
<b>Supported Interfaces</b>	Two 10BaseT/100Base-TX ports	Two 10Base-T/100BaseTX ports
<b>Processor Speed</b>	266 MHz	366 MHz
<b>SDRAM</b>	128 MB	256 MB
<b>Internal Storage</b>	One 9 GB Ultra2 SCSI disk drive	Two 9 GB Ultra2 SCSI disk drives
<b>Dimensions (HxWxD)</b>	1.72 x 17.5 x 14.13 in.	1.72 x 17.5 x 14.13 in.
<b>Service Category</b>	7	9

## Competitive Products

- CacheFlow: 100, 500, 2000
- Inktomi: Traffic Server
- Microsoft: Proxy Server
- Network Appliance: C720S/C720/C760

## Channel Part Number and Ordering Information

### Cisco Cache Engine<sup>1</sup>

CE-505	Cisco Cache Engine 505 (T1/E1 uplinks)
CE-550	Cisco Cache Engine 550 (11 Mbps uplinks)
CE-550-DS3	Cisco Cache Engine 550 clustered solution for DS3 uplinks

### Cisco Cache Engine Basic Maintenance

CON-SNT-PKG7	SMARTnet Maintenance for Cisco Cache Engine 505
CON-SNT-PKG7	SMARTnet Maintenance for Cisco Cache Engine 550

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Cache Engine Web site: <http://www.cisco.com/go/cache>

## Cisco IP/TV Products<sup>1</sup>

IP/TV, a comprehensive network video solution, delivers TV-quality video programming over enterprise data networks to desktop PCs by using the IP/TV 3400 Series Servers. It provides organizations with a fast and effective way to deliver business communications to their employees. With IP/TV, every networked user can watch management broadcasts, training programs, university classes, business TV, and other programs from the convenience of their own desktop. IP/TV distinguishes itself by offering high-quality video broadcasting and video-on-demand services, industry-leading management capabilities, built-in scalability, network-friendly technologies such as IP Multicast, and an easy-to-use viewer interface.




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### When to Sell

#### Sell This Product

##### Cisco IP/TV

#### When a Customer Needs These Features

- A network video solution that multicasts live and scheduled video to unlimited number of users over an IP network and supports video-on-demand services
- The ability to communicate to a large audience effectively, affordably, and in a timely fashion
- Communication with a number of people who are geographically dispersed
- Product and employee training; corporate communications such as management presentations, conferences, meetings; business TV for professional growth; distance learning; monitoring requirements such as process or surveillance monitoring

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### Key Features

- Complete network video solution with Cisco IP/TV and Cisco IP/TV 3400 Series Servers
- Supports live video, scheduled video, and video on demand
- Powerful management capabilities with the IP/TV Content Manager software; services include program scheduling, bandwidth management, and server and content management
- Distributed video server architecture that easily scales and localizes bandwidth consumption
- Best-quality video utilizing a range of codecs to optimize available bandwidth
- Uses industry-standard technologies for network protocols, platform application programming interfaces (APIs), file formats, and codecs
- Runs on existing IP networks

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco IP/TV 3410 Control Server	Cisco IP/TV 3420 Broadcast Server	Cisco IP/TV 3430 Archive Server
<b>Disk Drives</b>	6-GB Ultra IDE	6-GB Ultra IDE	6-GB Ultra IDE (system disk) plus 2 x 9-GB Ultra Wide SCSI-3 (user disk) for 30 hours of 1-Mbps MPEG video store
<b>Network Connectivity</b>	One 10/100 Ethernet NIC	One 10/100 Ethernet NIC	One 10/100 Ethernet NIC
<b>Operating System</b>	Windows NT Workstation, preinstalled	Windows NT Server, preinstalled	Windows NT Server, preinstalled
<b>MPEG Capture Card</b>		MPEG-1 composite card	
<b>VFW Capture Card</b>		Capture card for H.261 and Vxtreme	
<b>IP/TV Software</b>	IP/TV Content Manager software installed StreamWatch software included	IP/TV Server software installed 50 IP/TV Viewer licenses included	IP/TV Server software installed 50 IP/TV Viewer licenses included
<b>Target Performance</b>		One live MPEG + 10-Mbps prerecorded 1-Mbps MPEG or one live H.261 + 9-Mbps prerecorded 256-Kbps H.261, or one live Vxtreme + 9-Mbps of prerecorded 56-Kbps Vxtreme	38 Mbps concurrent VOD accesses 27 Mbps concurrent scheduled multicasts
<b>Peripherals</b>	VGA graphics, keyboard, mouse, CD-ROM, floppy drive	VGA graphics, keyboard, mouse, CD-ROM, floppy drive	VGA graphics, keyboard, mouse, CD-ROM, floppy drive
<b>Network Interoperability</b>	All IP-based networks, IETF IP multicast	All IP-based networks, IETF IP multicast	All IP-based networks, IETF IP multicast

Customer Requirements	Cisco IP/TV Servers Needed	Concurrent Users Supported
1 live multicast and 10 scheduled multicasts	One 3420 Broadcast Server and one 3410 Control Server	Unlimited
36 - 50 VOD sessions	One 3430 Archive Server and one 3410 Control Server	36 @ 1 Mbps 50 @ 750 kbps
1 live multicast, 5 scheduled multicasts, and 36 - 50 VOD sessions	One 3430 Archive Server, one 3420 Broadcast Server, and one 3410 Control Server	Unlimited live and scheduled multicasts 36 - 50 VOD sessions, depending on bit rate

## Competitive Products

- First Virtual Corporation: V-Caster, V-Cache
- Microsoft: Window Media Technology
- Optivision: LiveSystem
- Real Network: RealSystem 6.0
- Silicon Graphics: 02/MediaBase

## For More Information

See the Cisco IP/TV Web site: <http://www.cisco.com/go/iptv>

## Cisco IP/VC Products<sup>1</sup>

The Cisco IP/VC Videoconferencing Product Family is an IP-based network videoconferencing solution.



Videoconferencing is a key business tool to re-engineer human potential within an organization, to maximize revenue opportunities while simultaneously reducing costs. Cisco IP/VC provides quality of service (QoS) across the IP network, multipoint capability, the customer's choice of third-party H.323 compatible videoconferencing systems and gateway resources to preserve customer investments in legacy circuit-switched networks and videoconferencing systems. The Cisco IP/VC Product Family comprises several products: the IP/VC 3510 Videoconferencing Multipoint Control Unit, the IP/VC 3520 and 3525 Videoconferencing Gateways, and the IP/VC 3530 Video Terminal Adapter. In addition, the Cisco Multimedia Conference Manager (MCM) is a Cisco IOS software feature set that enables IP networks to support secure, reliable H.323 videoconferencing, with advanced QoS capabilities. The MCM provides high-performance H.323 gatekeeper and proxy services.

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### When to Sell

#### Sell This Product

##### Cisco IP/VC Videoconferencing Solution

#### When a Customer Needs These Features

- A reliable, easy-to-manage, cost-effective network infrastructure for videoconferencing applications deployment
- A bridge between legacy H.320-based videoconferencing systems and improved H.323 IP-based videoconferencing solutions
- Improved collaboration, faster and more consistent development, release, manufacture and delivery of sales messages
- Tools to effectively communicate and manage through business transitions, for example, mergers, consolidations, and so forth
- Reduced travel costs and travel time
- Improved sales contact and customer support
- Rapid, consistent, well controlled training

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### Key Features

- Allows customers to build tailored videoconferencing solutions through interoperability with the customer's choice of H.323-compliant endpoints
- Provides connectivity between H.323 IP-based endpoints and legacy circuit-switched H.320 systems
- Allows users to initiate multipoint video conferences on demand
- Allows network managers to implement quality of service (QoS) policies to guarantee bandwidth availability and manage bandwidth usage
- Enables improved business productivity through increased collaboration and reduced expense
- Supports cost-effective video applications such as e-learning, corporate communications, and telemedicine

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco IP/VC 3510 Multipoint Control Unit	Cisco IP/VC 3520/3525 Gatekeepers	Cisco IP/VC 3530 Video Terminal Adapter
<b>LAN Interface</b>	One 10/100 Ethernet port, IEEE 802.3, 8-pin RJ45	One 10/100 Ethernet port, IEEE 802.3, 8-pin RJ45	One 10/100 Ethernet port, IEEE 802.3, 8-pin RJ45
<b>WAN Interface</b>	Not applicable	<p><b>3520:</b> Chassis accommodates up to two WAN modules</p> <p>V.35 module: Dual port module, DTE nx56, nx64 up to 384 kbps; auto clock sensing; V.25bis or RS-366 dialing; 26-pin D-type connector</p> <p>ISDN BRI module: dual BRI ports; RJ45 connector</p> <p><b>3525:</b> Configurable single PRI with standard RJ45</p> <p>T1 mode 23B +D</p> <p>E1 mode 30B + D</p>	Dual V.35 DCE with RS-366 Dialing-26-pin D-type connector
<b>Serial Port</b>	RS-232, 9-pin, D-type, DCE	RS-232, 9-pin, D-type, DCE	RS-232, 9-pin, D-type, DCE
<b>Video Coding</b>	H.261, QCIF/CIF	H.261, QCIF/CIF	H.261, QCIF/CIF
<b>Audio Coding</b>	G.711, A/μ Law	G.711, G.723, G.728; Transcoding between G.711/G.723 and G.711/G.728	G.711, G.728
<b>Data Collaboration</b>	Supports T.120 data collaboration	Supports T.120 data collaboration	Supports T.120 data collaboration
<b>Gatekeeper Support</b>	Built in gatekeeper; Optional support for the Cisco Multimedia Conference Manager	Built in gatekeeper; Optional support for the Cisco Multimedia Conference Manager	Supports gatekeeper in IP/VC Gateway, IP/VC MCU, or Cisco MCM
<b>Sessions Supported</b>	15 at 128 kbps, nine at 384 at kbps, five at 768 kbps, three at 1.5 Mbps. Larger conferences created by Cascading	<p><b>3520:</b> Up to two at 384 kbps (with V.35 WAN interfaces), or four at 128 kbps</p> <p><b>3525:</b> Up to three at 384 kbps (T1), or four at 384 kbps (E1), or up to eight at 128 kbps</p>	One at up to 384 kbps
<b>Call Control Features</b>	Voice-activated and chair controlled video switching	<p>Supports interactive voice response (IVR); DTMF; direct inward dialing (DID)/multiple subscriber line (MSN); TCS4; and default extension</p> <p>Advanced services—group hunting, call transfer</p>	<p>Conference bandwidth can be specified within H.323 dialing strings.</p> <p>For incoming calls, supports all H.323 dialing modes (H.323 aliases or E.164 addresses)</p> <p>For outgoing calls, H.320 dialing string is directed to H.323 endpoints through a gatekeeper</p> <p>Gatekeeper registration supports H.323 standard access control, bandwidth management, and security features</p>

## Competitive Products

- Accord (Multipoint/Gateway vendor)
- Ezenia! (Multipoint/Gateway vendor)
- FVC.COM (H.321 ATM vendor)
- Lucent (PBX/Multipoint/Gateway vendor)
- Nortel (PBX/Multipoint vendor)
- White Pine Software (Multipoint vendor)

## For More Information

See the Cisco Video Solutions Web site: <http://www.cisco.com/go/ipvc>

## Cisco 6510 Service Selection Gateway<sup>1</sup>

The Cisco 6510 Service Selection Gateway (SSG) is a key element in breaking through the services profitability barrier by offering the customer a selection of services. For service providers worldwide that need to go



beyond fixed-rate services and statically provisioned networks, the Cisco 6510 SSG advertises services that the customer can effortlessly select by accessing an HTML dashboard server. The dashboard Web server accompanies the Cisco 6510 SSG and allows service providers a means to advertise available services to customers so that they can instantly know what services are available and easily select a service.

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### When to Sell

#### Sell This Product

##### Cisco 6510

#### When a Customer Needs These Features

- Single-user access to multiple destinations simultaneously
- Multiple users at a single customer premises equipment (CPE) access to multiple destinations simultaneously
- A way to advertise and offer additional on-demand services through an HTML dashboard menu

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### Key Features

- Easy service selection via an HTML dashboard menu
- Up to 25,000 users can be logged into the Cisco 6510 simultaneously
- Supports warm standby fail-over
- Accounting for each individual service, allowing service providers lots of flexibility in billing
- Physical media independence supports dial, asymmetric digital subscriber line (ADSL), and cable

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### For More Information

See the Cisco 6510 Service Selection Gateway site: <http://www.cisco.com/go/6510>

1. For ordering information on this product, contact your Cisco Account Team.

## CiscoSecure Software Product Line<sup>1</sup>

The CiscoSecure software product line supports Cisco's dial access solutions with dial-in access control, Internet services provisioning, and outbound dial and fax.

CiscoSecure ACS for UNIX provides access control services for large- and medium-sized access environments. CiscoSecure ACS for Windows NT delivers easy-to-use access control services for Windows NT environments. CiscoSecure Global Roaming Server (GRS) for UNIX enables service providers and corporate customers to take local Internet connectivity to a global scale. The Cisco DialOut Utility allows desktop LAN users to share NAS ports as a modem pool for outbound async communications.




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### When to Sell

#### Sell This Product

##### CiscoSecure ACS for UNIX

#### When a Customer Needs These Features

- Securing dialup access in enterprise and SP environments, including support for dial VPN services using Remote Access Dial-In User Service (RADIUS) or access control for Cisco network elements using TACACS+
- Operation in the Solaris environment
- Use of external relational databases such as Oracle and Sybase

##### CiscoSecure ACS for Windows NT

- Centralized security for access to the network through dial-up access servers, PIX firewalls, and routers
- Ability to use the user names and passwords already in the Windows NT Database for authenticating users through an access server
- Control over what authenticated users are authorized to do

##### CiscoSecure GRS for UNIX

- Provide new Internet access points for network service provider (NSP) customers by virtually leasing out the NAP's PoPs to the ISP; ISPs can use existing AAA infrastructure and databases; the NAP provides Internet roaming service (wholesale dial access) to the NSP
- Provide intranet access for corporate customers
- Provide intranet roaming service for other NSP/NAP customers so mobile users can access the corporate intranet

##### Cisco DialOut Utility

- Replacement of desktop modems with centrally administered outbound dial pool
- Customer uses Windows PCs and Cisco NASs
- Ensure compatibility with existing asynchronous dial client applications
- Registered CCO users can download the Cisco DialOut Utility from [www.cisco.com/kobayashi/sw-center/access/dialout-planner.shtml](http://www.cisco.com/kobayashi/sw-center/access/dialout-planner.shtml)

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### Key Features

- All CiscoSecure products are tightly integrated with Cisco IOS features
- Standards-based approach to solution development, with implementations of TACACS+, RADIUS, and RFC 2217 reverse telnet dial-out ensures compatibility in multivendor network environments
- Web-based graphical-user interface for server-based products allows multiple user access from common Web browser clients on different host platforms

1. For ordering information on the CiscoSecure GRS for UNIX, contact your Cisco Account Team.

## Specifications

Feature	GRS for UNIX	ACS for UNIX	ACS for Windows sNT	DialOut Utility
<b>Platform</b>	Sun SPARCstation 20	Sun SPARCstation 20	IBM PC or compatible running Windows NT Server 4.0 Pentium 133-MHz processor or faster Screen resolution of 800x600 or higher	80486 or higher processor
<b>RAM</b>	128 MB	256 MB	48 MB required 64 MB recommended	Approximately 20K
<b>Disk Drive</b>	128 MB of disk swap space 500 MB of disk space	128 MB of disk swap space 500 MB of disk space	150 MB of disk space CD-ROM drive	Approximately 1.5 MB of hard disk space
<b>Software Requirements</b>	Operating System – Solaris V2.6	Solaris V2.6 or V2.5.1 (with required patches)	Internet Explorer V3.02 or V4.0 or Netscape Navigator V3.01, Communicator V4.03	Windows 95 or Windows NT 4.0 If you are using Cisco DialOut Utility for dialup, you need communications software If you are using Cisco DialOut Utility for faxing, your fax software must support Class 2 faxing
<b>Platform Requirements</b>	CiscoSecure GRS V.1.1 interoperates with Cisco IOS software release 11.2.x or higher	Release 11.1 or higher on the network device (11.2 for RADIUS)	Cisco IOS software 11.1 or higher on the NAS	The NAS must be running Cisco IOS software 11.3(1) or higher DialOut supports mica modems

## Competitive Products

GRS for UNIX	ACS for UNIX	ACS for Windows NT
Ascend Communications: Access Control	Ascend Communications: Access Control	Ascend Communications: Access Control
Lucent Technologies: RADIUS Authentication and Billing Manager (ABM)	Bay: Secure Access UNIX Funk Software: Steel-Belted Radius	Bay: Secure Access NT Funk Software: Steel-Belted Radius
Merit Network: Merit AAA Server	Lucent Technologies: RADIUS Authentication and Billing Manager (ABM)	Shiva: Access Manager
Nortel Networks: Baysecure Access Control	Merit Network: Merit AAA Server	Livingston: Radius NT Service

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## Distribution Part Numbers and Ordering Information

### CiscoSecure ACS<sup>1</sup>

CSNT-2.4	CiscoSecure ACS for Windows NT V.2.4
CSNT-2.4-UG	CiscoSecure ACS for Windows NT to V.2.4 upgrade
CSU-2.3	CiscoSecure ACS for UNIX (Solaris) V.2.3
CSU-2.3-UG	CiscoSecure ACS for UNIX (Solaris) V.1.0/V.2.x for UNIX to V.2.3 upgrade
CON-SAS-CSNT	CiscoSecure Software Application Support for Windows NT
CON-SAU-CSNT	CiscoSecure Software Application Support plus upgrades for Windows NT

### CiscoSecure GRS

CSU-GRS-1.3	CiscoSecure GRS V.1.3 for UNIX (1 server license)
CSU-GRS-4S-1.3	CiscoSecure GRS V.1.3 for UNIX (4 server license)
CON-SAS-CSUGRS	CiscoSecure GRS Software Application Support
CON-SAS-CSUGRS4S	SAS Service, CSU-GRS-4S, CS GRS UNIX 4-Server License
CON-SAU-CSUGRS	CiscoSecure GRS Software Application Support plus Upgrade
CON-SAU-CSUGRS4S	SAU Service, CSU-GRS-4S, CS GRS UNIX 4-Server License

### CiscoSecure SMARTnet Maintenance

CON-SNT-PKG7	CiscoSecure SMARTnet Maintenance
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1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

For CiscoSecure ACS and GRS, see the CiscoSecure Web site:  
<http://www.cisco.com/go/ciscosecure>

For Cisco DialOut Utility (requires CCO login), see  
<http://www.cisco.com/kobayashi/sw-center/access/dialout-planner.shtml>



# ATM Products at a Glance

<b>Product</b>	<b>Features</b>	<b>Page</b>
<b>Cisco LightStream 1010</b>	An ATM switch for campus and enterprise backbones as well as ATM WAN edge deployment <ul style="list-style-type: none"><li>• Advanced traffic management (ATM)</li><li>• Winner of the Best of LANTIMES award</li><li>• Delivers the performance, scalability, and robustness required for true production ATM deployment</li></ul>	168
<b>Cisco BPX 8600Series</b>	A carrier-class network backbone for service provider environments <ul style="list-style-type: none"><li>• A standards-based ATM switch that supports broadband, IP, and broadband/narrowband service delivery</li><li>• Integrates cleanly with OSS infrastructures, offering carrier-class reliability, unbeatable port density, and the industry's highest IP scalability</li></ul>	169
<b>Cisco MGX 8220</b>	An integrated or stand-alone solution for concentrating narrowband traffic over a wide-area ATM network backbone <ul style="list-style-type: none"><li>• Offers the simplest way to deliver leading-edge narrowband services</li></ul>	171
<b>Cisco IGX 8400</b>	A carrier-class network backbone for service provider and large enterprise networks <ul style="list-style-type: none"><li>• Tightly integrated with Cisco router and access products</li><li>• Supports delivery of broadband and narrowband services with end-to-end high quality of service</li></ul>	173
<b>Cisco MGX 8800 Series</b>	Provides the best of both IP and ATM in a single platform <ul style="list-style-type: none"><li>• Offers the industry's widest breadth of integrated IP+ATM services and unmatched deployment flexibility</li><li>• Provides both IP and ATM services in a single platform</li></ul>	175

# Cisco LightStream 1010<sup>1</sup>

The Cisco LightStream 1010 offers the sophistication and depth of functionality required for true advanced traffic management. The Cisco LightStream 1010 supports current, bursty, best-effort traffic, while also delivering the QoS guarantees required for applications of the future.



Available bit rate (ABR) congestion control support allows the LightStream 1010 to slow traffic sources before congestion becomes excessive, whereas support for the ATM Forum PNNI protocols allows networks of LightStream 1010s to scale to hundreds of nodes while still delivering interoperable, QoS-based routing. Value-added capabilities allow for access lists and load sharing across redundant links. All this sophistication is hidden, however, by the true standards-based, plug-and-play capabilities of the LightStream 1010, and advanced management functions allow for unprecedented levels of network visibility and control.

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## Key Features

- Switch architecture—Fully nonblocking shared-memory switch fabric; field upgradable feature card that implements all advanced switch and traffic management functions
- Network management—CWSI 2.1, CiscoView for the Lightstream 1010
- High-speed switching architecture—Allows up to 32 OC-3 connections

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## Specifications

Feature	LightStream 1010
<b>Fixed Ports</b>	None
<b>Modular Slots</b>	5
<b>Supported Interfaces</b>	OC-3 / OC-12 ATM single mode/multimode STM-1 / STM-4 ATM single mode/multimode DS3 4-port/2-port E3 4-port/2-port T1/E1 ATM trunk and T1/E1 circuit emulation ATM 25 Mbps
<b>DRAM</b>	16 MB (default)
<b>Capacity</b>	5 Gbps, 65,536 cells of buffering
<b>Dimensions (HxWxD)</b>	10.5 x 17.2 x 18.1 in.
<b>Connections</b>	Switch to switch: IISP, PNN User: UNI 3.0/3.1/4.0 SVCs and PVCs, point-to-point and point-to-multipoint, soft PVCs, SVC tunneling over PVPs

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## For More Information

See the LightStream Web site: <http://www.cisco.com/go/ls1010>

1. For ordering information on this product, contact your Cisco Account Team.

## Cisco BPX 8600 Series Wide-Area Switches<sup>1</sup>

The Cisco BPX® 8600 series switches are powerful broadband wide-area switches with advanced IP and ATM capabilities. Designed to meet the demanding, high-traffic needs of a public service provider or large private enterprise, the BPX switch delivers high-performance ATM switching, multiservice adaptation, and aggregation for all types of user traffic.



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### Key Features

- Support for integrated IP and ATM services
- Virtual Switch Interface allows for multiple controllers to enable new services
- Supports MPLS to enable services such as highly scalable IP Virtual Private Networks with Quality of Service guarantees
- Up to 1,000,000 cells buffering per interface card allocated per virtual path/virtual connection (VP/VC)
- Supports up to 16 classes of service
- ABR virtual source/virtual destination (VS/VD) traffic management per ATM Forum Specification V.4.0
- Virtual trunking
- All components are optionally redundant to 100 percent system redundancy
- SONET APS for OC-3c/STM-1 and OC-12c/STM-4 BXM modules
- Network management:
  - In-band and out-of-band network management supported
  - SNMP and MIB support for configuration and monitoring
  - Trivial File Transport Protocol (TFTP) support for bulk statistics collection
  - Interfacing to network management is provided through one 802.3 attachment unit interface (AUI) interface for local connection to StrataView Plus® and two asynchronous control/printer ports
- Automatically reroutes connections in the event of a link failure
- Per-virtual connection control capabilities manage queuing, rate scheduling, statistics collection, and fair allocation of bandwidth
- Advanced class-of-service (CoS) management enables managers to tailor individual connections to meet service level guarantees for IP, ATM, and Frame Relay traffic

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco BPX 8600 Series Wide-Area Switch
<b>Fixed Ports</b>	None
<b>Modular Slots</b>	15 slots (2 slots reserved for redundant control and switch modules, 1 slot reserved for alarm status monitor (ASM) module, 12 slots for general-purpose interface modules)
<b>Broadband ATM Interfaces</b>	Conformance to ATM Forum Specification V.3.1 and TM 4.0 T3/DS-3 (44.736 Mbps) per TA-TY-000773 and direct mapping per ITU-T G.804 E3 per ITU-T Rec. G.804 OC-3c (155.520 Mbps) with SONET framing per Bellcore GR-253, ANSI 1.105 STM-1 (155.520 Mbps) with SDH framing per ITU-T Rec. G.707-G.709 OC-12c (622.08 Mbps) SONET per Bellcore GR-253, ANSI T1.105 STM-4 (622.08 Mbps) with SDH framing per ITU-T Rec. G.707-G.709
<b>Maximum Configuration</b>	24 OC-12/STM-4 ports; 96 OC-3c/STM-1 ports; 144 T3/E3 ports; 1280 T1/E1 ports 30,000 ports (at 64 kbps, DS-0) Scalable multishelf architecture
<b>Crosspoint Switch Fabric</b>	19.2 Gbps switch capacity 12 800/1600-Mbps switch ports that can support up to OC-12c/STM-4 cell rate
<b>PVC Service Classes</b>	Constant bit rate (CBR) Real time variable bit rate (RT-VBR) Non-real time variable bit rate (NRT-VBR) Unspecified bit rate (UBR) Available bit rate (ABR)
<b>Broadband Network Interfaces</b>	Conformance to ATM Forum Specification V.3.1 and TM 4.0 T3/DS3 (44.736 Mbps) E3 (34.368 Mbps) OC-3c (155.520 Mbps) SONET STM-1 (155.520 Mbps) SDH OC-12c (622 Mbps) SONET STM-4 (622 Mbps) SDH
<b>Dimensions (HxWxD)</b>	8620: 22.75 x 17.72 x 27 in. 8650: 28 x 17.72 x 27 in. 8680: 22.75 x 17.72 x 27 in.

## For More Information

See the Cisco BPX 8600 web site: <http://www.cisco.com/go/bpx8600>

## Cisco MGX 8220 Edge Concentrator<sup>1</sup>



The MGX™ 8220 edge concentrator concentrates narrowband traffic for Cisco BPX 8600 series and LS 1010 switches, Cisco 7500 series routers, and other vendors' ATM switches. Single-platform service creation allows you to quickly deploy innovative narrowband Frame Relay, ATM, Internet, SNA, video, and circuit emulation for transport over the network backbone. Traffic can be aggregated from as many as 80 T1 or E1 ports onto a single port of a trunk card, slashing cost per port and providing unmatched scalability. Standards-based and designed for carrier-class environments, the MGX 8220 offers the simplest way to deliver leading-edge narrowband services, integrating cleanly with your provisioning, billing, monitoring, and reporting infrastructure.

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### Key Features

- Redundancy:
  - 1:1 optional common equipment redundancy
  - 9:1 optional subscriber interface redundancy
- Network management:
  - Simple Network Management Protocol (SNMP) configuration and monitoring
  - Trivial File Transfer Protocol (TFTP) software download
  - TFTP statics collection
  - CiscoView
- Supports a wide range of narrowband and mid-band services:
  - Frame Relay UNI/NNI
  - High speed Frame Relay
  - ATM Frame UNI
  - ATM UNI/NNI (T1/E1 ATM UNI and n x T1/E1 IMA)
  - SNA
  - Circuit Emulation
  - Frame forwarding for PPP, X.21, and X.25 transport

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	MGX 8220
<b>Fixed Ports</b>	None
<b>Modular Slots</b>	16 slots: 10 slots available for function modules 6 slots reserved for common control cards – 2 for common control (ASC) (1 reserve, 1 hot standby) – 2 for service trunking (1 active, 1 hot standby) – 2 for SRM (1 active, 1 hot standby)
<b>Subscriber Interfaces</b>	T1/E1 Frame Relay (fractional and channelized) High-speed Frame Relay ATM Frame UNI n x T1/E1 IMA UNI T1/E1 ATM T1/E1 Circuit Emulation (UDT and SDT) SNA/SDLC Bisync
<b>Trunk Interfaces</b>	T3/E3 SONET STS-OC-3/STM-1 IMA (n x T1/E1)
<b>Connection Management</b>	Permanent virtual circuits (PVCs) or switched virtual circuits (SVCs)
<b>Switching</b>	320-Mbps ATM cell bus
<b>Power Requirements</b>	-48 VDC or 110/220 VDC 400 watts Redundant power feeds
<b>Capacity</b>	640 Mbps ATM cell bus
<b>Dimensions (HxWxD)</b>	8.75 x 17.45 x 20 in. 19 in. rack mountable

## For More Information

See the Cisco MGX 8220 web site: <http://www.cisco.com/go/mgx8220>

## Cisco IGX 8400 Series<sup>1</sup>

The IGX 8400 series wide-area switches provide the backbone required to deliver today's enterprise data, voice, fax, and video applications. The IGX 8400 series switches fully integrate with other Cisco WAN switching, access and customer premise equipment (CPE) products to offer an end-to-end networking solution that maximizes operational efficiencies and reduces costs.



### Key Features

- **Multiservice integration**—supports all applications, reducing network operation costs and increasing WAN bandwidth savings due to statistical multiplexing; consolidates multiple WAN infrastructures; provides flexibility for deploying voice over IP, ATM, or Frame Relay
- **Bandwidth efficiency**—maximizes efficiency of expensive WAN circuits for data, voice and video traffic, thereby reducing recurring bandwidth costs
- **Performance and QoS guarantees**—delivers high performance and full control over network resources with per-VC queuing, per-VC rate scheduling, and multiple classes of service (COS) to guarantee QoS levels for the individual applications; supports all applications, according to their specific requirements, using advanced traffic management and CoS features
- **Flexible, scalable network design**—available as the IGX 8410 with eight slots, the IGX 8420 with 16 slots, or the IGX 8430 with 32 slots, the IGX 8400 series offers the greatest flexibility to meet a wide range of enterprise needs
- **Seamless integration of existing IGX 8400, BPX 8600, and MGX 8220 networks**
- **End-to-End Integration**—extends WAN backbone to branch offices, providing the same high service levels regardless of location; provides value-added interworking between existing Cisco routers and LAN switches for seamless traffic flow between LAN/campus and WAN environments; reduces operational efforts with integrated network management systems

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco IGX 8410/8420/8430/SES
<b>Number of Slots</b>	IGX 8410: 8 slots (2 slots reserved for redundant processor modules) IGX 8420: 16 slots (2 slots reserved for redundant processor modules) IGX 8430: 32 slots (2 slots reserved for redundant processor modules) SES: 7 slots (2 slots reserved for redundant processor modules; some service modules take up half a slot, while others take a full slot)
<b>ATM Interfaces</b>	2-port OC-3c/STM-1 SMF/MMF 4-port OC-3c/STM-1 SMF/MMF/Electrical 3- or 6-port T3/E3 4- or 8-port nxT1/E1 (IMA)
<b>Frame Relay Interfaces</b>	4- or 8-port T1/E1 12-port V.35/X.21 4-port HSSI 2-port T3/E3* 2-port Channelized T3*
<b>Voice Interfaces</b>	1-port T1/E1/J1 (CAS and CCS) Compression: G.726, G.728, G.729, G.729a Silent suppression Echo cancellation Fax and modem detection Fax Relay
<b>Circuit Data and Circuit Emulator Interfaces</b>	4- or 8-port EIA/TIA-232 4-port V.35, EIA/TIA-449 SNA/SDLC, BSC, HDLC/X.25 frame forwarding 8-port T1/E1* 2-port T3/E3*
<b>Dimensions (HxWxD)</b>	IGX 8410: 24.4 x 19.9 x 27.1 in. IGX 8420: 32 x 19.9 x 27.1 in. IGX 8430: 55 x 19.9 x 27.1 in. SES: 12.2 x 17.7 x 28.3 in.

\* Requires SES

## For More Information

See the Cisco IGX 8400 web site: <http://www.cisco.com/go/igx8400>

## Cisco MGX 8800 Series Wide-Area Edge Switches<sup>1</sup>

The Cisco MGX 8800 series wide-area edge switch offers the industry's widest breadth of integrated IP+ATM services and unmatched deployment flexibility. Now, service providers can provision today's revenue-generating leased-line, Frame Relay, ATM, and Internet services while enabling deployment of integrated VPN, managed intranet, electronic commerce, voice, and video services over a packet infrastructure. The MGX 8800 edge switch provides the best of both worlds—IP and ATM—in a single platform, to enable service providers to reduce capital and operational costs by eliminating the need to build multiple overlay networks. No matter what demands the market makes, the Cisco MGX 8800 delivers the scalability and widest range of service interfaces to meet the demand.



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### Key Features

- Scalable from 1.2 to 45 Gbps of nonblocking throughput with single chassis
- Flexible IP+ATM multiservice platform
- Integration of digital cross connect, ATM/FR switching, voice switching, and IP routing in a single platform
- Highest reliability, availability, and serviceability in the industry
- Managed by Cisco's IP+ATM service management tools
- All components are optionally redundant to 100-percent system redundancy, including the control processor switching fabric, network interfaces, service interfaces, critical backplane signals, power supplies, power modules, and cooling fans

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Cisco MGX 8800
<b>Fixed Ports</b>	None
<b>Modular Slots</b>	<p>32 single-height (16 double-height) function module slots</p> <p>Single-height slots can be in-service converted to double-height slots by removal of midrail dividers</p> <p>2 double-height slots reserved for redundant processor switch modules</p> <p>4 single-height (2 double-height) slots reserved for optional value-added service resource modules</p> <p>24 single-height (12 double-height) slots for service modules</p>
<b>Network Interfaces</b>	<p>OC-48c/STM-16</p> <p>OC-12c/STM-4</p> <p>OC-3c/STM-1</p> <p>T3</p> <p>E3</p> <p>Channelized T3 (down to DS0)</p> <p>n x T1/E1</p> <p>T1/E1</p> <p>Channelized T1 (DS0 and nx DS0)</p> <p>Channelized E1 (DS0 and nx DS0)</p> <p>HSSI, X.21, V.35</p> <p>Ethernet</p> <p>Fast Ethernet</p> <p>Fiber Distributed Data Interface (FDDI)</p>
<b>Services</b>	<p>IP VPNs</p> <p>Voice</p> <p>Frame Relay</p> <p>PPP access</p> <p>Cell relay</p> <p>Frame Relay-to-ATM network interworking</p> <p>Frame Relay-to-ATM service interworking</p> <p>Circuit Emulation</p> <p>Complete suite of Cisco IOS-based protocols and services</p>
<b>Node Synchronization</b>	<p>Internal Stratum-3 clock source</p> <p>External T1/E1 BITS source</p> <p>External source received inband over the network (synchronization to software-programable primary and secondary sources with automatic switchover)</p>
<b>Dimensions (H x W x D)</b>	29.75 x 17.72 x 21.5 in.

## For More Information

See the Cisco MGX 8800 web site: <http://www.cisco.com/go/mgx8800>

# Network Management Products at a Glance

Product	Features	Page
<b>CiscoWorks2000 Routed WAN Management Solution</b>	A comprehensive set of applications for managing the router elements of a multiservice wide-area network, which includes: <ul style="list-style-type: none"> <li>• ACL Manager</li> <li>• IPM</li> <li>• CiscoView</li> <li>• TrafficDirector</li> <li>• Resource Manager Essentials</li> </ul>	179
<b>CiscoWorks2000 Campus Bundle</b>	Provides key applications needed to manage Catalyst-based campus networks. This bundle includes: <ul style="list-style-type: none"> <li>• CWSI Campus</li> <li>• CiscoView</li> <li>• TrafficDirector</li> <li>• Resource Manager Essentials</li> </ul>	181
<b>CiscoWorks2000 User Registration Tool (URT)</b>	Identifies users within the network and creates user registration policy bindings for policy registration, mobility, and tracking. <ul style="list-style-type: none"> <li>• Ensures that users are associated with their authorized subnet/VLAN</li> <li>• Addresses the challenges associated with Campus user mobility</li> </ul>	184
<b>CiscoWorks Windows</b>	A comprehensive suite of integrated network management tools <ul style="list-style-type: none"> <li>• Optional bundling with an event management and topology mapping application</li> <li>• Based on the SNMP industry standard</li> </ul>	186
<b>CiscoWorks Blue</b>	A suite of products designed to simplify management of a consolidated SNA and IP network <ul style="list-style-type: none"> <li>• Enables router monitoring, reporting, and even configuration from a mainframe console</li> <li>• Lets you view, activate, and deactivate SNA devices from one console</li> </ul>	188
<b>Cisco Netsys SLM Suite</b>	Netsys Service-Level Management Suite (Cisco NSM) provides an integrated end-to-end network management solution combined with service-level management <ul style="list-style-type: none"> <li>• Won Infoworld's Product of the Year award for Network Software</li> <li>• Consists of two core modules: the enhanced Connectivity Service Manager and Performance Service Manager</li> </ul>	190
<b>Cisco Netsys Baselineer</b>	Netsys Baselineer for Windows NT displays, debugs, and validates your network configuration <ul style="list-style-type: none"> <li>• Lets you test configurations and changes offline before committing them to the live network</li> <li>• Allows you to visually navigate your network and gain a complete understanding of how it works</li> </ul>	192
<b>Cisco SwitchProbe Series</b>	A family of standalone, enhanced RMON probes for monitoring any segment, ring, or link in an enterprise network <ul style="list-style-type: none"> <li>• Employs powerful remote monitoring (RMON) agent technology that monitors network traffic at all seven layers</li> <li>• Enables users to analyze network traffic patterns, troubleshoot protocol-related problems, set up proactive alarms to detect problems before they affect users, and perform trend analysis for long-term planning</li> </ul>	193
<b>Cisco Element Management Framework (EMF)</b>	New common element management layer of the Cisco Service Management (CSM) system provides a highly scalable framework designed to support carrier-class element managers across Cisco's service provider product lines <ul style="list-style-type: none"> <li>• Flexible, modular model allows service providers to install the mix of element managers they need to support their dynamic businesses</li> <li>• Enables rapid development and deployment of new element managers, permitting service providers to more rapidly introduce and manage new services</li> </ul>	196
<b>Cisco Info Center (CIC)</b>	Service-level monitoring and diagnostics tool that provides network fault and performance monitoring, trouble isolation, and real-time service-level management for large networks <ul style="list-style-type: none"> <li>• Helps operators focus on important network events, offering a combination of alarm reduction rules, filtering, customizable alarm viewing, and partitioning</li> <li>• Provides a highly configurable client/server application that can consolidate, de-duplicate, filter, and correlate fault information from a wide range of management platforms and technologies</li> </ul>	198
<b>Cisco Provisioning Center (CPC)</b>	Service activation system that provisions Layer 2/Layer 3 (L2/L3) across Cisco Systems end-to-end networking technologies <ul style="list-style-type: none"> <li>• Provides an integrated, automated provisioning solution for network service providers who offer Frame Relay, ATM, Internet access, data-link switching (DSL), IP-virtual private network (VPN), quality of service (QoS) and other network services</li> <li>• Works across multiple network technologies and equipment so that operators can deploy end-to-end "services" rather than just configure "boxes." By automating the process, CPC reduces the complexity and expense associated with today's manually configured services</li> </ul>	200

## Cisco Network Management Overview

Cisco is transforming traditional network management by focusing on the strengths of Internet-based architectures for greater accessibility and simplification of network management tools, tasks, and processes. Cisco's network management strategy calls for a Web-based model with the following characteristics:

- Standards based
- Simplification of tools, tasks, and processes
- Web-level integration with NMS platforms and general management products
- Capable of providing end-to-end solutions for managing routers, switches, and access servers
- Creation of a Management Intranet by integrating discovered device knowledge with CCO and third-party application knowledge

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### Cisco Network Management Products

The CiscoWorks2000 products provide network management solutions focused on two key areas: wide-area and local-area network management. The Routed WAN Management Solution represents a significant milestone in Cisco's transitioning to a web-based model. CiscoWorks2000 packaging makes it easy for you to purchase, deploy, and stay updated. Its common user interface and web standards foundation reduces network cost and improves application integration and consistency.

- CiscoWorks2000 Routed WAN Management Solution combines new and existing Cisco applications (CiscoView, Internet Performance Monitor, Access Control List Manager, Traffic Director, and RME) to provide a full set of tools for monitoring the routed WAN elements in a network. The routed WAN solution uses an enhanced browser-based client and web-based management server to integrate its individual applications. The CiscoWorks2000 server and desktop provide a user interface for management applications, and allows other Cisco, third-party, or user-developed web-based tools to be integrated into the desktop.
- CiscoWorks2000 Campus Bundle combines Resource Manager Essentials (RME) with CWSI Campus to provide strong Catalyst and layer 2 and 3 switched network management. It also provides CiscoView, device inventory management, configuration tools, and device software updating.
- User Registration Tool (URT) is an add-on to the Campus Bundle and solves many of the day-to-day mobility problems within a campus. It creates user registration policy bindings for policy registration, mobility, and tracking.
- CiscoWorks Windows (CWW) is a suite of PC-based network configuration and diagnostic tools for small-to-medium-sized networks. Easy to use and install on a laptop, CWW is ideal for departmental users, branch offices, and mobile network managers.

Cisco network management tools also include other important applications and products such as CiscoWorks Blue, NetSys, and SwitchProbes.

## Routed WAN Management Solution

The CiscoWorks2000 Routed WAN Management Solution is a comprehensive set of management tools that help you to configure, monitor, manage, and troubleshoot router devices in a wide area network (WAN). Its traffic tool can monitor statistics collected via our LAN, WAN and RMON probes. The Routed WAN Management Solution can be deployed “standalone” or “alongside” existing NMS products, thus reducing the complexities of deploying both in the same network. These products comply with Internet standards and can be used to create a Management Intranet framework for integrating other browser-based management tools. They also offer a “load-n-launch” interface with third-party solutions.

CISCOWORKS2000  
Routed WAN Management Solution




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### When to Sell

#### Sell This Product

##### Routed WAN Management Solution

#### When a Customer Needs These Features

- Optimize route performance by automatically streamlining access control lists, and applying policy-based changes via templates
- Understand the responsiveness of WAN connections to determine where bottlenecks are; provides real-time analysis of end-to-end hop delays
- Increase network performance by monitoring traffic of protocols, applications, and interface characteristics
- A watchdog system to monitor WAN characteristics
- An accurate inventory baseline; including memory, slots, software versions, and boot ROMs needed to make decisions
- Automate the process of updating device software and configuration
- A browser to graphically display a device's components and operational status while monitoring its activity or changing its configurations

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### Key Features

- Access Control List Manager 1.1—provides a wizard- and template-based approach to simplifying the setup, management and optimization of Cisco IOS-based IP and IPX traffic filtering and device access control
- TrafficDirector 5.7.2—a comprehensive network traffic monitoring and troubleshooting application
- Internetwork Performance Monitor 2.0—a network response time and availability monitoring application
- Resource Manager Essentials 3—a powerful suite of web-based network management solutions for small to large-scale Enterprise networks
- CiscoView 5.0—a new Web version of Cisco's graphical device management application

## Specifications

Feature <sup>1</sup>	Routed WAN Management Solution Requirements
<b>System Hardware</b>	Sun SPARC Ultra 20 or higher, or Wintel 400 MHz or higher 17-inch color monitor CD-ROM drive
<b>Memory (RAM)</b>	256 MB minimum; additional memory is required to host multiple RWAN applications on a single machine, and for large networks
<b>Available Drive Space</b>	2 GB on the installation partition; additional disk space is needed for RWAN applications that keep historical logs
<b>System Software</b>	Solaris 2.6 with required patches: 105181-15, 105210-17, 105490-05, 105529-07, and 105568-13 Microsoft Windows NT 4.0 server or NT 4.0 workstation with Service Pack 5
<b>Client / Browser</b>	Netscape 4.6.1 with Windows NT 4.0, Solaris 2.6 or 2.5.1, HP-UX 10.10, 10.20, or 11.0, or AIX 4.2.1 or 4.3 Microsoft Internet Explorer 5.0 preferred on Windows NT 4.0—with Java, Javascript, and Active-X enabled
<b>Supported Devices</b>	Most Cisco IOS routers, access servers, hubs, and switches; specific devices supported by RWAN applications are available on the Cisco Software Support Center web site under each products Planner Page
<b>Supported Cisco IOS Versions</b>	Generally supports Cisco IOS Versions 10.3 and above; Catalyst Supervisor code 2.1 and above. Testing focused on Y2K certified versions
<b>NMS Co-Existence Support</b>	RWAN applications that have NMS integration points support the following NMS: <ul style="list-style-type: none"> <li>• HP OpenView 5.01, 6.0 on HP-UX, Solaris</li> <li>• HP OpenView 5.02 and 6.0 on NT</li> <li>• NetView 5.1 on NT and AIX</li> </ul>
<b>General Environment</b>	Resource Manager Essentials 3.0 CANNOT be run on the same workstation as CWSI Campus 2.x. CWSI Campus 2.x cannot run on RME 3.0 IPM ships in both Solaris and NT versions of Routed WAN Management Solution products. However, IPM server components are available only for Solaris; the IPM client supports Windows 95/98/NT and Solaris workstations

1. This table contains general system requirements for the CiscoWorks2000 management server and its client components. System requirements will increase depending on how individual RWAN applications are installed. For more detailed system requirements and recommendations for tuning the management system for performance, refer to individual RWAN application's installations guides and release notes.

## Ordering Information and Channel Part Numbers

### Cisco Routed WAN Management Solution<sup>1</sup>

CWRW-1.0-SOL	For Solaris 2.6: CiscoWorks2000 Routed WAN Management Solution includes CiscoView-web 5.0, RME 3.0, TrafficDirector 5.7.2, ACL Manager 1.1, and IPM 2.0
CWRW-1.0-NT	For Windows NT 4.0: (IPM in this package requires a Solaris server) CiscoWorks2000 Routed WAN Management Solution includes CiscoView-web 5.0, RME 3.0, TrafficDirector 5.7.2, ACL Manager 1.1, and IPM 2.0
CWRW-1.0-SOL-P1	For Solaris 2.6: Routed WAN Management Solution PROMOTION. Offered to customers who have: 1) CiscoWorks2000 Campus bundle and want to add RWAN <or> 2) ACL Manager 1.0 and want to migrate. <or> 3) IPM and want to migrate. Includes full RWAN product, promotion offered through Mar.2000. (discountable)
CWRW-1.0-NT-P1	For Windows NT 4.0: (IPM in this package requires a Solaris server) Routed WAN Management Solution PROMOTION. Offered to customers who have: 1) CiscoWorks2000 Campus bundle and want to add RWAN <or> 2) ACL Manager 1.0 and want to migrate. <or> 3) IPM and want to migrate. Includes full RWAN product, promotion offered through Mar. 2000. (discountable)
CWRW-1.0-SOL-EXC	Exchanges NT version for Solaris version: Operating system exchange program. Allows an existing RWAN customer to trade-in their RWAN 1.0 product running on one OS for the same product on the other OS. Cannot be used to upgrade from other products. (not discountable)
CWRW-1.0-NT-EXC	Exchanges Solaris version for NT version: (IPM in this package requires a Solaris server) Operating system exchange program. Allows an existing RWAN customer to trade-in their RWAN 1.0 product running on one OS for the same product on the other OS. Cannot be used to upgrade from other products. (not discountable)

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the Routed WAN Management Solution Web site: <http://www.cisco.com/go/rwan>

## Campus Bundle

The CiscoWorks2000 Campus Bundle is a comprehensive management solution for managing Cisco routers and Catalyst and LightStream switches. This bundle offers two suites of applications:

CISCOWORKS2000  
Campus Bundle



- CWSI Campus provides extensive switched network discovery and display, configuration, RMON/RMON2 traffic, and LAN/WAN performance management capabilities on a device and network-wide basis.
- Resources Manager Essentials provides device management tools to streamline the tasks of managing network inventory and device changes, archiving and searching configuration files, and rapidly deploying new software images. Essentials also helps troubleshoot the basic connectivity status of network devices and provides information for hardware capacity planning.

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### When to Sell

#### Sell This Product

##### Campus Bundle

#### When a Customer Needs These Features

- An accurate inventory baseline; including memory, slots, software versions, and boot ROMs
- Automated process of updating device software and configuration to reduce the time and errors involved in network updates
- Browser-accessible, graphical tool for configuring and monitoring Cisco device components and operational status.
- VLAN, ATM, or LANE service management tools
- RMON traffic monitoring and analysis capability
- Ability to track users in the network
- Support for Catalyst and LightStream switches

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### Key Features

- CWSI Campus
  - Easier management of ATM and LANE services
  - Greater visibility into network traffic patterns
  - Graphical display of the physical devices and links in your network
  - CiscoView, a graphical device management applet, gives users a consistent interface across Cisco devices
- Resource Manager Essentials
  - Manages routers, switches, access servers, and SNMP devices
  - Anytime, anywhere access to Cisco management tools
  - Automation and wizard-based management for simpler, error-free software deployment
  - Direct Cisco Connection Online (CCO) services and support
  - Network change reports, troubleshooting tools, and critical-status notification

## Specifications

Feature	Description
<b>Server Hardware</b>	System: Sun SPARC Ultra 10 or higher, HP9000 Series 700 or higher, IBM RS/6000 Series 390 or higher, Wintel PC 266MHz or higher Memory: 256 MB minimum; if RME installed standalone 192 MB minimum Available Disk: 4 GB minimum; if RME installed standalone 2GB minimum
<b>Server Software</b>	Solaris 2.6 or Solaris 2.5.1 (with 103738-xx patch installed) Microsoft Windows NT 4.0 server or NT 4.0 workstation with service pack 4 or 5 AIX 4.2.1 or 4.3 HP UNIX 10.2 or 11.0 Campus bundle applications can co-exist with the following NMS products, none is required <ul style="list-style-type: none"> <li>• HP OpenView 5.01 or 6.0</li> <li>• CiscoWorks 3.2 or 4.0</li> <li>• CWSI 2.1.1 or 2.2</li> <li>• SunNet Manager 2.2.3 and 2.3, Solstice 2.0</li> <li>• Tivoli NetView 4.1</li> </ul>
<b>Client</b>	The CWSI Campus client runs from the server the product is loaded on. RME uses a browser client and its requirements are: Netscape 4.05 or 4.5 with Windows NT 4.0, Windows 95, Solaris 2.6, or 2.5.1, HP-UNIX 10.10, 10.20, 11.0 or AIX 4.2.1, 4.3 Microsoft Internet Explorer 4.0.1 with Windows NT4.0 or Windows 95 and Service Pack 5 Java Javascript, Active-X enabled, and Active Desktop disabled
<b>Supported Cisco Devices</b>	Most Cisco IOS routers, access servers, hubs, and switches
<b>Supported Cisco IOS Versions</b>	Generally Cisco IOS Versions 10.3 and higher Catalyst Supervisor code 2.1 through 4.1
<b>General Environment</b>	Resource Manager Essentials 3.0 CANNOT be run on the same workstation as CWSI Campus 2.x. CWSI Campus 2.x cannot run on RME 3.0

## Ordering Information and Channel Part Numbers

### CWSI Campus Bundle<sup>1</sup>

CWE+C-NT-COMB1	CWSI Campus 2.4 bundled with Essentials 2.2 for NT
CWE+C-SOL-COMB1	CWSI Campus 2.4 bundled with Essentials 2.2 for Solaris
CWE+C-AIX-COMB1	CWSI Campus Bundle w/Resource Manager Essentials for AIX Resource Manager
CWE+C-UX-COMB2	CWSI Campus Bundle w/Resource Manager Essentials for HP-UX

### CWSI to Campus Upgrades

CWE+C-NT-UPG1	Upgrade from CWSI 2.x, CW4 to Campus Bundle NT
CWE+C-NT-UPG2	Upgrade from CWSI 1.x ATMDir, VlanDir to Campus Bundle NT
CWE+C-SOL-UPG1	Upgrade from CWSI 2.x, CW4 to Campus Bundle Solaris
CWE+C-SOL-UPG2	Upgrade from CWSI 1.x ATMDir, VlanDir to Campus Bundle Solaris
CWE+C-AIX-UPG1	Upgrade from CWSI 2.x, CW4, CWW, AIX to Campus Bundle AIX
CWE+C-AIX-UPG2	Upgrade from CWSI 1.x ATMDir, VlanDir to Campus Bundle AIX
CWE+C-UX-UPG1	Upgrade from CWSI 2.X or CiscoWorks 4.X for HP-UX
CWE+C-NT-EXC	Moves Campus Bundle users from existing OS to Campus for NT
CWE+C-SOL-EXC	Moves Campus Bundle users from existing OS to Campus for Solaris
CWE+C-AIX-EXC	Moves Campus Bundle users from existing OS to Campus for IBM AIX
CWE+C-UX-EXC	Moves Campus Bundle users from existing OS to Campus for HP-UNIX

### Maintenance Releases<sup>2</sup>

CWE+C-NT-MAINT1	Maintenance for RME 2.0 and Campus 2.2 for NT; provides required year 2000 updates
CWE+C-NT-MAINT2	Maintenance #2 for RME 2.0/2.1 and Campus 2.2/2.3 for NT; provides Maint#1 and additional general product enhancements
CWE+C-SOL-MAINT1	Maintenance for RME 2.0 and Campus 2.2 for Solaris; provides required year 2000 updates
CWE+C-SOL-MAINT2	Maintenance #2 for RME 2.0/2.1 and Campus 2.2/2.3 for Solaris; provides Maint#1 and additional general product enhancements
CWE+C-AIX-MAINT1	Maintenance for RME 2.0 and Campus 2.2 for AIX; provides required year 2000 updates
CWE+C-AIX-MAINT2	Maintenance #2 for RME 2.0/2.1 and Campus 2.2/2.3 for AIX; provides Maint#1 and additional general product enhancements
CWE+C-UX-MAINT1	Maintenance for RME 2.0 and Campus 2.2 for HP-UX; provides required year 2000 updates
CWE+C-AIX-MAINT2	Maintenance #2 for RME 2.0/2.1 and Campus 2.2/2.3 for HP-UX; provides Maint#1 and additional general product enhancements

### CWSI Campus Basic Maintenance

CON-SNT-PKG12	SMARTnet Maintenance for CWSI
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1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)
2. This maintenance release contains updates for both Resource Manager Essentials and CWSI Campus, but only applies updates to the products it finds installed.

## For More Information

For Resource Manager Essentials, see: <http://www.cisco.com/go/crm>

For CWSI Campus, see: <http://www.cisco.com/go/cwsi>

For complete Campus Bundle Device Compatibility Matrix, see:  
[http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/c2\\_4.htm](http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/c2_4.htm)

## CiscoWorks2000 User Registration Tool (URT)

User Registration Tool (URT) actively identifies users within the network and creates user registration policy bindings for policy registration, mobility, and tracking. URT solves many of the day-to-day mobility problems within a campus by ensuring that each user is appropriately associated with their authorized



subnet/VLAN and that they all receive IP addresses that correspond to the logical groups to which they belong. URT offers dynamic links into Cisco's real-time network management tracking software (CiscoWorks2000 CWSI Campus) for quick pinpointing of users' locations. These network management links significantly reduce the time it takes to resolve problems within both the help desk and the network operations groups. URT is essential for companies that have highly dynamic, constantly changing work environments, and require control over changes with respect to their logical workgroup associations.

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### When to Sell

#### Sell This Product

##### User Registration Tool

#### When a Customer Needs These Features

- Ability to better manage campus user mobility with logical access security
- Better management of walk-computing environments
- End node tracking via login name look-up utilities

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### Key Features

- Automated switch port configuration for users logging into the network
- Integration with Microsoft NT and Netware NDS
- Links into CiscoWorks2000 Campus's User Tracking application for quick identification of user locations by their login names
- Fully redundant architecture, which is essential for ensuring continuous 4 x 7 successful login and switch port reconfiguration
- Fully scalable for large networks
- Broad range of Catalyst switches supported

## Specifications

### User Registration Tool<sup>1</sup> Description

<b>Supported Cisco Products</b>	Catalyst Switch Family System Operating Software Version Catalyst 1900 Series with System Software Version 8.01.02(5) Catalyst 2820 with System Software Version 8.01.02(5) Catalyst 2900XL Series with System Software Version 11.2(8) SA5 Catalyst 2926 Series with System Software Version 3.3 Catalyst 2948G with System Software Version 5.1(1) Catalyst 3500XL with System Software Version 11.2(8)-SA6 Catalyst 4000 Series with System Software Version 5.1(1) Catalyst 5000 Series (including 5002 and 5500) with System Software Version 4.3(1a) Catalyst 6000 with System Software Version 5.3(1)
<b>CWSI Campus Requirements</b>	CiscoWorks2000 CWSI Campus 2.3 and 2.4
<b>Microsoft Client Software Requirements</b>	DHCP-enabled Windows 95, Windows 98, and Windows NT clients
<b>Microsoft Server Requirements</b>	Microsoft 4.0 server running SP 4 or 5, PDCS-enabled, WINs
<b>Novell NDS Server Requirements</b>	Novell NetWare 5.0 running the IP stack with the Z.E.N. Works Starter pack
<b>DHCP Server Requirements</b>	Microsoft DHCP server (NT 4.0) American Internet DHCP server (Versions 1.2 and 2.0) Cisco CDDM DHCP server Cisco Network Registrar DHCP server

1. URT requires the following: 1) VMPS client-enabled, 2) Catalyst end-user ports configured as "dynamic ports"

## Competitive Products

- 3Com: Transcend
- Xylan: Xvision/Switched Network Services

## Distribution Part Numbers and Ordering Information

### User Registration Tool<sup>1</sup>

URT-1.2-WIN-NT	URT add-on to Campus Bundle for Windows NT 4.0
URT-1.2-WIN-NT-UPG	URT add-on to Campus Bundle; upgrade from 1.1 to 1.2 for NT; includes Documentation & CD

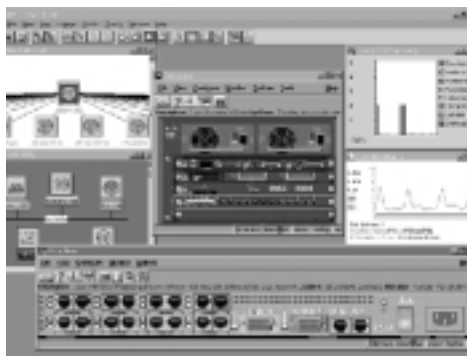
1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

## For More Information

See the User Registration Tool Web site: <http://www.cisco.com/go/urt>

## CiscoWorks Windows

CiscoWorks Windows is comprehensive network management software that provides a powerful set of tools to easily manage your small to medium network or workgroup. Information such as dynamic status, statistics, and comprehensive configuration information is available for Cisco routers, switches, hubs, and access servers. Using WhatsUp Gold from Ipswitch, you can also monitor printer, workstations, servers and important network services.




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### When to Sell

#### Sell This Product

##### CiscoWorks Windows

#### When a Customer Needs These Features

- A single solution for managing all resources attached to a multivendor network
- A smaller solution that fits on a laptop or shared workstation
- Low-cost network management

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### Key Features

CiscoWorks Windows provides the following features when used in conjunction with WhatsUp Gold from Ipswitch (included in the CWW box):

- Automatic discovery process for networked devices
- Management of network hardware, printers, servers and workstations
- Customizable monitoring of services such as FTP and HTTP
- Access to extensive data on port status, bandwidth utilization, traffic statistics, protocol information, and other network performance statistics
- Flexible graphing capabilities for quickly recording and analyzing historical data that can be exported to files
- Management Information Base (MIB) compiler and browser for managing third-party SNMP devices
- Tools to simplify device configuration and management for Cisco routers, switches, hubs, and access servers
- Threshold management features that can be set for many performance variables to generate an alarm or event notification
- Flexible event notification, including voice, paging and email notification of user-defined events

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## CiscoWorks Windows Components

CiscoWorks Windows comprises of the following tools:

- WhatsUp Gold from Ipswitch, Inc.—Provides network discovery, mapping, monitoring, and alarm tracking
- CiscoView—Provides back- and front-panel displays; dynamic, color-coded graphical displays simplify device-status monitoring, device-specific component diagnostics, and application launching
- Threshold Manager—Enhances the ability to set thresholds on Cisco RMON-enabled devices, reducing management overhead and improving troubleshooting capabilities
- StackMaker—Allows users to combine multiple Cisco devices of specific types into a single stack and visually manage them in a single window
- Show Commands—Displays detailed router system and protocol information without requiring the user to remember complex IOS command-line languages or syntax

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## Specifications

Feature	CiscoWorks Windows
<b>Hardware Requirements</b>	166 MHz Pentium-based IBM PC or compatible computer 64-MB RAM total 500 MB free hard drive space, 1 GB free hard drive space recommended CD-ROM drive for installation
<b>Software Requirements</b>	Windows 95, Windows 98 or Windows NT 4.0 Netscape 4.61 or Internet Explorer 5.0 for displaying online help

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## Competitive Products

- 3Com: Transcend Network Management for Windows
- Bay Networks/Nortel: EX Internetwork and EZLAN
- Cabletron: Spectrum Element Manager

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## Distribution Part Numbers and Ordering Information

### CiscoWorks Windows<sup>1</sup>

CWW-5.0

CiscoWorks for Windows, version 5.0

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the CiscoWorks Windows Web site: <http://www.cisco.com/go/cwwin>

# CiscoWorks Blue<sup>1</sup>

The CiscoWorks Blue suite of applications provide the management tools required to help customers make the transition from legacy networks to multiprotocol networks, including IP. The different tools support different platforms, so whether customers want to manage from the mainframe, from UNIX, or from the Web, there is a CiscoWorks Blue solution for their needs,

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## When to Sell

### Sell This Product

#### CiscoWorks Blue Internetwork Status Monitor

### When a Customer Needs These Features

- Router management from the mainframe
- Status at a glance
- Channel Interface Protocol (CIP) and Channel Port Adapter (CPA) management

#### CiscoWorks Blue Maps

- Graphical management of IBM SNA/IP Protocols (remote source-route bridging [RSRB], data-link switching [DLSw], Advanced Peer-to-Peer Networking [APPN])
- Status at a glance

#### CiscoWorks Blue SNA View

- SNA Session Management from the Web
- Correlation of virtual telecommunications access method (VTAM) information with IP information to show end-to-end connectivity

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## Key Features

- Visibility, management, and control of Cisco devices from the mainframe
- Graphical displays of SNA sessions running over Cisco devices
- Correlation of SNA sessions with MAC-level information in the routed network

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

<b>Feature</b>	<b>CiscoWorks Blue Internetwork Status Monitor</b>	<b>CiscoWorks Blue Maps</b>	<b>CiscoWorks Blue SNA View</b>
<b>Platform Compatibility</b>	Tivoli Netview for OS/390 IBM Netview for MVS SOLVE: Netmaster for TCP/IP SOLVE: Netmaster	Solaris HP-UX AIX	Solaris HP-UX AIX
<b>Supported Cisco Products</b>	Routers running Cisco IOS software Release 11.0 or above	Routers running Cisco IOS software Release 11.0 or above, configured with RSRB, DLsw, or APPN	Routers running Cisco IOS software Release 11.0 or above, configured with RSRB, DLsw, or APPN  Cisco TN3270 Servers for CIP and CPA
<b>Software Requirements</b>	IBM Netview for MVS 2.4 or above Tivoli NetView for OS/390 Sterling SOLVE: Netmaster 3.1 or above Sterling SOLVE: Netmaster for TCP/IP: all releases	AIX Version 4.2.1 or 5.0 Solaris 2.5.1 or 2.6 HP-UX 10.20 or 11.0 HP OpenView 5.0, 5.01, 5.03, or 6.0 (optional) SunNet Manager 2.2.3 or 2.3 (optional) NetView for AIX 4.1 or 5 (Tivoli NetView) (optional) VTAM 4.1 or above	AIX Version 4.2.1 or 5.0 Solaris 2.5.1 or 2.6 HP-UX 10.20 or 11.0 HP OpenView 5.0, 5.01, 5.03, or 6.0 (optional) SunNet Manager 2.2.3 or 2.3 (optional) NetView for AIX 4.1 or 5 (Tivoli NetView) (optional) VTAM 4.1 or above

## Competitive Products

These products have no direct competition.

## For More Information

See the CiscoWorks Blue Web site: <http://www.cisco.com/go/cwblue>

## Cisco Netsys SLM Suite<sup>1</sup>

Now you can manage all aspects of network connectivity and performance with a single service-level management solution. Cisco's Netsys Service-Level Management Suite makes it easy to understand the inner workings of your network so that you can quickly solve problems and optimize performance. Together, the two modules—Connectivity Service Manager and Performance Service Manager—provide a complete, end-to-end, scalable solution that grows with your requirements, helping you solve your key network management challenges today and positioning you to take full advantage of future innovations.

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### When to Sell

#### Sell This Product

**Netsys Connectivity Service Manager V.4.1**

**Netsys Performance Service Manager V.4.1**

#### When a Customer Needs These Features

- Manage and optimize your network's connectivity, security, and reliability—end to end

- End-to-end performance analysis for problem solving, capacity planning, and service-level management

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### Key Features

- Defines, monitors, and assesses service-level policies
- Troubleshoots connectivity and performance problems
- Checks for over 100 common yet difficult-to-isolate configuration problems
- Gives you the big picture instantly, allowing you to visually navigate your network and gain a complete understanding of how it works
- Graphically plans data, routing, protocol, and topology changes
- Performs capacity, redundancy, and topology analysis
- Proactively monitors configuration changes

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	Connectivity Service Manager V.4.1	Performance Service Manager
<b>Platform Compatibility</b>	Integration with CiscoWorks and CiscoView	Not required
<b>Supported Cisco Products</b>	<p>LAN topologies: Ethernet, Fast Ethernet, Token Ring, FDDI, ATM interface</p> <p>WAN connectivity: Serial, HSSI, BRI, Frame Relay, IP unnumbered, SDMS, X.25, async, dialer channelized T1</p> <p>Data protocols: P, IPX, SNA, AppleTalk, VINES, DECnet</p> <p>Routing protocols: Routing Information Protocol (RIP), Interior Gateway Routing Protocol (IGRP), Enhanced IGRP (EIGRP), Open Shortest Path First (OSPF), IPX-RIP, source-route bridging (SRB), RSRB, DLSw+, Border Gateway Protocol (BGP), Intermediate System-to-Intermediate System (IS-IS) (IP)</p> <p>Device Support: All Cisco IOS-based routers, Catalyst 5000 and 5500 switching products</p>	<p>Same as Connectivity Service Manager plus:</p> <p>Cisco IOS IP/IPX accounting support; Cisco Switch Probes (RMON2); Built-in router performance modes for 7500, 7200, 7000, 7000/RSP, 4700, 4500, 2500, 1005, and AS5100/5200; and Cisco Netflow Accounting Data</p>
<b>Software Requirements</b>	<p>SunOS 4.1.3/4.1.4, Solaris 2.5/2.6, Solaris-J</p> <p>IBM-AIX 4.1.5,</p> <p>HP-UX 10.x</p> <p>CWSI V.1.3 switch support</p> <p>Java-enabled Web browser</p>	Netsys Connectivity Service Manager

## Competitive Products

These products have no direct competitors.

## For More Information

See the Cisco Netsys SLM Web site: <http://www.cisco.com/go/nsllms4>

## Cisco Netsys Baseliner

Avoid costly network configuration problems—have your network checked by Netsys! Fixing network problems is expensive and time-consuming. The combination of costly downtime and time-consuming fault isolation and repair can bring a business to its knees. Geographically dispersed networks amplify the problem because the length and expense of downtime often increase, and fixing the problem can require travel. Most reported network problems are configuration related. More than 40 percent of technical support calls involve device misconfigurations. As the number of routers grows, configuration problems become harder to detect and avoid. The result is either operational or latent configuration problems.

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### When to Sell

#### Sell This Product

##### NetSys Baseliner

#### When a Customer Needs These Features

- Avoid costly network configuration problems by safely testing configurations offline before committing them to the live network
- Network configuration troubleshooting

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### Key Features

- Creates a model of your network and checks for more than 100 common yet difficult-to-isolate configuration problems
- Gives you the “big picture” instantly, allowing you to visually navigate your network and gain a complete understanding of how it works
- Proactively monitors configuration changes

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### Specifications

Feature	Netsys Baseliner V.4.1
<b>Platform Compatibility</b>	Not required
<b>Supported Cisco Products</b>	LAN topologies: Ethernet, Fast Ethernet, Token Ring, FDDI, ATM interface WAN connectivity: Serial, HSSI, BRI, Frame Relay, IP unnumbered, SDMS, X.25, async, dialer, channelized T1. Data protocols: P, IPX, SNA, AppleTalk, VINES, DECnet Routing protocols: RIP, IGRP, BGRP, OSPF, IPX-RIP, SRB, RSRB, DLSw+, BGP, IS-IS (IP) Device support: All Cisco IOS-based routers
<b>Software Requirements</b>	Windows NT workstation and server Java-enabled Web browser
<b>Service Number</b>	11

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### Part Numbers and Ordering Information

#### Cisco Netsys Connectivity Tools<sup>1</sup>

BASE-4.0-UNL-NT	Netsys Baseliner 4.0. Unlimited Routers, Win NT
ENM-2.0-NT	Resource Manager Essentials, CWSI Campus, and Netsys Baseliner for Windows NT
CON-SNT-PKG11	SMARTnet Maintenance

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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### For More Information

See the Cisco Netsys Baseliner Web site: <http://www.cisco.com/go/baseliner>

## Cisco SwitchProbe Series<sup>1</sup>

Cisco Systems offers a complete family of dedicated, enhanced LAN, WAN, and ATM Remote Monitoring (RMON) probes for comprehensive, end-to-end, seven-layer monitoring of an enterprise network. SwitchProbe products provide a powerful distributed management architecture for performing application flow management, traffic analysis and troubleshooting, trend reporting, and proactive network management. The real-time traffic analysis and trend reporting capabilities of SwitchProbe devices provide visibility into network behavior for long-term planning. They provide the diagnostic information needed for troubleshooting the Media Access Control (MAC), network, or application-layer problems before they can affect network availability. The probes' network-based thresholding and alarm capabilities provide an early warning system to improve network reliability and availability.



### When to Sell

Sell This Product	When a Customer Needs These Features
<b>Ethernet Probes</b>	Monitoring Catalyst Ethernet switch ports
<b>Fast Ethernet Probes</b>	Monitoring Catalyst Fast Ethernet switch ports and Fast Ethernet links, Half Duplex for SPAN and Full Duplex for Catalyst interswitch and server links
<b>Gigabit Ethernet Probes</b>	Monitoring Catalyst Gigabit Ethernet switch ports and Gigabit Ethernet network core, enterprise backbone, and server links
<b>Token Ring Probes</b>	Monitoring Catalyst Token Ring switch ports
<b>WAN Probes</b>	Monitoring fractional, full, or channelized T1 and E1 WAN links (supports the following encapsulated protocols: Cisco HDLC, Digital HDLC, Proteon HDLC, PPP, Frame Relay, Annex G, X.25, SMDS-DX)
<b>HSSI Probes</b>	Monitoring T3 links
<b>FDDI Probes</b>	Monitoring FDDI rings (single or dual)
<b>ATM Probes</b>	Monitoring DS-3 or OC-3 ATM links (supports the following additional standards: LANE 1.0 and 2.0; Classical IP [RFC 1577]; MPOA [RFC 1483]; and UNI 3.0, 3.1, and 4.0)

### Key Features

- Support of Internet Engineering Task Force (IETF) RMON and RMON2 standards RFC 1757, 1513, 2021, and 2074, as well as emerging standards for High-Capacity RMON, ATM RMON, and Switch Monitoring
- Compatible with SNMP-based network management systems
- Out-of-band or side-band access to management data
- Remote configuration support via BOOTP and Trivial File Transfer Protocol (TFIP)
- Automatic logging of statistical data for trend analysis and reporting
- Selective packet capture and seven-level protocol decode functionality with pre- and post-capture filters
- Flash memory for easy software upgrades

1. For ordering information on this product, contact your Cisco Account Team.

## Specifications

Feature	SwitchProbe
<b>Management</b>	The probes can be managed through a serial out of band or an Ethernet or Token Ring sideband. For example, the Fast Ethernet probe comes standard with Fast Ethernet Interface(s) for monitoring Fast Ethernet ports and an Ethernet sideband used for managing the probes.
<b>Ports</b>	One serial console port (RS-232-C Type) One remote port (RS-232-C Type)
<b>Interfaces</b>	Ethernet interface—15-pin D-type 10Base5 (Thicknet), BNC 10Base2 (Thinnet), RJ-45 10BaseT Token Ring interface—9-pin D-type (Type 1), RJ-45 (Type 2) FDDI interface—Single (SAS) or dual (DAS) SC-type connectors for SC-to-SC or SC-to-MIC 62.5/125-micron multimode, fiber-optic cable 100BaseTX interface—RJ-45 for Category 5 UTP or Category 5 sheath-shielded TP with TP-MIC plug 100BaseFX interface—SC-type connector for SC-to-SC, ST-to-SC, or SC-to-MIC 62.5/125-micron fiber-optic cable Gigabit Ethernet interface—SC-type connector (fiber optic) WAN interface—26-pin D-type supports connections to V35, X.21, RS-449, and EIA-530 HSSI interface—26-pin, D-type SCSI II connectors externally clocked up to T3/E3 speed DS-3 ATM interface—DB-15 connector (supports connection to DS-3 ATM Tap) OC-3 ATM interface—OC-3 multimode fiber twin connector
<b>Additional, Separately Priced, Agent Options</b>	Application Response Time (ART) Monitor Agent—Extends RMON2 standards to measure delays between request/response sequences in application flows for popular applications, such as the HTTP and FTP Fast EtherChannel (FEC) Monitor Agent—Enables the Four Port Fast Ethernet SwitchProbe to aggregate data from two full-duplex, Fast Ethernet links, thus providing a consolidated view of traffic flows between the Catalyst switches NetFlow Monitor Agent—Provides detailed traffic statistics on Cisco NetFlow-enabled routers and Catalyst switches with a NetFlow Feature Card (NFFC) Resource Monitor Agent—Provides remote monitoring of LAN and WAN system resources via distributed polling and threshold monitoring VLAN Monitor Agent—Enables the user to drill down to obtain host and conversation information on a per-VLAN basis

## Part Numbers and Ordering Information

### SwitchProbes<sup>1</sup>

WS-PB6-1ETH-8	1-port Ethernet, 8 MB
WS-PB6-1ETH-16	1-port Ethernet, 16 MB
WS-PB6-2ETH-16	2-port Ethernet, 16 MB
WS-PB8-4ETH-32	4-port Ethernet, Ethernet sideband, 32 MB
WS-PB8-8ETH-64	8-port Ethernet, Ethernet sideband, 64 MB
WS-PB6-1TR-8	1-port Token Ring, 8 MB
WS-PB6-1TR-16	1-port Token Ring, 16 MB
WS-PB8-SFDDIETH-32	FDDI (SAS) and Ethernet, 32 MB
WS-PB8-DFDDIETH-32	FDDI (DAS) and Ethernet, 32 MB
WS-PB8-1FEHD-TX-32	1-port Fast Ethernet, half duplex, 100BaseTX, Ethernet sideband, 32 MB
WS-PB8-2FEHD-TX-32	2-port Fast Ethernet, half duplex, 100BaseTX, Ethernet sideband, 32 MB
WS-PB8-1FEFD-TX-32	1-port Fast Ethernet, full duplex, 100BaseTX, Ethernet sideband, 32 MB
WS-PB8-4FE-TX-64	4-port Fast Ethernet, 100BaseTX, Ethernet sideband, 64 MB
WS-PB8-1FEHD-FX-32	1-port Fast Ethernet, half duplex, 100BaseFX, Ethernet sideband, 32 MB
WS-PB8-2FEHD-FX-32	2-port Fast Ethernet, half duplex, 100BaseFX, Ethernet sideband, 32 MB
WS-PB8-1FEFD-FX-32	1-port Fast Ethernet, full duplex, 100BaseFX, Ethernet sideband, 32 MB
WS-PB8-4FE-FX-64	4-port Fast Ethernet, 100BaseFX, Ethernet sideband, 64 MB
WS-PB8-2GE-SX-M-64	2-port Gigabit Ethernet, 1000BaseSX (MMF), Ethernet sideband, 64 MB
WS-PB8-2GE-LX-M-64	2-port Gigabit Ethernet, 1000BaseLX (MMF), Ethernet sideband, 64 MB
WS-PB8-2GE-LX-S-64	2-port Gigabit Ethernet, 1000BaseLX (SMF), Ethernet sideband, 64 MB
WS-PB6-1WANETH-8	1-port WAN and Ethernet, 8 MB
WS-PB6-1WANETH-16	1-port WAN and Ethernet, 16 MB
WS-PB8-2WANETH-64	2-port T1/E1 WAN and Ethernet, 64 MB
WS-PB8-4WANETH-64	4-port T1/E1 WAN and Ethernet, 64 MB
WS-PB6-1WANTR-8	1-port WAN and Token Ring, 8 MB
WS-PB6-1WANTR-16	1-port WAN and Token Ring, 16 MB
WS-PB8-2WANTR-64	2-port T1/E1 WAN and Token Ring, 64 MB
WS-PB8-4WANTR-64	4-port T1/E1 WAN and Token Ring, 64 MB
WS-PB8-2T1D-ETH-32	2-port full T1/D WAN, Ethernet sideband, 32 MB

WS-PB8-4T1D-ETH-64	4-port full T1/D WAN, Ethernet sideband, 64 MB
WS-PB8-2E1D-ETH-32	2-port full E1/D WAN, Ethernet sideband, 32 MB
WS-PB8-4E1D-ETH-64	4-port full E1/D WAN, Ethernet sideband, 64 MB
WS-PB8-2CHT1ET-128	2-port channelized T1/D WAN, Ethernet sideband, 128 MB
WS-PB8-2CHE1ET-128	2-port channelized E1/D WAN, Ethernet sideband, 128 MB
WS-PB8-HSSIETH-32	HSSI and Ethernet, 32 MB
WS-PB8-ATM3ETH-64	ATM (OC-3) and Ethernet, 64 MB
WS-PB8-ATMDSETH-64	ATM (DS-3) and Ethernet, 64 MB

#### SwitchProbe Firmware Options

WS-PB-ART	Application Response Time (ART) monitor option
WS-PB-FEC-TX	Fast EtherChannel-TX (FEC) monitor option (for 4FE-TX probes only, inc. 1 WS-PB-FEFDAP-TX Kit)
WS-PB-FEC-FX	Fast EtherChannel-FX (FEC) monitor option (for 4FE-FX probes only, inc. 1 WS-PB-OPTI-SPLT1 Kit)
WS-PB-NFM	NetFlow monitor option
WS-PB-RSM	Resource monitor option
WS-PB-VLAN	VLAN monitor option

1. For the latest part number and pricing information, see the *Distribution Product Reference Guide* Web site: <http://www.cisco.com/dprg>. (Only available in some countries at this time; worldwide rollout in place.)

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## For More Information

See the Cisco SwitchProbe Web site: <http://www.cisco.com/go/switchprobe>

## Cisco Element Management Framework (EMF)

Cisco Element Management Framework (CEMF), the new common element management layer of the Cisco Service Management (CSM) system. It comprises a highly scalable framework designed to support carrier-class element managers across Cisco's service provider product lines. This flexible, modular model allows service providers to install the mix of element managers they need to support their dynamic businesses. It also enables rapid development and deployment of new element managers, permitting service providers to more rapidly introduce and manage new services.

Cisco EMF provides common interfaces and element management services to applications in the network and service management levels of CSM. Cisco's EcoSystem partners can also build third-party element management systems to provide element management support in mixed network environments.

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### When to Sell

#### Sell This Product

##### Cisco Element Management Framework

#### When a Customer Needs These Features

- Highly scalable framework designed to support carrier-class element managers across Cisco's service-provider product lines.
- Open system designed to integrate with third party product and proprietary operational support systems.

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### Key Features

Cisco Element Management Framework (CEMF):

- **Manageability**—Highly scalable framework supports carrier-class element managers across Cisco's service-provider product lines. Flexible, modular model allows service providers to install the mix of element managers they need to support their dynamic businesses. It also enables rapid development and deployment of new element managers, permitting service providers to more rapidly introduce and manage new services.
- **Scalability**—Small pilot or trial networks can be deployed and then expanded as the network and management requirements grow without degrading performance.
- **Integration**—Open system designed to integrate with third party product and proprietary operational support systems. CEMF 2.1 can be custom integrated via protocols such as SNMP and ASCII and, using application interworking applications, can be launched seamlessly via the CEMF GUI. Future releases will support CORBA interfaces.
- **Extensibility**—CEMF allows new network devices to be managed simply and easily; new management applications can be developed quickly using configuration and developers toolkits.

Cisco EMF Event Manager:

Cisco EMF Event Manager 1.1 augments the event browser capabilities of CEMF, providing concise, tailored scoreboards of element status in addition to providing powerful filtering and normalization of events from different sources.

CEMF Event Manager can be used on its own or as a preprocessor for Cisco Information Center (CIC), further scaling and tailoring the service provider's ability to deliver network fault and performance monitoring, network trouble isolation and real-time service level management for large networks.

Key Features and Benefits of CEMF Event Manager:

- A more intuitive and flexible view of current network status via user-defined Event.
- Group filters and Scoreboards.
- Notification of event status via external media such as fax, e-mail, pager.
- Sophisticated thresholding capability enabling users to capture events which may not be proactively indicated by the network. Particularly useful for network elements that do not issue a large number of SNMP traps.
- Script-based integration with other OSSs, such as the Remedy Action Request System, enabling more integrated event handling.
- Creates a model of your network and checks for more than 100 common, yet difficult-to-isolate, configuration problems.
- Gives you the “big picture” instantly, allowing you to visually navigate your network and gain a complete understanding of how it works.
- Proactively monitors configuration changes.

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## Specifications

Feature	Cisco Element Management Framework (CEMF)
<b>Platform Compatibility</b>	Event Manager needs CEMF
<b>Supported Cisco Products</b>	Cisco DSL Manager (CDM): Cisco 6400 Service Connection Manager (SCM)
<b>Software Requirements</b>	Sun Solaris 2.6 Event Manager requires CEMF

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## For More Information

See more information about Network and Element Management at:

<http://www.cisco.com/go/neman>

See more specific information on Cisco EMF and the Cisco Event Manager at:

<http://www.cisco.com/go/emf>

## Cisco Info Center

Cisco Info Center (CIC) is a service-level monitoring and diagnostics tool that provides network fault and performance monitoring, trouble isolation, and real-time service-level management for large networks. Cisco Info Center is designed to help operators focus on important network events, offering a combination of alarm reduction rules, filtering, customizable alarm viewing, and partitioning. Cisco Info Center provides a highly configurable client/server application that can consolidate, de-duplicate, filter, and correlate fault information from a wide range of management platforms and technologies.

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### When to Sell

#### Sell This Product

##### Cisco Info Center

#### When a Customer Needs These Features

- Service-level monitoring and diagnostics tool that provides network fault and performance monitoring, trouble isolation, and real-time service-level management for large networks.
- Highly configurable client/server application that can consolidate, de-duplicate, filter, and correlate fault information from a wide range of management platforms and technologies.

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### Key Features

- **Simplified operations**—By integrating alarms and events from multiple technologies and vendors into a single environment, operators only have to learn and use one platform for troubleshooting and diagnostics. Automated operation helps reduce the amount of manual effort required to resolve problems.
- **Scalable and highly distributable architecture**—Distributed client/server architecture allows for configuration of distributed multi-management domains. Data filtering and de-duplication features let operators monitor domains by workgroups, geographies, or customer ID.
- **Immediate return on investment (ROI)**—Consolidates fault data from multivendor multi-technology systems enabling efficient and timely resolution of network problems and reduced operations cost. Preprogrammed with extensive WAN-based automation rules and partitioned views to enable immediate out-of-box functionality and value.
- **Enhanced service offering**—Supports Web and Java-based service-level monitoring applications developed by service providers so end customers have ready access to their portion of the network.
- **Powerful administrative interface**—Highly customizable to suit a network manager's specific viewing requirements. Java and Web-based front-end support enables operators to use Web technologies for integrated fault management and transfer of information to customers to prove compliance with service-level agreements (SLAs).
- **Highly customizable event correlation engine**—Empowers operators to interpret data, while event-triggered actions can be configured to respond to certain behaviors automatically. Flexible combination of rules can be further enhanced dynamically, enabling creation of new automation rules

(event-triggered actions) based on observed network behavior and combination of events. This can then trigger user-defined actions such as execution of autodiagnostic scripts.

- Robust trap mechanism—Facilitates guaranteed trap delivery to ensure receipt and processing of every trap.
- Information overload—Operators must analyze numerous data to determine the status of a network element or a class of service. CIC is capable of consolidating, de-duplicating, partitioning, and correlating information and presents the core fault data in a way that is easy to interpret.
- Multivendor networks—CIC is capable of receiving multiple data streams, independent of the underlying network element technology, providing a comprehensive centralized fault management center.
- Multinetwork support—A single Cisco Info Server in Release 1.1 can support multiple Info Mediators supporting different versions of the underlying WAN networks (8.4 and 9.1).
- Y2K compliant—CIC Release 1.1 has been verified to be Y2K compliant.

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## Specifications

Feature	Cisco Info Center
<b>Platform Compatibility</b>	Administrative desktops, Info Server, Info Gateways, and Info Mediators are supported on Sun Solaris 2.6. Info Server - Ultra II or higher with a minimum of 256 MB RAM, 200 MB hard drive. Info Mediators - Ultra II or higher with a minimum of 64 MB RAM, minimum 100 MB hard drive. Info Admin Desktops - Sun workstation with a minimum of 48 MB RAM, minimum 75 MB hard drive.
Note: WAN solutions require CWM Release 9.2.	

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## For More Information

See the Cisco Info Center Web site: <http://www.cisco.com/go/cic>

## Cisco Provisioning Center

Cisco Provisioning Center (CPC) is a service activation system that provisions Layer 2/Layer 3 (L2/L3) across Cisco Systems end-to-end networking technologies. CPC provides an integrated, automated provisioning solution for network service providers who offer Frame Relay, ATM, Internet access, data-link switching (DSL), IP-virtual private network (VPN), quality of service (QoS) and other network services. CPC works across multiple network technologies and equipment so that operators can deploy end-to-end "services" rather than just configure "boxes." By automating the process, CPC reduces the complexity and expense associated with today's manually configured services.

Cisco Provisioning Center is part of the Cisco Service Management (CSM) System of Operations, Administration, Maintenance, and Provisioning (OAM&P) and management tools for service provider or large enterprise networks. Operating at the service and network management layers of the Telecommunication Management Network (TMN) model, CPC interacts with other tools in the suite to provide customer-focused service management. It contains powerful tools for creating new services and extending them to support the specific requirements of service provider environments.

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### When to Sell

#### Sell This Product

##### Cisco Provisioning Center

#### When a Customer Needs These Features

- Service activation system that provisions Layer 2/Layer 3 (L2/L3) across Cisco Systems end-to-end networking technologies.
- Integrated, automated provisioning solution for network service providers who offer Frame Relay, ATM, Internet access, data-link switching (DSL), IP-virtual private network (VPN), quality of service (QoS) and other network services.

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### Key Features

- Rapid deployment of integrated L2/L3 services such as VPN and customer network management (CNM) by maintaining a database that associates customers with network elements and the services they are providing.
- Higher-quality deployment through automation improves service quality over error-prone, manual deployment methods.
- Lower operation costs through improved efficiency.
- Reduced training costs since less expertise is required.
- Faster time to market through automation features that simplify deployment.
- True end-to-end provisioning through future integrated L2/L3 provisioning capability across multiple platforms from multiple vendors.

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## Specifications

**Feature****Cisco Provisioning Center****Platform Compatibility**

Cisco Provisioning Center runs on a Sun workstation with Solaris v2.5.1 to support provisioning in the following Cisco equipment:

- Cisco BPX® 8600 series wide-area switch
- Cisco IGX wide-area switch
- Cisco MGX 8220 edge concentrator
- Newbridge 36170 series switches (attainable through Cisco Partner Syndesis, Ltd.)

Future support for:

- Cisco IOS® software-based devices
  - LightStream® 1010
  - Catalyst® 5x00 switches
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## For More Information

See the Cisco Provisioning Center Web site:

<http://www.cisco.com/go/cpc>



## Service and Support Matrix

The following table lists Cisco's packaged service products.

	Warranty Extension	Online Support (CCO)	Technical Assistance Center (TAC)	Cisco Software Updates	Hardware Replacement	Onsite Service	Configuration Services
<b>SMARTnet Maintenance</b>	—	Yes	Unlimited	Yes (IOS)	Next business day	—	—
<b>SMARTnet Onsite</b>	—	Yes	Unlimited	Yes (IOS)	4 hour	4 hour	—
<b>Software Application Support Plus Upgrades</b>	—	Yes	Unlimited	Yes	—	—	—
<b>Install Plus Config</b>	—	—	—	—	—	Physical hardware setup	Simple configuration
<b>Advance Replacement</b>	—	—	One incident	—	Next business day	—	—

# Service and Support Offerings

Cisco offers a variety of startup services, maintenance services, and consultation services. Cisco has recently replaced all previous installation and implementation services with the Total Implementation Solutions (TIS) program. TIS demonstrates Cisco's commitment to helping customers install and implement advanced networking technologies. Through this program, customers can deliver new services faster, more cost-effectively, and with less risk than ever before.

The integration of data, voice and video onto packet- or cell-based networks is a key direction for Cisco's enterprise customers. These customers are also interested in reducing equipment and connection costs, simplifying network integration and improving application performance. What could customers achieve if they deployed cutting-edge solutions more efficiently and cost-effectively? How much more could they accomplish if they had experienced, expert resources available globally?

Through the TIS program, Cisco delivers the tools, expertise, and resource customers need to quickly build their networks and deliver new services. Through the Cisco Ecosystem of partners, the industry's best expertise is utilized at the right time.

The following table gives a brief description of Cisco's service and support offerings.

Product	Description
<b>Startup Services</b>	
<b>Total Implementation Services (TIS)</b>	<p>Provides a portfolio of solutions designed to consolidate and simplify Cisco's implementation and installation programs. Prior to TIS, there were several different programs for installation and/or implementation that were cumbersome to position, sell, and deliver. TIS replaces the following services: Advanced Installation Services (AIS) for LAN, AIS Plus, AIS Deployment, Network Implementation Services (NIS) for WAN; NIS for Multiservice; and Total Cisco. TIS includes:</p> <ul style="list-style-type: none"> <li>• Upgrade services—delivers support for hardware, software, or memory upgrades of Cisco products. These offerings help to maximize network functionality and reliability while extending the life of the communications infrastructure.</li> <li>• Installation services—solves the resource problem with the tactical personnel needed to supplement customer's project management to ensure the successful installation of the network components.</li> <li>• Implementation services—delivers the tools, expertise, and resources customers need to quickly build their networks and deliver new services.</li> </ul> <p>Optional services—delivers customized solutions to meet the needs of Enterprise customers</p>
<b>Maintenance Services</b>	
<b>SMARTnet Maintenance</b>	<p>Provides customers with software maintenance, registered access to CCO, advance replacement of hardware, and technical support required for self-maintenance. SMARTnet maintenance has three delivery options:</p> <ul style="list-style-type: none"> <li>• SMARTnet Next Business Day (NBD)—8 hours/day, 5 days/week, next-business-day hardware replacement</li> <li>• SMARTnet 8 x 5 x 4—8 hours/day, 5 days/week, 4-hour hardware replacement</li> <li>• SMARTnet 24 x 7 x 4—24 hours/day, 7 days/week, 4-hour hardware replacement</li> </ul> <p>Each level of SMARTnet services is available in a shrink-wrapped package, allowing it to be effectively marketed through resellers</p>
<b>SMARTnet Onsite</b>	<p>Provides all the benefits of SMARTnet maintenance, plus one of the following remedial onsite hardware services:</p> <ul style="list-style-type: none"> <li>• SMARTnet Onsite—8 hours/day, 5 days/week, next-business-day response</li> <li>• SMARTnet Onsite 8 x 5 x 4—8 hours/day, 5 days/week, 4-hour response</li> <li>• SMARTnet Onsite 24 x 7 x 4—24 hours/day, 7 days/week, 4-hour response</li> </ul> <p>Packaged SMARTnet OnSite 24 x 7 x 4 provides SMARTnet OnSite 24x7x4 service in a shrink-wrapped package, allowing it to be effectively marketed through resellers.</p>
<b>Cisco Advance Replacement</b>	<p>Provides customers with next-business-day replacement of hardware, and assistance from the TAC, by telephone, on a single occasion.</p> <p>Packaged Cisco Advance Replacement provides Cisco Advanced Replacement in a shrink-wrapped package, enabling it to be effectively marketed through resellers.</p>
<b>Global Solution Services (GSS)</b>	<p>SMARTnet and SMARTnet Onsite support for multinational customers; the customer has two options for service delivery:</p> <ul style="list-style-type: none"> <li>• Single point of contact (SPOC)—worldwide service delivered from Cisco</li> <li>• Local support—in-country service provided by a network of authorized GSS providers</li> </ul> <p>In addition, GSS offers central purchasing for purchases destined for multiple countries, with local product delivery supplied by in-country partners.</p>

<b>Product</b>	<b>Description</b>
<b>Noncontract Services</b>	<p>Cisco provides the following noncontract services:</p> <ul style="list-style-type: none"> <li>• 24-Hour Telephone Support—telephone consultation to help troubleshoot hardware, software, or configuration problems</li> <li>• Billable Onsite Field Services—onsite remedial service, installation, ECO/FCO installation, and system updates and upgrades</li> <li>• Advance Replacement Parts—advance replacement parts shipped overnight on an as-required basis via next-business-day delivery service</li> <li>• Return for Exchange—a service that exchanges customer-returned parts with parts of equal or better type, function, or quality</li> </ul>
<b>Consultive Services</b>	
<b>Network Supported Accounts</b>	Provides personalized, proactive support, including a designated team of Cisco Certified Internetwork Expert (CCIE) support engineers who act as a remote extension of a customer's internal network operations group
<b>Professional Services</b>	<p>Offers four services, which are performed by Cisco Professional Services Providers:</p> <ul style="list-style-type: none"> <li>• Program and Project Management</li> <li>• WAN Audit</li> <li>• LAN Assessment</li> <li>• Consulting Services</li> </ul>

## Service and Support Key Selling Points

- Broad range of services and programs—Cisco offers the broadest choice of network services in the industry, including self-maintenance, assistance, online resources, remote TAC, remote consultation, 24 x 7 onsite service, and other onsite professional services.
- Corporate commitment—Cisco Systems is making substantial investments in all customer services. Cisco sets goals for and measures customer satisfaction each year. Manager and individual contributor bonuses are tied to these goals.
- Innovative online support and services—Cisco Connection Online (CCO) provides the industry's best information retrieval, technical support, and electronic commerce (DataComm Award, 1999).
- Experience—All of Cisco's support teams are staffed by experienced customer service engineers, professionals, and certified consultants and partners. Cisco has rigorous certification programs to ensure that all technical personnel have the knowledge they need to support its customers' mission-critical applications.
- Global presence, experience, and capability—Cisco has a network of global service partnerships to ensure that qualified local service is available no matter how remote the location. Cisco Partner reps follow rigorous certification programs to ensure that they have the knowledge needed to support Cisco customers. Cisco has depots located in the United States, Canada, Europe, Latin America, and Asia so that parts are quickly available when customers need them.
- Quality—Cisco has received ISO 9001 certification, a clear indication of the company's commitment to quality management and customer satisfaction

- Software value—Cisco IOS software updates and upgrades, an entitlement of SMARTnet and SMARTnet Onsite support contracts, make Cisco hardware “evergreen,” allowing for greater bandwidth, performance, features, and security.
- Extending the value of the product—Cisco services increase performance, utility, and life span of Cisco products.

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## Cisco Reseller Service and Support

Cisco’s service solutions are designed to provide resellers and distributors the service foundation to fulfill their customers’ service requirements. Cisco has developed a support strategy to meet the needs of both resellers that wish to provide support to their customers and those who choose not to.

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## Other Cisco Resources

Cisco provides technical tools and tips on line to assist customers and resellers. More information on these tools can be found at the following Web site: [www.cisco.com/public/Tech\\_support.shtml](http://www.cisco.com/public/Tech_support.shtml). Information on technical tips can be found at [www.cisco.com/public/serv\\_tips.shtml](http://www.cisco.com/public/serv_tips.shtml).

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## Ordering Information and Channel Part Numbers

The service products listed below are available in Australia, Canada, EU countries, Norway, Switzerland, and the United States.

### Cisco Service Products<sup>1</sup>

CON-SNT-PKG(x)	SMARTnet 8 x 5 x Next Business Day
CON-MYSNT-PKG(x)	3-year SMARTnet 8 x 5 x Next Business Day
CON-SNTE-PKG(x)	SMARTnet 8 x 5 x 4 <sup>2</sup>
CON-SNTP-PKG(x)	SMARTnet 24 x 7 x 4 <sup>2</sup>
CON-OS-PKG(x)	SMARTnet Onsite 8 x 5 x Next Business Day
CON-OSE-PKG(x)	SMARTnet Onsite 8 x 5 x 4 <sup>2</sup>
CON-OSP-PKG(x)	SMARTnet Onsite 24 x 7 x 4 <sup>2</sup>
CON-SAU-PKG(x)	Software Application Support plus Upgrades
BS-INSTALL-PKG	Install plus Config
CON-AR-PKG(x)	Cisco Advance Replacement

1. Cisco has assigned most of its service products to one of 18 categories. The (x) in the part number signifies the category number.
2. This service is available only within the following distance from a parts depot or Cisco-authorized service location: in the U.S., 75 driving miles; in Europe and Canada, 120 driving kilometers; in Australia, 75 driving kilometers.

# Warranty

Warranty	Products Covered <sup>1</sup>	Description
90-Day Advance Replacement	Cisco 1400, 2500, 2600, 3600, 3800, 4000, 6400, 6700, 7000, 12000, Catalyst 1400, 1800, 2900, 3900, 4000, 5000, 6000, 8500, Cisco AS5X00, Internet appliances, PIX Firewall, LocalDirector, WAN products, and application software	<ul style="list-style-type: none"> <li>• Advance Replacement, 5-day ship; if a hardware problem arises, a replacement unit is sent in advance of receiving the problem unit, shipped within five day</li> <li>• IOS software maintenance releases of "bug fixes"</li> <li>• TAC access for problem isolation and Return to Manufacturer Authorizations (RMA) for returning the problem unit</li> <li>• Guest access to Cisco Connection Online (CCO)</li> </ul>
One-Year Return to Factory (RTF)	Cisco 100, 200, 300, 700, 800, 1000, 500, 1600, 1700, Catalyst 1900, 2820, 2900XL, FastHub, Micro WebServer, 90-I Agent, plus legacy products	<ul style="list-style-type: none"> <li>• Return for replacement for one year, with 10-day turnaround; if a hardware problem arises, a replacement unit will be sent within 10 days of receipt of the problem unit</li> <li>• IOS software maintenance releases of "bug fixes" for the first 90 day</li> <li>• Guest access to CCO</li> </ul>
Five-Year Return to Factory (RTF)	Cisco 90-I	<ul style="list-style-type: none"> <li>• Return for replacement for five years, with 10-day turnaround; if a hardware problem arises, a replacement unit will be sent within 10 days of receipt of the problem unit</li> <li>• IOS software maintenance releases of "bug fixes" for the first 90 day</li> <li>• Guest access to CCO</li> </ul>
Limited Lifetime	Catalyst 3500 XL	<ul style="list-style-type: none"> <li>• Cisco warrants for the lifetime of the product, the hardware (excluding the power supply and the fan) will be free of defects in material and workmanship under normal use</li> <li>• Cisco warrants for a period of five years, the power supply and fan will be free of defects in material and workmanship under normal use</li> <li>• At Cisco's or its service center's option, shipment of a replacement within 10 working days, or repair upon return of the hardware to Cisco</li> </ul>

1. If product is not specifically annotated under one-year, five-year, or limited-lifetime warranty, assume 90-day Advance Replacement. To be sure, refer to the Cisco Information Packet that shipped with the product or ask your hardware supplier.

## For More Information

See the Cisco Warranty Web site:

[http://www.cisco.com/warp/public/cc/serv/mkt/sup/smb/warran/warty\\_ai.pdf](http://www.cisco.com/warp/public/cc/serv/mkt/sup/smb/warran/warty_ai.pdf)

## Cisco Systems Capital Financing

Cisco Systems Capital specializes in offering structured financing, equipment leasing, and short-term financing to customers and partners in the United States, Canada, Europe, Asia, Australia, and Latin America. Cisco Capital's financial solutions offer customers the ability to acquire new technologies or refresh existing equipment through easy-to-use, flexible programs.

Program	Description
<b>Lease Programs</b>	
Operating Lease	The Operating lease program is a flexible lease program to finance network equipment, help manage cash flow, and enable a company to take advantage of future changes and advancements in networking technology through low monthly payments.
Fixed Purchase Lease	The Fixed Purchase lease program offers a flexible term, 12 to 36 months, with the option to purchase the equipment at any time during the lease or for a fixed amount at lease end.
One Dollar Purchase Lease	The One Dollar Purchase lease program is a flexible term lease, 12 to 36 months, with the option to purchase the equipment at lease end for one dollar. For tax accounting purposes, the customer is considered the owner of the equipment from the beginning of the term.
EasyNet Lease	The EasyNet lease program helps finance network equipment, and manage cash flow by offering an equipment rental program with low payments during the initial term. This program offers organizations a low-cost way to deploy and update their network.
Exchange Lease	The Exchange lease program is available as a periodic Exchange or Total Exchange Program that lets companies return leased Cisco equipment for new products before lease-end.
Technology Migration Lease	The Technology Migration lease program offers operating leases with a unique upgrade option that lets companies return leased Cisco equipment before the lease term is up. This program is ideal for companies planning for partial or large-scale upgrades, or who want to retain the flexibility to migrate to new technologies, as they become available.
Technology Service Lease	The Technology Service lease program bundles the SmartNet maintenance software into the equipment lease for one easy, monthly payment.
<b>Channel Financing Programs</b>	
Distribution Financing	The Distribution financing program offers channel partners interest-free 45 and 60 day terms on all Cisco products to better match customer payment cycles.
Purchase Order Financing	The Purchase Order financing program offers authorized resellers incremental purchasing power to make a large sale and match the customer payments terms with 45 to 60 days interest free.
Accounts Receivable Financing	The Accounts Receivable financing program enables Cisco authorized resellers and partners who need to improve cash flow, expand credit capacity, and build capital reserves, to establish a revolving credit line secured by their receivables.
Extended Terms Financing	The Extended Terms financing program is available to authorized resellers and qualified Cisco enterprise and service provider customers, and offers extended payment terms up to 180 days on specific sales depending on qualifications and requirements.
E-Rate Financing	The E-Rate financing program is available to Cisco resellers and partners who have won an E-Rate-financed contract with an educational institution. This extended-terms loan covers that portion of the purchase covered by the E-Rate grant, with 90-day interest free terms for purchases directly from Cisco or through a Cisco authorized distributor.
Draft Purchase	The Draft Purchase financing program provides creative financing options to support the growing business in Latin America and Asia. The Draft Purchase program allows companies to leverage their existing credit line up to 180 days to preserve their cash position and coordinate timing between receiving and payables.
<b>Trade Financing Programs</b>	
Extended Terms with Insurance Option	The Extended Terms Financing program with Insurance Option is available to Cisco partners with excellent payment history in the following countries: Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, Uruguay, and Venezuela.
Ex-Im Bank	The Ex-Im Bank financing program offers financing to companies located in emerging market countries. The Export-Import Bank of the United States is an independent agency that promotes export of goods manufactured in the United States. Ex-Im financing is most appropriate for transactions that require financing of one year or longer, where it is difficult to obtain competitive financing by conventional methods.
Forfaiting Program	The Forfaiting Program coordinates financing of large purchases (US\$500,000 and up) of Cisco Systems equipment between forfaiters and Cisco customers in Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru, Uruguay, and Venezuela.
<b>Structured Financing Programs</b>	
Structured Financing	The Structured financing program offers financing for high dollar-volume projects. This program offers financing up to the entire cost including equipment and soft costs. Structured Financing is broken into two phases: the deployment phase (1-3 years) and the repayment phase (1-5 years) to match company expenses and revenue models. This program is subject to qualifications.

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## Why Choose Cisco Capital Financing?

- Cisco Capital is backed by Cisco Systems the world wide leader for networks for the Internet
- Cisco Capital provides one-stop financial solutions for all your business needs
- Cisco Capital is one of the fastest growing finance companies in the industry
- Cisco Capital is a global finance company with coverage in the United States, Canada, Europe, Asia, Australia, and Latin America
- Cisco Capital finance rates are among the most aggressive in the industry

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## Key Advantages of Financing Through Cisco Capital

- One-stop financing for all your business needs
- Flexibility to expand and upgrade your network system through technology upgrade and refresh programs
- Competitive leasing rates, flexible terms and conditions
- Increased buying power through increased credit lines
- Fast credit approvals
- Customized programs to provide the best overall solution for your business

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## How to Get Started With Distribution Financing

Contact your Cisco or distributor sales representative and see steps below:

- 1 Identify reseller partner's needs.
- 2 Partner contacts DFS and indicates if a Cisco direct or Premier VAR reseller.
- 3 DFS Business Development Manager meets with reseller and reviews program.
- 4 Credit approval is secured through DFS and documentation is provided to partner.
- 5 Reseller places purchase order with Cisco or distributor and references DFS as financing source.
- 6 Cisco or distributor ships product per reseller instructions and invoices DFS.
- 7 DFS pays Cisco or distributor and invoices reseller as if billed by vendor.
- 8 Reseller pays DFS according to schedule and creates new credit availability.

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## How to Get Started With Purchase Order Financing

Contact Worldwide Financial Services and see steps below:

- 1 Reseller identifies opportunity for large sale and is awarded bid or contract.
- 2 Reseller contacts Cisco for credit qualification of the end user, and receives documents from DFS.
- 3 Reseller signs documentation and forwards Notice of Assignment letter to end user for signature.
- 4 Submit purchase order to Cisco/distributor, referencing bill to DFS.
- 5 Cisco or distributor ships product to reseller and invoices DFS.
- 6 Reseller ships/installs product to end user and bills end user with remit to address of DFS.
- 7 End user remits payment to DFS lock box.
- 8 DFS pays reseller the margin less any financing costs if payment is received after the free period.

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## Program Brochure Ordering Information

<b>Publication Number</b>	<b>Publication Description</b>
<b>Leasing Programs</b>	
953484	EasyNet Lease Program
953483	Exchange Lease Program
953481	Fixed Purchase Lease Program
953482	One Dollar Purchase Lease Program
953128	Operating Lease Program
953127	Technology Migration Lease Program
953485	Technology Service Lease Program
<b>Channel Financing Programs</b>	
953139	Accounts Receivable Financing Program
953471	Distribution Financing Program (Europe)
953137	Distribution Financing Program (US)
953131	Draft Purchase Program (Asia)
953132	Draft Purchase Program (Latin America)
953138	E-Rate Financing Program
953472	Extended Terms Financing Program (Europe)
953140	Extended Terms Financing Program (US)
953133	Extended Terms Financing with Insurance Program (Latin America)
953141	Purchase Order Financing Program
<b>Structured Finance Program</b>	
953126	Structured Financing Program
<b>Trade Finance Programs</b>	
953130	Ex-Im Bank Financing Program (Latin America)
953129	Forfaiting Program (Latin America)
<b>Misc.</b>	
952981	Cisco Capital Folder

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## For More Information

See the Cisco Systems Capital Web site: [www.cisco.com/go/financingprograms](http://www.cisco.com/go/financingprograms)

Within the United States, call 800-730-4090