Cisco Products
Quick Reference Guide

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Introduction

Overview

The *Cisco Products Quick Reference Guide* (CPQRG) is a handy, compact reference tool that includes product overviews, photos, key features, technical specifications, plus much more. This book is published and printed in English three times a year and is posted online at **www.cisco.com/go/guide**. (You must have a valid CCO login to view the online guide.)

For a complete guide to all of Cisco's products, please see the Cisco Product Catalog (**www.cisco.com/univercd/cc/td/doc/pcat/**). The Cisco Products Quick Reference Guide contains only a portion of the products contained in the Product Catalog.

If you have questions or comments regarding the contents or structure of the book, please send an e-mail to **guide@cisco.com**.

Ordering Information

Partners, Resellers, and Cisco employees can purchase this book on an as-needed basis or through an annual subscription via the Subscription Program. To order, go to **www.cisco.com/go/subscription** or call 1-800-768-7162 (US/Canada) or 925-327-4072 (International). Ask for part number DOC-785983=.

If you have questions regarding the ordering process, please send an e-mail to **subscription@external.cisco.com**.

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.

What's New in this Edition?

In addition to a new cover and a new format, this version of the CPQRG includes the following product changes since last printed edition (August 2000):

New Products	Discontinued Products	Products still shipping, but no longer included in this guide
Routers and Access Products:	**Routers and Access Products:**	**Routers and Access Products:**
• Cisco SOHO 77 ADSL Router	• Cisco 1000 Series	• Cisco IAD 1101
• Cisco 826 Router	• Cisco 1400 Series	• Cisco 3300
• Cisco AS5350 Series	• Cisco 4000 Series	• Cisco MC3810
• Cisco AS5400 Universal Gateway	**Hubs:**	• Cisco 6400 Series
• Cisco AS5800 Voice Gateway	• Cisco HP 10BAST-T Hub - 16M	• Cisco 6700 Series
Wireless and IP Telephony Products:	**IP Telephony Products:**	• Cisco 12000 Series
• Cisco Aironet 340 Series Workgroup Bridge	• Cisco Access Digital Gateway	**DSL Products:**
• Cisco Voice Gateways	• Cisco Media Convergence Server 7830	• Cisco 600 Routers
• Cisco Media Convergence Server 7835	**DSL Products:**	**Switches:**
• Cisco IP IVR	• Cisco 6000 IP DSL Switch Family	• Catalyst 2820 Series
• Cisco IP SoftPhone	**Security Products:**	**All IP and ATM products:**
• Cisco WebAttendant	• Cisco PIX Firewall 515R, 515UR, 520	• Cisco LightStream 1010
• Cisco uOne Messaging Application	**Internet Products:**	• Cisco BPX 8600 Series
LAN and MAN Products:	• Cisco Cache Engine 500 Series	• Cisco MGX 8220
• Metro 1500 32 Lambda DWDM Platform		• Cisco MGX 8240
• Cisco Catalyst 4840G		• Cisco MGX 8260
Security Products:		• Cisco MGX 8800 Series
• Cisco PIX Firewall 506, 515, 525, 535		• Cisco IGX 8400
• Cisco Secure Access Control Server		
Content Delivery Network Products:		
• Cisco Content Engine 500 Series		
• Cisco Content Engine 7300 Series		
• Cisco CSS 11000 Series Content Services Switches		
• Cisco Content Router 4400		
• Cisco VPN 3000		
• Cisco VPN 5000		
Network Management Products:		
• CiscoWorks2000 Device Fault Manager		
• Cisco Universal Gateway Manager		

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**. Contacts with valid email addresses will receive CCO access notification in three to five days. If you are a registered Cisco Reseller or Partner and you do not have your login information, please send an email to **cdbadmin@cisco.com** with your company name and address and request your CCO access numbers.

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. CCO login required.	**http://www.cisco.com/dprg**
Networking Products Marketplace for Resellers An ecommerce web site with a configuration tool to validate channel product options; also select and compare products, check price and availability, and submit your order to your distributor online. CCO login required.	**http://cisco.com/go/npmr**
Cisco University Offers detailed course material on the latest technical topics throughout the year targeted for Resellers, Partners and Cisco Sales representatives.	**http://cisco.com/go/ciscou**
Worldwide Contacts Cisco office locations; directions; maps; and sales, partners, and channel contacts.	**http://www.cisco.com/go/wwcontacts**
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**
Cisco Subscription Service Ordering service for one-time purchase of or annual subscriptions to this guide or other Cisco documents and CDs; phone order by calling 800 768-7162 (U.S. or Canada) or 925 327-4072 (outside the U.S.).	**http://www.cisco.com/go/subscription**

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
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)

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
SMARTnet Maintenance	—	Yes	Unlimited	Yes (Cisco IOS Software)	Next business day	—	—
SMARTnet Onsite	—	Yes	Unlimited	Yes (Cisco IOS Software)	4 hour	4 hour	—
Software Application Support Plus Upgrades	—	Yes	Unlimited	Yes	—	—	—
Install Plus Config	—	—	—	—	—	Physical hardware setup	Simple configuration
Advance Replacement	—	—	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 resources 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
Startup Services	
Total Implementation Services (TIS)	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: • 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 • 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 • Implementation services—delivers the tools, expertise, and resources customers need to quickly build their networks and deliver new services • Optional services—delivers customized solutions to meet the needs of Enterprise customers
Maintenance Services	
SMARTnet Maintenance	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: • SMARTnet Next Business Day (NBD)—8 hours/day, 5 days/week, next-business-day hardware replacement • SMARTnet 8 x 5 x 4—8 hours/day, 5 days/week, 4-hour hardware replacement • SMARTnet 24 x 7 x 4—24 hours/day, 7 days/week, 4-hour hardware replacement Each level of SMARTnet services is available in a shrink-wrapped package, allowing it to be effectively marketed through resellers
SMARTnet Onsite	Provides all the benefits of SMARTnet maintenance, plus one of the following remedial onsite hardware services: • SMARTnet Onsite—8 hours/day, 5 days/week, next-business-day response • SMARTnet Onsite 8 x 5 x 4—8 hours/day, 5 days/week, 4-hour response • SMARTnet Onsite 24 x 7 x 4—24 hours/day, 7 days/week, 4-hour response 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.
Cisco Advance Replacement	Provides customers with next-business-day replacement of hardware, and assistance from the TAC, by telephone, on a single occasion. Packaged Cisco Advance Replacement provides Cisco Advanced Replacement in a shrink-wrapped package, enabling it to be effectively marketed through resellers.
Global Solution Services (GSS)	SMARTnet and SMARTnet Onsite support for multinational customers; the customer has two options for service delivery: • Single point of contact (SPOC)—worldwide service delivered from Cisco • Local support—in-country service provided by a network of authorized GSS providers In addition, GSS offers central purchasing for purchases destined for multiple countries, with local product delivery supplied by in-country partners.
Noncontract Services	Cisco provides the following noncontract services: • 24-Hour Telephone Support—telephone consultation to help troubleshoot hardware, software, or configuration problems • Billable Onsite Field Services—onsite remedial service, installation, ECO/FCO installation, and system updates and upgrades • Advance Replacement Parts—advance replacement parts shipped overnight on an as-required basis via next-business-day delivery service • Return for Exchange—a service that exchanges customer-returned parts with parts of equal or better type, function, or quality
Consultive Services	
Network Supported Accounts	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
Professional Services	Offers four services, which are performed by Cisco Professional Services Providers: • Program and Project Management • WAN Audit • LAN Assessment • Consulting Services

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.

Choosing the Best Network Service Provider

Cisco Systems recognizes the challenges our customers often face when selecting a service provider for Internet access, voice, DSL, virtual private network, cable, or other services. That's why we created the Cisco Powered Network program, which enables Cisco resellers and Cisco end-user customers to easily identify service providers that offer high levels of quality and reliability. Service providers who display the Cisco Powered Network mark have made a significant commitment to Cisco equipment in their networks and maintain high standards of customer service and support.

As a Cisco reseller, when your customer asks about data networking (Internet or WAN) services, you can be confident in your recommendation when you suggest a Cisco Powered Network service. Service providers running a Cisco Powered Network will deliver New World network design, operations, and innovative solutions to your customers and help complete the overall Cisco networking solution. And because your networking customers are already familiar with Cisco equipment, by recommending a service provider with a Cisco Powered Network, you offer your customers the additional benefits of end-to-end networking: higher availability, end-to-end quality of service, simplified network management, and streamlined support.

Service and Support Offerings

Key Customer Benefits Using a Cisco Powered Network

Factor	End-User Benefit
Interoperability	Fast response to service request
Security	Secure and private data
Availability	Around-the-clock access
Support	Quicker problem resolution
Reliability	Support for mission-critical users
New Services	Best choices in the marketplace
Technology	Latest features with no service interruptions
Training	Faster response and troubleshooting
Lower Costs	Most competitive prices

You can learn more about the Cisco Powered Network program by going to the Web site: **www.cisco.com/cpn**.

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.

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**. Information on technical tips can be found at **www.cisco.com/public/serv_tips.shtml**.

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[1]

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[2]
CON-SNTP-PKG(x)	SMARTnet 24 x 7 x 4[2]
CON-OS-PKG(x)	SMARTnet Onsite 8 x 5 x Next Business Day
CON-OSE-PKG(x)	SMARTnet Onsite 8 x 5 x 4[2]
CON-OSP-PKG(x)	SMARTnet Onsite 24 x 7 x 4[2]
CON-SAU-PKG(x)	Software Application Support plus Upgrades
CON-TIS-INST-PKG	Installation Services[3]
CON-TIS-CONF-PKG-B	Configuration Services[3]
CON-TIS-CONF-PKG-C	Configuration Services[3]
CON-TIS-CONF-PKG-D	Configuration Services[3]
TIS-IMPL-PKG	Implementation Services[3]
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.
3. For reseller packaged TIS categories and information, visit http://www.cisco.com/go/tis

Warranty Information

Warranty	Description	Products[1]
90 Day	• H/W Advanced Replacement - 5 days ship with RMA approval • Internet Operating Software (IOS) - access to maintenance releases • Technical Assistance Center (TAC) • Cisco Connection Online (CCO)	• All Cisco hardware and software products unless otherwise listed on this page.
1-Year Limited Software	• H/W Return to Factory (RTF) for replacement - 10 days ship with RMA approval • Technical Assistance Center (TAC) for problem identification only • Software maintenance releases only	• VCO, VCO4K, VCO20, VCO80
One Year	• H/W Return to Factory (RTF) - 10 days ship with RMA approval • Internet Operating Software (IOS) - 90 days of access to maintenance releases • Cisco Connection Online (CCO)	• AP, CAR100, CPRO-A, INA2320, MWEB, NSS, UBR900, UBR7200, WEBSERV, XDSLCPE (Cisco 600) • VPN3000, VPN5000, VPN5XXX • Catalyst 2948, Selsius, 6700, 6900, Aironet AIRANT (Antenna)
One Year Plus	Day 1 through day 90: • H/W Advanced Replacement - next business day ship with RMA approval • Internet Operating Software (IOS) - access to maintenance releases • Technical Assistance Center (TAC) • Cisco Connection Online (CCO) Day 91 through day 365: • H/W Advanced Replacement - 10 days ship with RMA approval • Cisco Connection Online (CCO)	• Cisco 700, 800, 1000, 1400, 1600, 1700 • Aironet AIR (Bridge, Access Point & some Adapter)
Limited Lifetime[2]	Day 1 through day 90: • H/W Advanced Replacement - next business day ship with RMA approval • Internet Operating Software (IOS) - access to maintenance releases • Technical Assistance Center (TAC) • Cisco Connection Online (CCO) Day 91 through Lifetime: • H/W Advanced Replacement - 10 days ship with RMA approval • Cisco Connection Online (CCO) First 5 years: • Fan tray and power supply Advanced Replacement (see above for turn-around time)	• Cisco 1500, 1516 • Catalyst 1900, 2820, 2900XL, 3500XL • FastHub 400 • Aironet AIRCA (Adapter)
3-Year Full Hardware	• H/W Return to Factory (RTF) - 15 days ship with RMA approval • Operating Software - 1 year of access to maintenance releases	• Cisco 15300, 15400, 15800, 15900
5 Year RTF	• H/W Return to Factory (RTF) - 10 days ship with RMA approval • Internet Operating Software (IOS) - access to maintenance releases • Cisco Connection Online (CCO)	• Cisco 90-I

1. All Cisco hardware and software products, unless otherwise listed on this page, are covered under the 90 Day Warranty. Please refer to the Cisco Information Packet shipped with the product to confirm the warranty, or ask your supplier.

2. "Lifetime" Warranty is limited to original owner only and support is subject to product end-of-life terms.

For More Information

See the Cisco Warranty Web site: **http://www.cisco.com/univercd/cc/td/doc/es_inpck/**

Capital Financing

Cisco Systems Capital offers a variety of financing and equipment leasing alternatives, both short term and long term, 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 flexible, easy-to-use programs.

Program	Description
Leasing Options	
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.
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.
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.
Leasing Programs	
Venture Lease	The Venture lease program is available to start-up service providers in the United States who have acquired angel investor or venture funding. Lease amounts ranging from a minimum of $1 million to a maximum of $5 million are available to qualified companies for terms up to 36 months. Qualified SPs can finance up to 100% of their Cisco equipment.
Service Provider Access	The Service Provider Access program offers start-up service providers immediate credit up to $85,000 to lease Cisco equipment, with no down payment, and the first payment deferred for 90 days. SPs can go directly to the distributor of choice for specially priced equipment.
Direct Access Partner	The Direct Access Partner Program offers start-up service providers immediate credit up to $85,000 to lease Cisco equipment, with no down payment, and the first payment deferred for 90 days. SPs can bypass two-tier resellers and go to the largest Cisco DVARs for specially priced equipment and special leasing terms.
Smart Start	The Smart Start Program for Venture Capital funded start-up Dot Com's offers up to $450,000 in pre-approved lease credit to qualified companies. With no payments for the first 90 days.
Business Builder	The Business Builder Program is available to any larger service provider in the United States who can qualify for up to $450,000 by meeting five verifiable criteria. 1) One year in business; 2) Cash, or equivalents, equal to 4 times the lease amount; 3) Tangible net worth equal to cash; 4) Monthly revenues greater than $500k; and 5) No derogatory credit history.
Technology Service Lease	The Technology Service lease program bundles the SmartNet maintenance software into the equipment lease for one easy, monthly payment.
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.
Cisco Edge	The Cisco Edge Program offers flexible financing options, from working capital to leases to loans, to customers in any Latin American country. Offering competitive rates and terms from 45 days to five years, making it easier to obtain loans from US $75,000 to US $2.5 million.
Cisco Facil	The Cisco Facil Program is especially tailored to the needs of small- and medium-sized businesses that purchase equipment through the two-tier reseller channel in Brazil. Lease amounts average US $150,000 with terms from 24-to-36 months.
Cisco Pyme Plus	The Cisco Pyme Plus Program is especially tailored to the needs of small- and medium-sized businesses that purchase equipment through the two-tier reseller channel in Argentina. Lease amounts average US $15,000 with terms from 24-to-36 months.
Channel Financing Programs	
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.

Program	Description
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.
Trade Financing Programs	
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.
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.
Structured Financing Programs	
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.

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 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

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

How to Get Started with Leasing

Work with your VAR or Cisco sales representative to determine equipment configuration and see steps below:

1. Cisco or VAR sales representative determines the customer is interested in leasing.

2. Sales representative determines if the customer is participating in a special program, or if they are Enterprise, Service Provider, or Small Medium Business.

3. Call: 1 800 730-4030
   Press 1 for Enterprise.
   Press 2 for Service Provider.
   Press 3 for Small Medium Business.

4. Your leasing representative will provide assistance with the leasing process by: a.) Submitting financials; b.) Receiving approval; c.) Signing the lease; d.) Ordering equipment; e.) Beginning payments.

How to Get Started With Distribution Financing

Contact your Cisco or distributor sales representatives 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.

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.

Program Brochure Ordering Information

Publication Number	Publication Description
Leasing Programs	
954658	Venture Leasing Program
953485	Technology Service Lease Program
953127	Technology Migration Lease Program
954660	Cisco Edge Program (Latin America)
954662	Cisco Facil Lease Program (Brazil)
954661	Cisco Pyme Plus Program (Argentina)
953128	Operating Lease Program
953481	Fixed Purchase Lease
953482	One Dollar Purchase Lease
953483	Exchange Lease
953484	EasyNet Lease
Channel Financing Programs	
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
Structured Finance Program	
953126	Structured Financing Program
Trade Finance Programs	
953130	Ex-Im Bank Financing Program (Latin America)
953129	Forfaiting Program (Latin America)
Misc.	
952981	Cisco Capital Folder

For More Information

See the Cisco Systems Capital Web site: **www.cisco.com/go/financingprograms**

Within the United States, call 800-730-4090

Routers and Access Products

Routers and Access Products at a Glance

Product	Features	Page
Cisco SOHO 77 ADSL Router	ADSL Router • Affordable Multi-user access DSL Access • Security with Packet Filtering Firewall • Powered by Cisco IOS Manageability and Reliability	1-9
Cisco 700 Series	ISDN router • Cisco 76x models: 1 Ethernet port (10BASE-T) and 1-port BRI (NT1 models available) • Cisco 77x models: 4 Ethernet ports (10BASE-T) and two analog telephone ports (NT1 models available) • Recommended for up to 5 users	1-11
Cisco 800 Series	ADSL, IDSL, ISDN, and serial routers with Cisco IOS Technologies • 1-port ADSL or 1-port BRI (optional NT1), IDSL or 1-port serial • Optional 4-port Ethernet hub and 2 analog telephone ports (ISDN models) • Advanced security features • Toll quality voice with VoIP (Cisco 827-4V)	1-14
Cisco 1600 Series	Modular desktop access router • 1- or 2-port Ethernet (10BASE-T) • 1-port BRI (optional NT1) or 1-port sync or async serial • 1 WAN interface card (WIC) slot	1-18
Cisco 1700 Series	Flexible, secure, modular access routers • 1-port autosensing 10/100 Fast Ethernet LAN • Modular slots support a wide variety of WAN and analog voice interface cards • Supports secure Internet, intranet, and extranet access as well as new WAN applications including VPNs, integrated voice/data (VOIP), and broadband services	1-21
Cisco 2500 Series	Fixed and modular configuration access routers and servers • Single or dual LAN: Ethernet or Token Ring • Router/hub or access server • Single, dual serial, or high-density serial models	1-26
Cisco 2600 Series	Modular multiservice router and dial access server • Single or dual LAN (Ethernet, 10/100 Mbps Ethernet, Token Ring and mixed Ethernet, and Token Ring options) • Wide variety of interface support, including analog and digital, voice, async and sync serial, ISDN, Fractional and channelized T1/E1, Ethernet, analog modems, and ATM • Shares WAN interface cards and network modules with Cisco 1600,1700, and 3600 series	1-31
Cisco 3600 Series	Modular, high-density access router • 2-, 4-, and 6-slot models • Wide variety of media support, including async and sync serial, ISDN, channelized T1/E1, Ethernet, Fast Ethernet, Token Ring, digital modems, and ATM • Voice/fax over IP or Frame Relay	1-37
Cisco AS5350 Series	Compact, modular, and 1 RU Universal Gateway • 3 dial feature card slots • 2 port CT1/CE1/PRI card and 60 universal port ready modem cards • 2 10/100 autosensing FE ports and 2 8 MB serial ports	1-44

Product	Features	Page
Cisco AS5300 Series	Hybrid async and ISDN access servers • 3 network interface card slots • 4- and 8-ports PRI (T1/E1) and 4-ports serial • Up to 240 integrated modems	1-47
Cisco AS5300/Voice Gateway	High performance T1/E1 VoIP Gateway • 4 T1/E1 ports (96/120 voice/fax channels) and 4-ports serial • One 10/100 Fast Ethernet, and one 10BASE-T Ethernet • G.711, G.729, G.729a, G.723.1, G.726, G.728 voice CODECs, and 14.4 kbps Group III fax relay	1-51
Cisco AS5400	High density in a small footprint • Universal port; low power per port; CT3 ingress • High performance async/ISDN/VoIP/wireless • Flexible redundant backhaul methods	1-53
Cisco AS5800 Series	High-end dial products • Hybrid, asynchronous and ISDN termination • Accommodate both mobile and high-bandwidth requirements	1-55
Cisco AS5800 Voice Gateway	High-end dial products • Hybrid, asynchronous and ISDN termination • Accommodate both mobile and high-bandwidth requirements	1-57
Cisco 7100 Series	Large branch and central site VPN router • Comprehensive suite of VPN services, including encryption, tunneling, firewall, and bandwidth management • Embedded I/O for ease of deployment • Service module slot for IPSec and PPTP encryption coprocessing	1-59
Cisco 7200 Series	WAN-edge router for intelligent services, modularity, high performance, and scalability • Fully modular, chassis-based • 4- or 6-slot models and choice of three system processors • Wide variety of LAN and WAN options, including Ethernet, Fast Ethernet, Token Ring, FDDI, serial, ISDN, HSSI, ATM, Packet over DS3/E3	1-62
Cisco 7500 Series	Premier high-end services-enabled core and WAN aggregation router for voice, video, and data in enterprise and service provider applications. • 5-, 7-, and 13-slot models • 1-, 2-, or 4-Bus models offering 1, 2, or 4 Gbps backplanes • Wide variety of LAN and WAN options including Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, FDDI, serial, ISDN, HSSI, ATM, packet over DS3/E3	1-67

Memory Information for Distribution Routers

Router	Memory Type	Slots	Default Memory	Max Memory	Default Config. (Notes)
SOHO 77	Flash	1	8 MB	8 MB	
	DRAM	1	16 MB	16 MB	
700 Series	Flash	0	1 MB	1 MB	
	DRAM	1	1.5 MB (On board)	2 MB	
801 - 804, 802 IDSL, 804 IDSL	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
826, 827, & 827-4V	Flash	1	8 MB	16 MB	4 MB On board + 4 MB Mini Flash
	DRAM	1	16 MB (827-4V: 24 MB)	32 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 (261x, 262x)	1	8 MB	16 MB	Slot 0 = 8 MB
	Flash (265x)	1	8 MB	32 MB	Slot 0 = 8 MB
	DRAM (261x, 262x)	2	32 MB	64 MB	Slot 0 = 16 MB; Slot 1 = 16 MB
	DRAM (265x)	2	32 MB	128 MB	Slot 0 = 32 MB; Slot 1 = empty
3620 and 3640	Flash (PCMCIA)	2	0	32 MB	
	Flash (SIMM)	2	8 MB	32 MB	Slot 0 = 8 MB
	DRAM	4	32 MB	3620: 64 MB 3640: 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	
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	
AS5350	System Flash	N/A	32 MB	64 MB	
	SDRAM		128 MB	512 MB	
	Shared		64 MB	128 MB	
	Boot Flash		8 MB	64 MB	
AS5300/Voice Gateway	Flash	2	16 MB	16 MB	Slot 0 = 8 MB
	DRAM	2	64 MB	128 MB	Slot 0 = 32 MB
	Shared		16 MB	16 MB	
	Boot Flash		8 MB	8 MB	
AS5400	System Flash	N/A	32 MB	64 MB	
	SDRAM		256 MB	512 MB	
	Shared		64 MB	128 MB	
	Boot Flash		8 MB	16 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	48 MB	110 MB	Slot 0 = 48 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-200)		4 MB		
	Shared (NPE-300)		32 MB		
	DRAM (NPE-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 Port Matrix

	Cisco SOHO 77	Cisco 700 Series	Cisco 800 Series	Cisco 1600 Series	Cisco 1700 Series	Cisco 2500 Series	Cisco 2600 Series	Cisco 3600 Series	Cisco AS5300	Cisco AS5300 VG	Cisco AS5350	Cisco AS5400	Cisco AS5800	Cisco 7100 Series	Cisco 7200 Series	Cisco 7500 Series
Fixed Ports Only	X	X	X													
Fixed & Modular Ports				X	X	X	X	1	X	X	X	X	X	X		
Modular Ports Only								2							X	X
LAN Ports																
10-MB Ethernet	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10-MB Ethernet (fiber)								X						X	X	X
100-MB Ethernet				X			X	X			X	X		X	X	X
100-MB Ethernet (fiber)								X						X	X	X
10/100-MB Eth					X		X	X	X	X	X	X	X	X		
Integrated Eth. Hub		X	X			X										
100 VG													X			X
Token Ring						X	X	X					X	X	X	X
FDDI/CDDI														X	X	X
ATM	X		X				X	X					X		X	X
Gigabit Ethernet													X		X	X
WAN Ports																
Sync Serial			X	X	X	X	X	X	X	X	X	X	X		X	X
Sync Serial w/ CSU				X	X	X	X	X								
ISDN BRI (S/T)	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	
ISDN PRI/Ch T1							X	X	X	X			X		X	X
ISDN PRI w/ CSU							X	X	X	X			X		X	X
Async				X	X	X	X	X					X			
POTS	X	X	X													
Integrated Modems							X	X	X		X	X	X			
HSSI								X					X	X	X	X
DS3								X					X	X	X	X
ATM OC-3							X	X					X		X	X
ATM OC-12																
ATM							X	X					X		X	X
ATM - T1/E1							X	X					X	X	X	
SONET													X		X	X
ADSL	X		X													
IDSL			X				X									
DPT															X	X
Voice Ports																
Analog	X	X	X		X		X	X								
Digital							X	X		X	X	X	X	X	X	

1. Cisco 3660 only.

2. Cisco 3620 and 3640.

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-R0M located in every accessory kit for supported products. For more information, see the Cisco FastStep Web site at http://www.cisco.com/go/faststep.

ConfigMaker 2.4

Cisco ConfigMaker is designed to configure a small to medium sized 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 device 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.

- ConfigMaker can also read Cisco IOS Software configurations from previously configured routers.
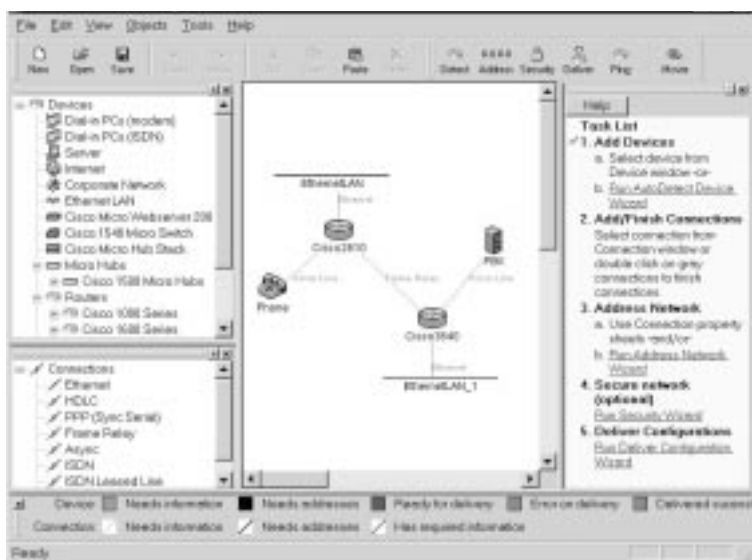
The ConfigMaker graphical user interface displays a network diagram that shows the network devices in relationship to each other. ConfigMaker supports 800, 1600, 1700, 2500, 2600, and 3600 series routers, switches, hubs, and other network devices.

Cisco ConfigMaker helps you configure many Cisco IOS Software features, including:

- Voice over IP (with QoS settings)
- Cisco IOS Firewall
- IPSec (encryption for VPNs)
- Network Address Translation (NAT)
- Committed Access Rate (CAR)
- Dynamic Host Configuration Protocol (DHCP)

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.com/go/configmaker.

Bandwidth Optimization

Cisco IOS Technologies deliver bandwidth optimization with these features:

- Multichassis Multilink PPP—A Cisco IOS Software 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 Cisco IOS Software 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 Software 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 Software 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 Software 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 SOHO 77 ADSL Router[1]

The Cisco SOHO 77 provides an affordable, secure, multiuser digital subscriber line (DSL) access solution to small office/home office customers while reducing deployment and operational costs for service providers.

Through the power of Cisco IOS software technology, the Cisco SOHO 77 ADSL router provides superior manageability and reliability.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco SOHO 77	• 1 Ethernet and 1 ADSL with Cisco IOS Manageability and reliability

Key Features

- Supports Cisco IOS Software—the industry standard software that powers 80 percent of the Internet
- Multi-user access with NAT allowing users to share a single DSL line
- Standard security with ACLs, PAT/NAT, PAP/CHAP, MS-CHAP, Lock and Key

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

Specifications

Feature	SOHO 77
Fixed LAN Ports (connections)	1-port Ethernet (10BASE-T)
Fixed WAN Ports (connections)	1-port ADSL
Modular Slots	None
Processor Speed (type)	50 MHz (MPC 855T)
Flash Memory	8 MB
DRAM Memory	16 MB
Power Supply	External
Dimensions (HxWxD)	2.0 x 9.9 x 8.3 in.
Service Category	1

Competitive Products

- 3Com: OfficeConnect 810
- Alcatel: Speed Touch Pro Router
- Cayman: 3220H
- Efficient: 5861 / 5660
- Lucent: CellPipe 50A
- Netopia: R6100
- Westel: Wirespeed 36R566
- Zyxel: 641

Cisco IOS Software and Memory Requirements

In distribution, the Cisco SOHO 77 ships with

- 8 MB Flash memory
- 16 MB DRAM memory

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required	DRAM Memory Required
SSOHOC-12103XP=	IP	12.1(3)XP	8 MB	16 MB

For More Information

See the Cisco SOHO 77 Web site: http://www.cisco.com/go/soho77

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 with ISDN for every PC can use a single Cisco 700, instead of multiple modems or TAs and multiple phone lines. Routers are more secure, easier to deploy, less expensive to manage, and cost less to use than modems.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 761M	• Simple Internet Access • Built-in NT1 for U.S. and Canada
Cisco 775M, 776M	• Internet access for home-based businesses • Two plain old telephone service (POTS) interfaces to allow standard telephone, fax, or modem to share ISDN line • A cost-effective, 10BASE-T, unmanaged hub • Built-in NT1 for U.S. and Canada (Cisco 776M) • Interfaces allow standard telephone, fax, or modem to share ISDN line
Cisco 761M-1CAPI, 775M-1CAPI	• CAPI for access to leading Internet service providers and online services including faxing, e-mail, and banking • RVS-COM-lite applications

Key Features

- IP and IPX routing for up to 1500 PCs (recommended for up to 5)

- Some modules include a 4-port hub and 2 POTS ports for all-in-one device supporting fax, phone, and PCs

- Security features include PAT/NAT, PAP, CHAP, caller ID callback, and access lists, for more security than a modem or TA

- Dynamic Host Configuration Protocol (DHCP) relay agent and server for dynamic addressing of attached workstations

- Two B-channels for phone or data and automatic B-channel aggregation with Multilink PPP

- Always-on ISDN

- Low ISDN usage cost with bandwidth optimization—compression, Bandwidth-on-Demand B-channel aggregation, Dial-on-Demand, and X.25 over D channel

- X.25 over B channel for BTs CARDWAY TPAD Services

Specifications

Feature	Cisco 761M	Cisco 775M	Cisco 776M
Fixed LAN Ports (connections)	1-port Ethernet (10BASE-T)	4-port Ethernet hub (10BASE-T)	4-port Ethernet hub (10BASE-T)
Fixed WAN Ports (connections)	1-port ISDN BRI (S/T)	1-port ISDN BRI (S/T) 2-port POTS	1-port ISDN BRI (U) 2-port POTS
Modular Slots	None	None	None
Processor Speed (type)	25-MHz (80386)	25-MHz (80386)	25-MHz (80386)
Flash Memory	1 MB	1 MB	1 MB
DRAM Memory	1.5 MB (default) 2 MB (max)	1.5 MB (default) 2 MB (maximum)	1.5 MB (default) 2 MB (maximum)
Dimensions (HxWxD)	1.6 x 8.3 x 9 in.	1.6 x 8.3 x 9 in.	1.6 x 8.3 x 9 in.
Service Category	1	1	1

Competitive Products

- 3Com: Office Connect LAN Modem
- AVM: ISDN cards with KEN! or Network Distributed ISDN software; ISDN cards with NetWare MultiProtocol Router for ISDN
- BinTec: Bingo
- Eicon: Diva T/A ISDN LAN Modem
- Elsa: Lancom 1000
- Intel: Express ER8011
- Netopia: R3100-UP or R3100U
- Nortel/Bay: NetGear RT328
- Zyxel: Presige 100 or 1001H

Cisco IOS Software and Memory Requirements

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

Distribution Part Numbers and Ordering Information

Cisco 700 Series Router Chassis[1]

CISCO761M	ISDN Router with SF700-ROX-CE-4.x
CISCO776M	ISDN Router w/ NT-1, 2 POTS, w/ 4-port Hub (U.S.)
CISCO761M-1CAPI	1-port 10BASE-T, 1-port BRI (S/T), 1-user CAPI
CISCO775M-1CAPI	4-port 10BASE-T Hub, 1-port BRI (S/T), 2 POTS ports, 1-user CAPI
CISCO775M-G1	ISDN Router w/ 4-port Hub, 2 POTS (Canada, Netherlands)
CISCO775M	ISDN Router w/ 4-port Hub, 2 POTS (U.S., MX)
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 (Canada)

Cisco 700 Series Memory Options

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

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 Maintenance (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 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 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 a corporate LAN via one ADSL, IDSL, ISDN, or serial connections (up to 512 Kbps). Those who will especially benefit from 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 801	• 1 Ethernet and 1 ISDN Basic Rate Interface (BRI) S/T (for outside North America)
Cisco 802	• 1 Ethernet and 1 ISDN BRI U (for North America)
Cisco 803	• 4-port shared Ethernet hub, 2 analog POTS, and 1 ISDN BRI S/T (for outside North America)
Cisco 804	• 4-port shared Ethernet hub, 2 analog POTS, and 1 ISDN BRI U (for North America)
Cisco 805	• 1 Ethernet and 1 serial WAN port for Frame Relay, leased line (up to 512 Kbps), or async dialup access
Cisco 802 IDSL	• 1 Ethernet and 1 IDSL
Cisco 804 IDSL	• 4-port shared Ethernet hub and 1 IDSL
Cisco 826	• 1 ADSL over ISDN and 1 Ethernet
Cisco 827	• 1 ADSL and 1 Ethernet
Cisco 827-4V	• 1 ADSL and 1 Ethernet with 4 analog phone ports for VoIP

Key Features

- Supports Cisco IOS Software—the industry standard software that powers 80 percent of the Internet
- Fixed configuration support for several WAN connections including ADSL, ADSL over ISDN, IDSL, ISDN, serial
- Standard security with ACLs, 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
- Toll quality voice with VoIP on Cisco 827-4V
- Optional integrated 4-port hub and 2 analog POTs (Cisco 802 and 804) for all-in-one capability of data, phone, and fax over one ISDN line
- Bandwidth optimization features such as compression, Bandwidth-on-Demand, Dial-on-Demand, Always-On-Dynamic-ISDN (AODI), and X.25 over D channel (Cisco 801- 804)
- Support for CAPI applications in the European market

Specifications

Cisco 801, 802, 803, 804, and 805

Feature	801	802	803	804	805
Fixed LAN Port Connections	1-port Ethernet (10BASE-T)	1-port Ethernet (10BASE-T)	4-port Ethernet hub (10BASE-T)	4-port Ethernet hub (10BASE-T)	1-port Ethernet (10BASE-T)
Fixed WAN Port Connections	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)
Modular Slots	None	None	None	None	None
Processor Speed (type)	33 MHz (MPC 850)	Same as Cisco 801	Same as Cisco 801	Same as Cisco 801	Same as Cisco 801
Flash Memory	8 MB (default) 12 MB (max)	Same as Cisco 801	Same as Cisco 801	Same as Cisco 801	4 MB (default) 12 MB (max)
DRAM Memory	4 MB (default) 12 MB (max)	Same as Cisco 801	Same as Cisco 801	Same as Cisco 801	8 MB (default) 16 MB (max)
Power Supply	External	External	External	External	External
Dimensions (HxWxD)	2.0 x 9.9 x 8.3 in.	Same as Cisco 801	Same as Cisco 801	Same as Cisco 801	Same as Cisco 801
Service Category	1	1	1	1	1

Cisco 800 Series IDSL and ASL Models (Cisco 802 IDSL, 804 IDSL, 826, 827, and 827-4V)

Feature	802 IDSL	804 IDSL	826	827	827-4V
Fixed LAN Port Connections	1-port Ethernet (10BASE-T)	4-port Ethernet hub (10BASE-T)	1-port Ethernet (10BASE-T)	1-port Ethernet (10BASE-T)	1-port Ethernet (10BASE-T)
Fixed WAN Port Connections	1-port IDSL	1-port IDSL	1-port ADSL over ISDN	1-port ADSL	1-port ADSL
Modular Slots	None	None	None	None	None
Processor Speed (type)	33 MHz (MPC 850)	33 MHz (MPC 850)	50 MHz (MPC 855T)	50 MHz (MPC 855T)	50 MHz (MPC 855T)
Flash Memory	8 MB (default) 12 MB (max)	8 MB (default) 12 MB (max)	8 MB (default) 16 MB (max)	8 MB (default) 16 MB (max)	8 MB (default) 16 MB (max)
DRAM Memory	4 MB (default) 12 MB (max)	4 MB (default) 12 MB (max)	16 MB (default) 32 MB (max)	16 MB (default) 32 MB (max)	24 MB (default) 32 MB (max)
Power Supply	External	External	External	External	External
Dimensions (HxWxD)	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.
Service Category	1	1	1	1	1

Competitive Products

- 3Com: Office Connect Remote 511/521
- Ascend: Pipeline 75/85
- Efficient 5861 / 5660
- Intel: Express 8100
- Netopia: R3100, R6100
- Nortel/Bay: Nautica 250

Cisco IOS Software and Memory Requirements

In distribution, the Cisco 801-804 ship with	In distribution, the Cisco 805 ships with	In distribution, the Cisco 826 and 827 ship with	In distribution, the Cisco 827AV ships with
8-MB Flash memory	4-MB Flash memory	8-MB Flash memory	8-MB Flash memory
4-MB DRAM memory	8-MB DRAM memory	16-MB DRAM memory	24-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[1]	DRAM Memory Required
CD08-C-12.0.5=	IP	12.0(5)T	8 MB (801-804) 4 MB (805)	4 MB(801-804) 8 MB (805)
CD08-CP-12.0.7=	IP Plus	12.0(5)T	8 MB (801-804) 4 MB (805)	4 MB (801-804) 8 MB (805)
CD08-BP-12.0.5=	IP/IPX Plus	12.0(5)T	8 MB (801-804) 4 MB (805)	4 MB (801-804) 8 MB (805)
CD08-CH-12.0.5=	IP/FW	12.0(5)T	8 MB (801-804) 4 MB (805)	4 MB (801-804) 8 MB (805)
CD08-CHP-12.0.7=	IP/FW Plus	12.0(5)T	8 MB (801-804) 4 MB (805)	4 MB (801-804) 8 MB (805)
CD08-CHL-12.0.7=	IP/FW Plus IPSec56	12.0(5)T	8 MB (801-804) **8 MB** (805)	**8 MB** (801-804) 8 MB (805)
CD08-BHL-12.0.7=	IP/IPX/FW Plus IPSec56	12.0(5)T	8 MB (801-804) **8 MB** (805)	**8 MB** (801-804) 8 MB (805)
DSL Products—Cisco 826, 827, and 827-4V				
S820C-12103XG=	IP	12.1(1)XG	8 MB	16 MB
S820CHL-12103XG=	IP Firewall Plus IPSec 56	12.1(1)XG	8 MB	16 MB
S820CHK2-12103XG=	IP Firewall Plus IPSec 3DES	12.1(1)XG	8 MB	24 MB
S820BHK2-12103XG=	IP/IPX Firewall Plus IPSec 3DES	12.1(1)XG	8 MB	24 MB
S820CV-12103XG=	IP Voice	12.1(1)XG	8 MB	24 MB
S820BVP-12103XG=	IP/IPX Plus Voice	12.1(1)XG	8 MB	24 MB
S820BVP-12103XG=	IP Firewall Voice Plus IPSec 56 (827-4V Only)	12.1(1)XG	8 MB	24 MB
S820BVP-12103XG=	IP Firewall Voice Plus IPSec 3DES (827-4V Only)	12.1(1)XG	8 MB	24 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 801-805 Routers[1]

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

Cisco 802 IDSL & Cisco 804 IDSL

Cisco802-IDSL	IDSL/Ethernet Router with Internet DSL
Cisco804-IDSL	IDSL/Ethernet Router, 4 Port Hub with Internet DSL

Cisco 801 & Cisco 803 w/CAPI

CISCO801-CAPI	ISDN/Ethernet Router with one-user CAPI license
CISCO803-CAPI	ISDN/Ethernet Router with one-user CAPI license, 4 Port Hub

Cisco 826, 827 & 827-4V ADSL Routers

CISCO826	I1-port ADSL over ISDN, 1-port 10bT, IP s/w
CISCO827	1-port ADSL, 1-port 10bT, IP s/w
CISCO827-4V	1-port ADSL, 1-port 10bT, 4 ports FXS, IP/Voice s/w

Cisco 801-805 Series Software Feature Packs

CD08-C-12.0.5=	IP for Cisco 801-805
CD08-CP-12.0.7=	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-12.0.7=	IP/FW Plus for Cisco 801-805
CD08-CHL-12.0.7=	IP/FW Plus IPSec56 for Cisco 801-805
CD08-BHL-12.0.7=	IP/IPX/FW Plus IPSec56 for Cisco 801-805

Cisco 801 CAPI & 803 CAPI CD Feature Packs

CD08-BHL-12.0.7XV=	Cisco 800 Series IP/IPX/FW Plus IPSec 56
CD08-BP-12.07.XV=	Cisco 800 Series IP/IPX/Plus
CD800-5CAPI=	CAPI 5 User CD

Cisco 802 IDSL & 804 IDSL CD Feature Packs

CD08-IC-12.0.5T=	Cisco 800 Series Internet DSL
CD08-ICHL-12.0.5T=	Cisco 800 Series Internet DSL FW IPSec56
CD08-IBHL-12.0.5T=	Cisco 800 Series Internet DSL IPX FW IPSec56

Cisco 826, 827 & 827-4V Software

S820C-12103XG=	IP
S820CHL-12103XG=	IP Firewall Plus IPSec 56
S820CHK2-12103XG=	IP Firewall Plus IPSec 3DES
S820BHK2-12103XG=	IP/IPX Firewall Plus IPSec 3DES
S820CV-12103XG=	IP Voice
S820BVP-12103XG=	IP/IPX Plus Voice
S820BVP-12103XG=	IP Firewall Voice Plus IPSec 56 (827-4V Only)
S820BVP-12103XG=	IP Firewall Voice Plus IPSec 3DES (827-4V Only)

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
PWR-820-WW1	Cisco 820 Series Universal, External AC Power Supply

Cisco 800 Series Basic Maintenance

CON-SNT-PKG1	Cisco 800 Series SMARTnet Maintenance (8x5xNBD)

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 800 Series Web site: http://www.cisco.com/go/800

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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 1601 R	• 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 kbps • Higher speeds than ISDN or Switched 56 kbps
Cisco 1602 R	• A 56-kbps serial port (Frame Relay, leased line, Switched 56, SMDS, and X.25) • Low-cost integrated channel service unit (CSU)/data service unit (DSU) at 56 kbps • Ability to get CSU/DSU diagnostics information and configuration remotely via Cisco IOS Software command-line interface
Cisco 1603 R and 1604 R	• ISDN (BRI) and ISDN leased-line connectivity • Built-in NT1 for U.S. and Canada (Cisco 1604)
Cisco 1605 R	• Two Ethernet ports to isolate internal secure LAN from perimeter LAN (exposed to Internet) • Single flexible WAN connection (any WAN interface card)

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 R	Cisco 1602 R	Cisco 1603 R	Cisco 1604 R	Cisco 1605 R
Fixed LAN Ports (connections)	1-port Ethernet (10BASE-T)	1-port Ethernet (10BASE-T)	1-port Ethernet (10BASE-T)	1-port Ethernet (10BASE-T)	2-ports Ethernet (10BASE-T)
Fixed WAN Ports (connections)	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
WAN Card Slots	1	1	1	1	1
WAN Interface Card Modules	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 1601 R	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 1601 R
Processor Speed	33 MHz (68360)	33 MHz (68360)	33 MHz (68360)	33 MHz (68360)	33 MHz (68360)
Flash Memory	4 MB (default) 16 MB (max)	Same as Cisco 1601 R	Same as Cisco 1601 R	Same as Cisco 1601 R	Same as Cisco 1601 R
DRAM Memory	8 MB (default) 24 MB (max)	Same as Cisco 1601 R	Same as Cisco 1601 R	Same as Cisco 1601 R	Same as Cisco 1601 R
Dimensions (HxWxD)	2.19 x 11.15 x 8.67 in.	Same as Cisco 1601 R	Same as Cisco 1601 R	Same as Cisco 1601 R	Same as Cisco 1601 R
Service Category	2	2	2	2	2

Competitive Products

- 3Com: NETBuilder 1xx, 22x, 422
- Ascend: Pipeline 130, 220
- Nortel/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 Software 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[1]	DRAM Memory Required
CD16-C-12.1=	IP only	12.1(1) or 12.1(1)T	4 MB	8 MB
CD16-CY-12.1=	IP Plus 56	12.1(1) or 12.1(1)T	4 MB	**10 MB**
CD16-CL-12.1=	IP Plus IPSec 56	12.1(1) or 12.1(1)T	4 MB	**12 MB**
CD16-CH-12.1=	IP/Firewall	12.1(1) or 12.1(1)T	4 MB	8 MB
CD16-CHL-12.1=	IP/Firewall Plus IPSec 56	12.1(1) or 12.1(1)T	4 MB	**12 MB**
CD16-B-12.1=	IP/IPX	12.1(1) or 12.1(1)T	4 MB	8 MB
CD16-BPH-12.1=	IP/IPX/Firewall Plus	12.1(1) or 12.1(1)T	4 MB	**10 MB**
CD16-Q-12.1=	IP/IPX/AT/IBM	12.1(1) or 12.1(1)T	4 MB	**12 MB**
CD16-QHL-12.1=	IP/IPX/AT/IBM/Firewall Plus IPSec 56	12.1(1) or 12.1(1)T	**6 MB**	**16 MB**
CD16-QP-12.1=	IP/IPX/AT/IBM Plus	12.1(1) or 12.1(1)T	**6 MB**	**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 1600 Series Router Chassis[1]

CISCO1601-R	Cisco 1601 R Ethernet/Serial Modular Router
CISCO1602-R	Cisco 1602 R Ethernet/Serial Modular Router w/56 K DSU 4-wire
CISCO1603-R	Cisco 1603 R Ethernet/ISDN-BRI Modular Router
CISCO1604-R	Cisco 1604 R Ethernet/ISDN-BRI Modular Router w/NT1
CISCO1605-R	Cisco 1605 R Dual Ethernet/WAN Interface Card Slot Router

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 and 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 and Leased Line)
WIC-1DSU-T1=	1-port Serial w/ T1/Fractional T1 DSU/CSU WAN Interface Card
WIC-1DSU-56K4=	1-port Serial w/ 4-Wire 56 Kbps DSU/CSU WAN Interface Card

Cisco 1600 Series Software Feature Packs

CD16-C-12.1.1=	Cisco 1600 Series, IP only Feature Pack
CD16-CP-12.1.1=	Cisco 1600 Series, IP Plus Feature Pack
CD16-CL-12.1.1=	Cisco 1600 Series, IP Plus IPSec 56 Feature Pack
CD16-CH-12.1.1=	Cisco 1600 Series, IP/Firewall Feature Pack
CD16-CHL-12.1.1=	Cisco 1600 Series, IP/Firewall Plus IPSec 56 Feature Pack
CD16-B-12.1.1=	Cisco 1600 Series, IP/IPX Feature Pack
CD16-BHP-12.1.1=	Cisco 1600 Series, IP/IPX/Firewall Plus Feature Pack
CD16-Q-12.1.1=	Cisco 1600 Series, IP/IPX/AT/IBM Feature Pack
CD16-QHL-12.1.1=	Cisco 1600 Series, IP/IPX/AT/IBM/Firewall Plus IPSec 56 Feature Pack
CD16-QP-12.1.1=	Cisco 1600 Series, IP/IPX/AT/IBM Plus Feature Pack

Cisco1600 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

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 1600 Series Web site: http://www.cisco.com/go/1600

Cisco 1700 Series

The Cisco 1700 series of modular access routers enables you to deliver flexible, secure access solutions in an integrated platform for small and medium sized businesses and small branch offices. The Cisco 1700 series offers changeable interfaces and robust performance capabilities enabling you to customize an access solution to suit customers' network and business requirements including virtual private network (VPN), multiservice voice/fax/data integration, and broadband digital subscriber line (DSL) and cable services.

The 1700 series is modular, allowing businesses to dynamically design, deploy and modify the platform including the addition of new functionality and features that are evolving in real time with the Internet. This will provide customers the agility to outpace the competition in the Internet economy.   The 1700 series includes the following integrated network functions; 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.

The Cisco 1750 supports integrated multiservice voice/fax/data applications in addition to data applications. Because the 1750 is a multi-service router, it offers customers the functionality they need to be a successful e-business.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 1720	• A secure data only access solution that adapts to customers' evolving network requirements over the long term • Support for data applications including VPNs and broadband access services • A broad array of WAN services supported, including Frame Relay, leased line, ADSL, ISDN BRI, X.25, SMDS and more • VPN at full T1/E1 speeds
Cisco 1750	All the above, plus: • An integrated access solution that combines a best-in-class router with firewall, high-speed encryption, VPN tunnel server, DSU/CSU, and ISDN NT-1 functions in one secure platform • Integrated multiservice voice/video/fax/data applications

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

• Support for ADSL with ADSL WAN Interface Card

Specifications

Feature	Cisco 1720	Cisco 1750
Fixed LAN Ports (connections)	1-port autosensing 10/100 Mbps Ethernet (10/100BASE-T)	1-port autosensing 10/100 Mbps Ethernet (10/100BASE-T)
Fixed WAN Ports	None	None
Modular Slots	2 WAN slots	3 slots (2 WAN or Voice slots and 1 Voice slot)
WAN Interface Cards (WICs)	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 1-port ADSL	Same as Cisco 1720
Voice Interface Cards (VICs)	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
Processor Speed (type)	48 MHz (Motorola MPC860T PowerQUICC)	48 MHz (Motorola MPC860T PowerQUICC)
Flash Memory	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
DRAM Memory	16 MB (default); 48 MB (max)	1750 base model: 16 MB (default); 48 MB (max) 1750-2V multiservice-ready configuration: 32 MB 1750-4V multiservice-ready configuration: 32 MB
Dimensions (HxWxD)	3.1 x 11.2 x 8.7 in.	4.0 x 11.2 x 8.7 in.
Service Category	2	1750 base model: 3 1750-2V and 1750-4V: 4

Competitive Products

Cisco 1720	Cisco 1750
3Com: OfficeConnect NETBuilder Ascend: Pipeline 130 Nortel/Bay: AN	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	32 MB	8 MB
CISCO1750-4V	32 MB	8 MB

To run the Cisco IOS Software 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
Cisco 1720 and 1750 Data Software Feature Packs for Cisco IOS Release 12.1 Mainline				
CD17-C- 12.x	IP only IP/ADSL	12.1 Mainline	4 MB 8 MB	16 MB 20 MB
CD17-CH-12.x	IP/FW	12.1 Mainline	4 MB	20 MB
CD17-CP-12.x	IP Plus	12.1 Mainline	4 MB	20 MB
CD17-CL-12.x	IP Plus IPSEC 56	12.1 Mainline	8 MB	20 MB
CD17-CK2-12.x	IP Plus IPSEC 3DES	12.1 Mainline	8 MB	24 MB
CD17-CHL-12.x	IP/FW Plus IPSEC 56	12.1 Mainline	8 MB	24 MB
CD17-CHK2-12.x	IP/FW Plus IPSEC 3DES	12.1 Mainline	8 MB	32 MB
CD17-B-12.12.x	IP/IPX	12.1 Mainline	4 MB	20 MB
CD17-BHP-12.x	IP/IPX/FW Plus	12.1 Mainline	8 MB	20 MB
CD17-Q-12.x	IP/IPX/AT/IBM	12.1 Mainline	8 MB	24 MB
CD17-QP-12.x	IP/IPX/AT/IBM Plus	12.1 Mainline	8 MB	32 MB
CD17-QHL-12.x	IP/IPX/AT/IBM/FW Plus IPSEC 56	12.1 Mainline	8 MB	32 MB
CD17-QHK2-12.x	IP/IPX/AT/IBM/FW Plus IPSEC 3DES	12.1 Mainline	8 MB	32 MB
Cisco 1720 and 1750 Data/Voice Software Feature Packs for Cisco IOS Release 12.1 Mainline				
CD17-CVP-12.x	IP/Voice Plus	12.1 Mainline	8 MB	24 MB
CD17-CVL-12.x	IP/Voice Plus IPSEC 56	12.1 Mainline	8 MB	24 MB
CD17-CHV-12.x	IP/FW/Voice Plus	12.1 Mainline	8 MB	24 MB
CD17-CHVL-12.x	IP/FW/Voice Plus IPSEC 56	12.1 Mainline	8 MB	24 MB
CD17-BHPV-12.x	IP/IPX/FW/Voice Plus	12.1 Mainline	8 MB	24 MB
CD17-CVK2-12.x	IP/Voice Plus IPSEC 3DES	12.1 Mainline	8 MB	24 MB
CD17-CHVK2-12.x	IP/FW/Voice Plus IPSEC 3DES	12.1 Mainline	8 MB	24 MB
CD17-QHVL-12.0.5=	IP/IPX/AT/IBM/FW/Voice Plus IPSEC 56	12.1 Mainline	8 MB	32 MB
CD17-QHVK2-12.0.5=	IP/IPX/AT/IBM/FW/Voice IPSEC 3DES	12.1 Mainline	8 MB	32 MB
Cisco 1720 and 1750 Data Software Feature Packs for Cisco IOS Release 12.1T				
CD17-C- 12.x	IP only	12.1T	4 MB	16 MB
CD17-CH-12.x	IP/FW	12.1T	4 MB	20 MB
CD17-CP-12.x	IP Plus	12.1T	8 MB	24 MB
CD17-CL-12.x	IP Plus IPSEC 56	12.1T	8 MB	32 MB
CD17-CK2-12.x	IP Plus IPSEC 3DES	12.1T	8 MB	32 MB
CD17-CHL-12.x	IP/FW Plus IPSEC 56	12.1T	8 MB	32 MB
CD17-CHK2-12.x	IP/FW Plus IPSEC 3DES	12.1T	8 MB	32 MB
CD17-B-12.12.x	IP/IPX	12.1T	4 MB	20 MB
CD17-BHP-12.x	IP/IPX/FW Plus	12.1T	8 MB	24 MB
CD17-Q-12.x	IP/IPX/AT/IBM	12.1T	8 MB	24 MB
CD17-QP-12.x	IP/IPX/AT/IBM Plus	12.1T	8 MB	32 MB
CD17-QHL-12.x	IP/IPX/AT/IBM/FW Plus IPSEC 56	12.1T	8 MB	32 MB
CD17-QHK2-12.x	IP/IPX/AT/IBM/FW Plus IPSEC 3DES	12.1T	8 MB	32 MB
Cisco 1720 and 1750 Data/Voice Software Feature Packs for Cisco IOS Release 12.1T				
CD17-CVP-12.x	IP/Voice Plus	12.1T	8 MB	32 MB
CD17-CVL-12.x	IP/Voice Plus IPSEC 56	12.1T	8 MB	32 MB
CD17-CHV-12.x	IP/FW/Voice Plus	12.1T	8 MB	32 MB
CD17-CHVL-12.x	IP/FW/Voice Plus IPSEC 56	12.1T	8 MB	32 MB
CD17-BHPV-12.x	IP/IPX/FW/Voice Plus	12.1T	8 MB	32 MB

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required	DRAM Memory Required
CD17-CVK2-12.x	IP/Voice Plus IPSEC 3DES	12.1T	8 MB	32 MB
CD17-CHVK2-12.x	IP/FW/Voice Plus IPSEC 3DES	12.1T	8 MB	32 MB
CD17-QHVL-12.0.5=	IP/IPX/AT/IBM/FW/Voice Plus IPSEC 56	12.1T	16 MB	48 MB
CD17-QHVK2-12.0.5=	IP/IPX/AT/IBM/FW/Voice IPSEC 3DES	12.1T	16 MB	48 MB

Distribution Part Numbers and Ordering Information

Cisco 1700 Series Modular Access Routers[1]

CISCO1720	10/100BASE-T 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
UPG1750-2V=	Cisco 1750 2-Voice channel Upgrade Kit w/ IOS IP/VOICE + SW
UPG1750-4V=	Cisco 1750 4-Voice channel Upgrade Kit w/ IOS IP/VOICE + SW
CISCO1720-ADSL	10/100BASE-T Modular ADSL Router
CISCO1750-ADSL	10/100BASE-T Modular ADSL Router

Cisco 1700 Series Bundles

SEC17-VPN=	Cisco 1700 Bundle: Firewall IPSec 3DES, Memory
SEC17-VPN-M=	Cisco 1700 Bundle: VPN Module, Firewall IPSec 3DES, Memory
SEC17-FW=	Cisco 1700 Bundle: Firewall, Memory

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

CD17-C-12.1.1=	IP only Feature Pack
CD17-CP-12.1.1=	IP Plus Feature Pack
CD17-CH-12.1.1=	IP/FW Feature Pack
CD17-CL-12.1.1=	IP Plus IPSEC 56 Feature Pack
CD17-CK2-12.1.1=	IP Plus IPSEC 3DES Feature Pack
CD17-CHL-12.1.1=	IP/FW Plus IPSEC 56 Feature Pack
CD17-CHK2-12.1.1=	IP/FW Plus IPSEC 3DES Feature Pack
CD17-B-12.1.1=	IP/IPX Feature Pack
CD17-BHP-12.1.1=	IP/IPX/FW Plus Feature Pack
CD17-Q-12.1.1=	IP/IPX/AT/IBM Feature Pack
CD17-QP-12.1.1=	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-12.1.1=	IP/Voice Plus Feature Pack
CD17-CHV-12.1.1=	IP/FW/Voice Plus Feature Pack
CD17-CVL-12.1.1=	IP/Voice Plus IPSEC 56 Feature Pack
CD17-CVK2-12.1.1=	IP/Voice Plus IPSEC 3DES Feature Pack
CD17-CHVL-12.1.1=	IP/FW/Voice Plus IPSEC 56 Feature Pack
CD17-CHVK2-12.1.1=	IP/FW/Voice Plus IPSEC 3DES Feature Pack
CD17-BHPV-12.1.1=	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
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

Cisco 1700 Series

WIC-1DSU-T1	1-port T1/Fr T1 w/ (DSU/CSU) WAN Interface Card
WIC-1ADSL=	1-port ADSL WAN Interface Card
WIC-1ENET=	1-port Ethernet 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 Spares and Accessories	
PWR-1700-WW1=	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 1750 Upgrade Kits	
UPG1750-2V=	Cisco 1750 2-Voice channel Upgrade Kit w/ IOS IP/VOICE + SW
UPG1750-4V=	Cisco 1750 4-Voice channel Upgrade Kit w/ IOS IP/VOICE + SW
Cisco 1700 Series Basic Maintenance	
CON-SNT-PKG4	Cisco 1750-2V and 1750-4V SMARTnet Maintenance
CON-SNT-PKG3	Cisco 1750 SMARTnet Maintenance
CON-SNT-PKG2	Cisco 1720 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 Web site: 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.

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 10BASE-T 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

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
Processor Speed (type)	20 MHz (68030)
Flash Memory	8-MB dual Flash bank option (default) 16 MB (max)
DRAM Memory	4 MB, upgrades to 8 or 16 MB
Power Supply	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
Fixed LAN Ports	1-port Ethernet	1-port Token Ring	1-port Ethernet	1-port Token Ring
Fixed WAN Ports	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)
Slots	None	None	None	None
Dimensions (HxWxD)	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.
Service Category	4	4	4	4

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

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

Cisco 2500 Series—Access Servers (fixed configurations)

Feature	Cisco 2509	AS 2509-RJ	Cisco 2511	AS 2511-RJ	Cisco 2512
Fixed LAN Ports (connections)	1-port Ethernet	1-port Ethernet	1-port Ethernet	1-port Ethernet	1-port Token Ring
Fixed WAN Ports (connections)	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
Slots	None	None	None	None	None
Dimensions (HxWxD)	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.
Service Category	4	4	4	4	4

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

Feature	Cisco 2520	Cisco 2521	Cisco 2522	Cisco 2523
Fixed LAN Ports	1-port Ethernet	1-port Token Ring	1-port Ethernet	1-port Token Ring
Fixed WAN Ports (connections)	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
Slots	None	None	None	None
Dimensions (HxWxD)	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.
Service Category	4	4	4	5

Cisco 2500 Series—Dual LAN Routers (fixed configurations)

Feature	Cisco 2513	Cisco 2514	Cisco 2515
Fixed LAN Ports	1-port Ethernet 1-port Token Ring	2-port Ethernet	2-port Token Ring
Fixed WAN Ports	2-port sync serial	2-port sync serial	2-port sync serial
Slots	None	None	None
Dimensions (HxWxD)	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.
Service Category	4	4	5

Cisco 2500 Series—Single LAN Routers (modular configurations)

Feature	Cisco 2524	Cisco 2525
Fixed LAN Ports	1-port Ethernet	1-port Token Ring
Fixed WAN Ports	None	None
LAN Modules	None	None
WAN Modules	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
Dimensions (HxWxD)	1.75 x 17.5 x 10.56 in.	1.75 x 17.5 x 10.56 in.
Service Category	5	5

Competitive Products

• 3Com: SuperStack NETBuilder

• IBM: 2210

• Nortel/Bay: Advanced Node (AN)

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 Software 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[1]	DRAM Memory Required
CD25-C-12.0=	IP only	12.0(6)	8 MB	4 MB
		12.0(5)T	8 MB	**6 MB**
		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	**6 MB**
		12.0(5)T	**16 MB**	**8 MB**
		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)	**16 MB**	**8 MB**
		12.0(5)T	**16 MB**	**10 MB**
CD25-B-12.0=	IP/IPX/AT/DEC	12.0(6)	8 MB	**6 MB**
		12.0(5)T	8 MB	**8 MB**
		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)	**16 MB**	**6 MB**
		12.0(5)T	**16 MB**	**8 MB**
		11.3(9)	8 MB	**6 MB**
		11.3(9)T	8 MB	**6 MB**
		11.2(18)	8 MB	**6 MB**
CD25-AP-12.0=	Enterprise Plus	12.0(6)	**16 MB**	**8 MB**
		12.0(5)T	**16 MB**	**10 MB**
		11.3(10)	**16 MB**	**6 MB**
		11.3(10)T	**16 MB**	**6 MB**
		11.2(18)	8 MB	**6 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 2500 Series Router Chassis[1]

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 10BASE-T hub, 2-port Serial, IP s/w
CISCO2507-CH	16-port 10BASE-T 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 10BASE-T 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 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 Web site: http://www.cisco.com/go/2500

Cisco 2600 Series

Cisco Systems extends enterprise / provider-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 network technology changes 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 2600 Series	• 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 2651	• High performance CPU, two autosensing 10/100 Mbps Ethernet ports with VLAN support
Cisco 2650	• High performance CPU, one autosensing 10/100 Mbps Ethernet port with VLAN support
Cisco 2621	• Two autosensing 10/100 Mbps Ethernet ports with VLAN support
Cisco 2620	• One autosensing 10/100 Mbps Ethernet port with VLAN support
Cisco 2613	• One Token Ring port
Cisco 2612	• One Token Ring port and one Ethernet port for mixed LANs and migrating from Token Ring to Ethernet
Cisco 2611	• Two Ethernet ports for LAN segmentation or secure LAN isolation
Cisco 2610	• One Ethernet port

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 Software QoS features (such as RSVP, WFQ, CAR, and RED), voice/fax traffic is digitized and encapsulated in Frame Relay or IP packets and consolidated with data traffic

Specifications

Feature	Cisco 2651 and Cisco 2650	Cisco 2621 and Cisco 2620	Cisco 2613 and Cisco 2612	Cisco 2611 and Cisco 2610
Throughput (max, fast-switching)	34-37K packets per second (pps)	23-25Kpps	12-15Kpps	12-15Kpps
Fixed LAN Ports	2-port 10/100 Mbps Ethernet (Cisco 2651) 1-port 10/100 Mbps Ethernet (Cisco 2650)	2-port 10/100 Mbps Ethernet (Cisco 2621) 1-port 10/100 Mbps Ethernet (Cisco 2620)	1-port Token Ring (Cisco 2613) 1-port Ethernet and 1-port Token Ring (Cisco 2612)	2-port Ethernet (Cisco 2611) 1-port Ethernet (Cisco 2610)
Fixed WAN Ports	1-115.2 Kbps async only (aux port)	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
Network Module Slots	1	1	1	1
WAN Interface Card Slots	2	2	2	2
Advanced Integration Slots (AIM)	1	1	1	1
WAN Interface Cards	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 (4 Mbps) sync serial 2-port low-speed (134 Kbps) async/sync serial	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
Multiflex Voice and WAN Interface Cards[1]	1- and 2-port T1/fT1 with CSU/DSU and optional Drop and Insert 1- and 2-port E1/fE1 with DSU and optional Drop and Insert and unframed G.703 support	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
Voice/Fax Network Modules	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 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
Voice Interface Card Modules	2-port voice—FXS 2-port voice—E&M 2-port voice—FXO 2-port voice—BRI (S/T-TE)	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
LAN Modules	1- and 4-port Ethernet 10BASE-T	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
WAN Modules	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 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650

Feature	Cisco 2651 and Cisco 2650	Cisco 2621 and Cisco 2620	Cisco 2613 and Cisco 2612	Cisco 2611 and Cisco 2610
ATM Modules	1-port ATM-25 4- and 8-port T1 ATM IMA with CSU/DSU 4- and 8-port E1 ATM IMA 1-port DS3 ATM 1-port E3 ATM 1-port OC-3 ATM with Circuit Emulation (AAL-1)	1-port ATM-25 4- and 8-port T1 ATM IMA with CSU/DSU 4- and 8-port E1 ATM IMA 1-port DS3 ATM 1-port E3 ATM	1-port ATM-25 4- and 8-port T1 ATM IMA with CSU/DSU 4- and 8-port E1 ATM IMA	1-port ATM-25 4- and 8-port T1 ATM IMA with CSU/DSU 4- and 8-port E1 ATM IMA
Modem Modules	8- and 16-port analog	8- and 16-port analog	8- and 16-port analog	8- and 16-port analog
AIM Modules	Data Compression AIM (8 Mbps) Encryption AIM (base performance, up to 6 Mbps)	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
Processor	80-MHz (RISC)	50-MHz (RISC)	40-MHz (RISC)	40-MHz (RISC)
Flash Memory	8 MB (default) 32 MB (max)	8 MB (default) 16 MB (max)	8 MB (default) 16 MB (max)	8 MB (default) 16 MB (max)
DRAM Memory	32 MB (default) 128 MB (max)	32 MB (default) 64 MB (max)	32 MB (default) 64 MB (max)	32 MB (default) 64 MB (max)
Power Supply	AC, DC optional, redundant power (external unit)	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
Dimensions (HxWxD)	1.69 x 17.5 x 11.8 in.	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650	Same as Cisco 2651 and Cisco 2650
Cisco IOS Release(s) Supported	12.1.2T or later "T" releases	12.0.T, 12.1T, 12.1 mainline or later	11.3T, 12.0 mainline, 12.0.T, 12.1T, 12.1 mainline or later	11.3T, 12.0 mainline, 12.0.T, 12.1T, 12.1 mainline or later
Service Category	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

- Intel/Shiva: LanRover Family

- Motorola: Vanguard 645x/643x

- Nortel/Bay: Advanced Remote Node (ARN), Passport 4400 series

Cisco IOS Software and Memory Requirements

The Cisco 2600 Series in distribution ships with:

- 8-MB Flash memory

- 32-MB DRAM memory

Most Cisco IOS software CD feature packs for the Cisco 2600 series include several selected Cisco IOS releases. To run the latest Cisco IOS Software Feature Packs with version 12.0(7)XK, you need, at a minimum, the amount of memory shown in the following table. Some configurations will require more than the recommended minimum.

The Cisco 2651 and Cisco 2650 will initially be supported with unique Cisco 265x-designated feature packs including Cisco IOS version 12.1.2T. These feature packs can be identified by part numbers starting CD265-xxxx-12.1.2. Coming soon, all Cisco

2600 series will be supported with Cisco IOS version 12.1.5(T) CD feature packs, for example, CD26-CP12.1.5=. There will be no Cisco 265x specific part numbers offered for this and future releases.

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required[1]	DRAM Memory Required
Cisco 2610, 2611, 2612, 2613, 2620, and 2621				
CD26-C-12.0.7=	IP only	12.0(7)XK1	8 MB	24 MB
CD26-CP-12.0.7=	IP Plus	12.0(7)XK1	8 MB	**40 MB**
CD26-CH-12.0.7=	IP/Firewall	12.0(7)XK1	8 MB	**32 MB**
CD26-CHL-12.0.7=	IP/Firewall Plus IPSec 56	12.0(7)XK1	**16 MB**	**48 MB**
CD26-CHK2-12.0.7=	IP/Firewall Plus IPSec 3DES	12.0(7)XK1	**16 MB**	**48 MB**
CD26-CK2-12.0.7=	IP Plus IPSec 3DES	12.0(7)XK1	**16 MB**	**40 MB**
CD26-CL-12.0.7=	IP Plus IPSec 56	12.0(7)XK1	**16 MB**	**40 MB**
CD26-B-12.0.7=	IP/IPX/AT/DEC	12.0(7)XK1	8 MB	32 MB
CD26-BP-12.0.7=	IP/IPX/AT/DEC Plus	12.0(7)XK1	**16 MB**	**40 MB**
CD26-BHP-12.0.7=	IP/IPX/AT/DEC/Firewall Plus	12.0(7)XK1	**16 MB**	**48 MB**
CD26-AP-12.0.7=	Enterprise Plus	12.0(7)XK1	**16 MB**	**48 MB**
CD26-AL-12.0.7=	Enterprise Plus IPSec 56	12.0(7)XK1	**16 MB**	**48 MB**
CD26-AHK2-12.0.7=	Enterprise/Firewall Plus IPSec 3DES	12.0(7)XK1	**16 MB**	**48 MB**
CD26-AHL-12.0.7=	Enterprise/Firewall Plus IPSec 56	12.0(7)XK1	**16 MB**	**48 MB**
CD26-AK2-12.0.7=	Enterprise Plus IPSec 3DES	12.0(7)XK1	**16 MB**	**48 MB**
CD26-E-12.0.7=	Remote Access Server	12.0(7)XK1	8 MB	24 MB
Cisco 2650 and 2651				
CD265-C-12.0.7=	IP only	12.1(2)T	8 MB	24 MB
CD265-CP-12.0.7=	IP Plus	12.1(2)T	**16 MB**	**40 MB**
CD265-CH-12.0.7=	IP/Firewall	12.1(2)T	8 MB	**32 MB**
CD265-B-12.0.7=	IP/IPX/AT/DEC	12.1(2)T	8 MB	32 MB
CD265-BP-12.0.7=	IP/IPX/AT/DEC Plus	12.1(2)T	**16 MB**	**40 MB**
CD265-AP-12.0.7=	Enterprise Plus	12.1(2)T	**16 MB**	**48 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[1]

CISCO2610	1-port 10BASE-T, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2610-DC	1-port 10BASE-T, 1 network module slot, 1 AIM slot, 2 WIC slots, DC power supply, IP s/w
CISCO2610-RPS	1-port 10BASE-T, 1 network module slot, 1 AIM slot, 2 WIC slots, RPS adapter, IP s/w
CISCO2611	2-port 10BASE-T, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2611-DC	2-port 10BASE-T, 1 network module slot, 1 AIM slot, 2 WIC slots, DC power supply, IP s/w
CISCO2611-RPS	2-port 10BASE-T, 1 network module slot, 1 AIM slot, 2 WIC slots, RPS adapter, IP s/w
CISCO2612	1-port 10BASE-T, 1-port TR, 1 network module slot, 1 AIM slot, 2 WIC slots, IP s/w
CISCO2612-DC	1-port 10BASE-T, 1-port TR, 1 network module slot, 1 AIM slot, 2 WIC slots, DC Power Supply, IP s/w
CISCO2612-RPS	1-port 10BASE-T, 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, 1AIM 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
CISCO2650	High Performance 10/100 Modular Router w/ Cisco IOS IP s/w
CISCO2651	High Performance Dual 10/100 Modular Router w/ Cisco IOS IP

Cisco 2600 Series

Cisco 2600 Series LAN Modules

NM-1E=	1-port 10BASE-T network module
NM-4E=	4-port 10BASE-T 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[2]

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

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-2FX0-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)[3]

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

Cisco 2600 Series

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

Cisco 2600 Series Software Feature Packs

CD26-C-12.0.7=	Cisco 2600 Series, IP Feature Pack
CD26-CP-12.0.7=	Cisco 2600 Series, IP Plus Feature Pack
CD26-CH-12.0.7=	Cisco 2600 Series, IP/Firewall Feature Pack
CD26-CHL-12.0.7=	Cisco 2600 Series, IP/Firewall Plus IPSec 56 Feature Pack
CD26-CHK2-12.0.7=	Cisco 2600 Series, IP/Firewall Plus IPSec 3DES Feature Pack
CD26-CK2-12.0.7=	Cisco 2600 Series, IP Plus IPSec 3DES Feature Pack
CD26-CL-12.0.7=	Cisco 2600 Series, IP Plus IPSec 56 Feature Pack
CD26-B-12.0.7=	Cisco 2600 Series, IP/IPX/AT/DEC Feature Pack
CD26-BP-12.0.7=	Cisco 2600 Series, IP/IPX/AT/DEC Plus Feature Pack
CD26-BHP-12.0.7=	Cisco 2600 Series, IP/IPX/AT/DEC/Firewall Plus Feature Pack
CD26-AP-12.0.7=	Cisco 2600 Series, Enterprise Plus Feature Pack
CD26-AL-12.0.7=	Cisco 2600 Series, Enterprise Plus IPSec 56 Feature Pack
CD26-AHK2-12.0.7=	Cisco 2600 Series, Enterprise/Firewall Plus IPSec 3DES Feature Pack
CD26-AHL-12.0.7=	Cisco 2600 Series, Enterprise/Firewall Plus IPSec 56 Feature Pack
CD26-AK2-12.0.7=	Cisco 2600 Series, Enterprise Plus IPSec 3DES Feature Pack
CD26-E-12.0.7=	Cisco 2600 Series, RAS Feature Pack
CD265-AP-12.1.3=	Cisco 2600 Series, Enterprise Plus Feature Pack
CD265-B-12.1.3=	Cisco 2600 Series, IP/IPX/AT/DEC Feature Pack
CD265-BP-12.1.3=	Cisco 2600 Series, IP/IPX/AT/DEC Plus Feature Pack
CD265-CH-12.1.3=	Cisco 2600 Series, IP/FW/IDS Feature Pack
CD265-CP-12.1.3=	Cisco 2600 Series, IP Plus 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
MEM2650-8D=	8 MB DRAM DIMM for the Cisco 265x only
MEM2650-16D=	1 6 MB DRAM DIMM for the Cisco 265x only
MEM2650-32D=	32 MB DRAM DIMM for the Cisco 265x only
MEM2650-64D=	64 MB DRAM DIMM for the Cisco 265x only
MEM2650-32FS=	32 MB Flash SIMM for the Cisco 265x only
MEM2650-8U32FS=	8 to 32 MB Flash SIMM Upgrade for the Cisco265x only

Cisco 2600 Series Advanced Integration Modules

AIM-COMPR2=	Data Compression AIM for the Cisco 2600 series
AIM-VPN/BP=	DES/3DES VPN Encryption AIM for 2600-Base Performance

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

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.

For More Information

See the Cisco 2600 Series Web site: http://www.cisco.com/go/2600

Cisco 2600 Series

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.

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

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
Fixed Ports	None	None	1 or 2 10/100 Ethernet
Network Module Slots	2	4	6
Advanced Integration Module (AIM) Slots	None	None	2
LAN/Combo Modules	1- and 4-port 10BASE-T Module 1- and 2-port 10BASE-T, 2 WIC Slots 1-port 10BASE-T, 1-port Token Ring, 2 WIC Slots 1-port 10/100BASE-TX Module 1-port 100BASE-FX Module 1-port 10/100BASE-TX, 1-port Ch T1/ISDN-PRI 1-port 10/100BASE-TX, 2-port Ch T1/ISDN-PRI 1-port 10/100BASE-TX, 1-port Ch T1/ISDN-PRI w/ CSU 1-port 10/100BASE-TX, 2-port Channelized T1/ISDN-PRI w/ CSU 1-port 10/100BASE-TX, 1-port Ch E1/PRI Unbal 1-port 10/100BASE-TX, 2-port Ch E1/PRI Unbal 1-port 10/100BASE-TX, 1-port Ch E1/PRI Bal 1-port 10/100BASE-TX, 2-port Ch E1/PRI Bal 1-port 10/100 Ethernet, 2 WIC Slots 2-port 10/100 Ethernet, 2 WIC Slots 1-port 10/100 Ethernet, 1-port Token Ring, 2 WIC Slots 2 WIC Slots	Same as Cisco 3620	Same as Cisco 3620
WAN Modules	4- and 8-port BRI (S/T) 4- and 8-port BRI (U) w/ NT-1 4-port serial 4- and 8-port async/sync serial 16- and 32-port async 1- and 2-port Channelized T1/ISDN-PRI 1- and 2-port Channelized T1/ISDN-PRI w/ CSU 1-port HSSI Compression 4 and 8-port E1 ATM (with IMA) VPN Encryption	Same as Cisco 3620	Same as Cisco 3620 (Hardware compression support only through AIM-COMPR4)
ATM Modules	1-port 25-MBps ATM 1-port OC3-155Mbps ATM 4- and 8-port T1 ATM (with IMA) 1-port DS3 ATM 1-port E3 ATM 1-port OC-3/STM-1 with CES ATM, Multimode, Singlemode Intermediate Reach and Singlemode Long Reach versions	Same as Cisco 3620	Same as Cisco 3620
Voice/Fax Network Modules	1- or 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 2-port E1 60 channel voice/fax	Same as Cisco 3620	Same as Cisco 3620
WAN Interface Card (WIC) Modules	1-port ISDN BRI (S/T) 1-port ISDN BRI (U) 1-port sync serial 1-port 4-wire 56-kbps CSU/DSU 1-port T1/FT1 CSU/DSU 2-port multiflex T1/E1 Drop and Insert 2-port serial 2-port sync/async	Same as Cisco 3620	Same as Cisco 3620

Feature	Cisco 3620	Cisco 3640	Cisco 3660
Multiflex Voice/WAN Interface Cards	1-port RJ-48 Multiflex Trunk - T1 2-port RJ-48 Multiflex Trunk - T1 2-port RJ-48 Multiflex Trunk - T1 With Drop and Insert 1-port RJ-48 Multiflex Trunk - E1 2-port RJ-48 Multiflex Trunk - E1 1-port RJ-48 Multiflex Trunk - E1 With Drop and Insert	Same as Cisco 3620	Same as Cisco 3620
Voice Interface Card (VIC) Modules	2-port voice—FXS 2-port voice—E&M 2-port voice—FXO 2-port voice—BRI (S/T-TE)	Same as Cisco 3620	Same as Cisco 3620
Modem Modules	6-, 12-, 18-, 24-, and 30-port digital modem 8- and 16-port analog modem	Same as Cisco 3620	Same as Cisco 3620
Processor Speed (type)	80-MHz (IDT R4700 RISC)	100-MHz (IDT R4700 RISC)	225-MHz (QED RM5271 RISC)
Flash Memory	8 MB (default); 32 MB (max)	Same as Cisco 3620	8 MB (default); 64 MB (max)
DRAM Memory	32 MB (default) 64 MB (max)	32 MB (default) 128 MB (max)	32 MB SDRAM (default) 256 MB SDRAM (max)
Power Supply	AC, DC optional	AC, DC optional	Single or dual AC/DC
Dimensions (HxWxD)	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.
Service Category	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[1]	DRAM Memory Required
Cisco 3620 and 3640				
CD36-C-12.0.7=	IP only	12.0(7)XK	8 MB	32 MB
CD36-CP-12.0.7=	IP Plus	12.0(7)XK	**16 MB**	**48 MB**
CD36-CH-12.0.7=	IP/FW	12.0(7)XK	8 MB	32 MB
CD36-CHL-12.0.7=	IP/FW Plus IPSec 56	12.0(7)XK	**16 MB**	**64 MB**
CD36-CHK2-12.0.7=	IP/FW Plus IPSec 3DES	12.0(7)XK	**16 MB**	**64 MB**
CD36-CK2-12.0.7=	IP/ Plus IPSec 3DES	12.0(7)XK	**16 MB**	**48 MB**
CD36-CL-12.0.7=	IP Plus IPSec 56	12.0(7)XK	**16 MB**	**48 MB**
CD36-B-12.0.7=	IP/IPX/AppleTalk/DECnet	12.0(7)XK	8 MB	32 MB
CD36-BP-12.0.7=	IP/IPX/AppleTalk/DECnet Plus	12.0(7)XK	**16 MB**	**48 MB**
CD36-BHP-12.0.7=	IP/IPX/AT/DEC/FW Plus	12.0(7)XK	**16 MB**	**64 MB**

Distribution Part Number	Feature Pack Description	IOS Image Release	Flash Memory Required[1]	DRAM Memory Required
CD36-AP-12.0.7=	Enterprise Plus	12.0(7)XK	**16 MB**	**64 MB**
CD36-AL-12.0.7=	Enterprise Plus IPSec 56	12.0(7)XK	**16 MB**	**64 MB**
CD36-AHK2-12.0.7=	Enterprise/FW Plus IPSec 3DES	12.0(7)XK	**16 MB**	**64 MB**
CD36-AHL-12.0.7=	Enterprise/FW Plus IPSec 56	12.0(7)XK	**16 MB**	**64 MB**
Cisco 3660				
CD36-C-12.0.7=	IP only	12.0(7)XK	8 MB	32 MB SDRAM
CD36-CP-12.0.7=	IP Plus	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-CH-12.0.7=	IP/FW	12.0(7)XK	8 MB	**64 MB SDRAM**
CD36-CHL-12.0.7=	IP/FW Plus IPSec 56	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-CHK2-12.0.7=	IP/FW Plus IPSec 3DES	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-CK2-12.0.7=	IP/ Plus IPSec 3DES	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-CL-12.0.7=	IP Plus IPSec 56	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-B-12.0.7=	IP/IPX/AppleTalk/DECnet	12.0(7)XK	8 MB	**64 MB SDRAM**
CD36-BP-12.0.7=	IP/IPX/AppleTalk/DECnet Plus	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-BHP-12.0.7=	IP/IPX/AT/DEC/FW Plus	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-AP-12.0.7=	Enterprise Plus	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-AL-12.0.7=	Enterprise Plus IPSec 56	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-AHK2-12.0.7=	Enterprise/FW Plus IPSec 3DES	12.0(7)XK	**16 MB**	**64 MB SDRAM**
CD36-AHL-12.0.7=	Enterprise/FW Plus IPSec 56	12.0(7)XK	**16 MB**	**64 MB SDRAM**

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 3600 Series Router Chassis[1]

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
AS3640-T1-48DM	3600 Access Concentrator, 48 MICA Modems, 2 PRI/T1, Ethernet, IP IOS
AS3640-E1-60DM	3600 Access Concentrator, 60 MICA Modems, Ethernet, IP IOS, no PRI

Cisco 3600 Series LAN/Combo Network Modules

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

NM-1FE2CT1=	1-port 100BASE-TX, 2-port Channelized T1/ISDN-PRI Network Module
NM-1FE2CT1-CSU=	1-port 100BASE-TX, 2-port Channelized T1/ISDN-PRI with CSU Network Module
NM-1FE2CE1B=	1-port 100BASE-TX, 2-port Channelized E1/ISDN-PRI (Balanced) Network Module
NM-1FE2CE1U=	1-port 100BASE-TX, 2-port Channelized E1/ISDN-PRI (Unbalanced) Network Module
NM-1FE2W=	1-port 10/100 Ethernet, 2 WIC Slots Network Module
NM-2FE2W=	2-port 10/100 Ethernet, 2 WIC Slots Network Module
NM-1FE1R2W=	1-port 10/100 Ethernet, 1-port Token Ring, 2 WIC Slots Network Module
NM-2W=	2 WIC Slots 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
WIC-2T=	2 -port Serial WAN Interface Card
WIC-2A/S=	2-port Async/Sync Serial WAN Interface Card

Cisco 3600 Multiflex Voice/WAN Interface Cards

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

Cisco 3600 Series Voice Interface (VIC) Cards

VIC-2E/M=	2-port Voice Interface Card - E&M
VIC-2FXO=	2-port Voice Interface Card - FXO
VIC-2FXS=	2-port Voice Interface Card - FXS
VIC-2BRI-S/T-TE=	2-port Voice Interface Card - BRI (S/T user side)
VIC-2FXO-EU=	2-port Voice Interface Card - FXO (for Europe)

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-COMPR=	Compression Module
NM-VPN/MP=	DES/3DES VPN Encryption NM for the 3620/3640 Mid-Platform

Cisco 3660 AIM Modules

AIM-VPN/HP=	DES/3DES VPN Encryption AIM for 3660 High Performance
AIM-COMPR4=	Data Compression AIM for the 3600 series

Cisco 3620/40 VPN Module

NM-VPN/MP=	DES/3DES VPN Encryption NM for 3620/3640 Mid Performance

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[2]

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-12.0.7=	IP only Feature Pack
CD36-CH-12.0.7=	IP/FW Feature Pack
CD36-CHK2-12.0.7=	IP/FW Plus IPSec 3DES Feature Pack
CD36-CK2-12.0.7=	IP Plus IPSec 3DES Feature Pack
CD36-CP-12.0.7=	IP Plus Feature Pack
CD36-CL-12.0.7=	IP Plus IPSec 56 Feature Pack
CD36-CHL-12.0.7=	IP/FW Plus IPSec 56 Feature Pack
CD36-B-12.0.7=	IP/IPX/AppleTalk/DECnet Feature Pack
CD36-BP-12.0.7=	IP/IPX/AppleTalk/DECnet Plus Feature Pack
CD36-BHP-12.0.7=	IP/IPX/AT/DEC/FW Plus Feature Pack
CD36-AP-12.0.7=	Enterprise Plus Feature Pack
CD36-AL-12.0.7=	Enterprise Plus IPSec 56 Feature Pack
CD36-AHL-12.0.7=	Enterprise/FW Plus IPSec 56 Feature Pack
CD36-AHK2-12.0.7=	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

Cisco 3600 Series

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-23	23 inch Rack Mount Kit for the 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 3662 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.)

2. Requires Plus feature pack.

For More Information

See the Cisco 3600 Series Web site: http://www.cisco.com/go/3600

Cisco AS5350 Series

The Cisco AS5350 is the newest edition of the AS5300 series. The AS5350 Universal Gateway is the only universal port-ready, one-rack-unit (1.75-inch) dual CT1/CE1/PRI gateway that provides carrier-class reliability in a modular design. It supports up to 60 analog or ISDN calls at line-rate performance (even when all the enhanced service features are enabled). This cost-effective platform is ideally suited for Internet service providers (ISPs) and enterprises requiring innovative remote-access services.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco AS5300	• Two port CT1/CE1/PRI compact and modular dial access server • High performance modem and ISDN call termination • Universal Port Ready

Key Features

- 1RU modular, compact, and high performance chassis that supports up to 60 modem and/or ISDN calls
- Universal Port Ready – voice, fax, and data calls can be terminated on the same DSP (today Data only; in future voice and fax will be supported via a software upgrade)
- Industry-leading price/performance in the remote access market
- Carrier Class Resiliency:
  - All dial feature cards are hot swappable
  - AC internal power supply with dual fans
  - Hot swappable fan tray
  - Redundant LAN/WAN Backhauls
  - Thermal Management and Environmental Monitoring
- Full Cisco IOS support (IP Plus and Enterprise Plus)
- VPN Support and Network Security
- High end routing (RIP, RIPv1, OSPF, EIGRP, BGPv4, IS-IS)
- Multiprotocol Applications (IP, IPX, AppleTalk, NetBEUI, etc.)
- WAN optimization features to help reduce WAN costs
- Two redundant backhaul methods:
  - Two 10/100 autosensing Ethernet LAN ports: 10BASET and 10/100BASET selectable
  - Two 8MB serial WAN ports for Frame Relay, HDLC, or PPP WAN backhaul

Specifications

Feature	Cisco AS5350
Processor	250-MHz RISC processor
Memory (default)	128 MB SDRAM, 64 MB Shared I/O, 8 MB Boot Flash, 32 MB System Flash
Maximum Calls	60 modem and 60 ISDN calls
DFC Slots	3
DFC Trunk Cards	2 CT1/CE1/PRI DFCs
DFC DSP Card	60-modem DFC
Egress Ports	Two 10/100-MB Ethernet ports, Two 8-MB serial ports, T1/E1 DS1 trunk DFC
LAN Protocols	IP, IPX, AppleTalk, DECnet, ARA, NetBEUI, bridging, HSRP
WAN Protocols	Frame Relay, PPP, HDLC (leased line)
Routing Protocols	Routing Information Protocol (RIP), RIPv2, OSPF, IGRP, EIGRP, BGPv4, IS-IS, AT-EIGRP, IPX-EIGRP, Next Hop Resolution Protocol (NHRP), AppleTalk Update-Based Routing Protocol (AURP)
Access Protocols	PPP, Serial Line Internet Protocol (SLIP), TCP Clear, IPXCP, ATCP, ARA, NBFCP, NetBIOS over TCP/IP, NetBEUI over PPP, protocol translation (PPP, SLIP, ARA, X.25, TCP, local-area transport [LAT], Telnet), and XRemote
Bandwidth Optimization	Multilink PPP (MP), MLP, TCP/IP header compression, Bandwidth Allocation Control Protocol (BACP), Bandwidth on demand, Nonfacility-associated signaling (NFAS), traffic shaping
Network Security	RADIUS or TACACS+, PAP or CHAP authentication, Local user/password database DNIS, CLID, call-type pre-authentication Inbound/outbound traffic filtering (including IP, IPX, AppleTalk, bridged traffic) Network Address Translation (NAT) and Dynamic access lists
Virtual Private Networking	IP Security (IPSec) and Policy enforcement (RADIUS or TACACS+) L2TP, Layer 2 Forwarding (L2F), and generic routing encapsulation (GRE) tunnels Firewall security and intrusion detection QoS features (committed access rate, Random Early Detection, Multiprotocol Label Switching, IP Precedence, policy-based routing)
Channelized T1	Robbed-bit signaling; loop start, immediate start, and wink start protocols
Channelized EI	CAS, E1 R2, leased line, Frame Relay
ISDN Protocols Supported	Sync mode PPP, V.120, V.110 at rates up to 38400 BPS Network-side ISDN and User-side ISDN DoVBS (Data over Voice Bearer Service)
Modem Protocols Supported	V.90 standard supporting rates of 56000 to 28000 in 1333-bps increments Fax out (transmission) Group 3, standards EIA 2388 Class 2 and EIA 592 Class 2.0, at modulations V.33, V.17, V.29, V.27ter, and V.21 K56Flex at 56000 to 32000 in 2000-bps increments ITU-T V.34 Annex 12 at 33600 and 31200 BPS ITU-T V.34 at 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, or 2400 BPS V.32bis 14400, 12000, 9600, 7200, 4800; V.32 9600, 4800; V.22bis 2400, 1200; V.21 300; Bell 103, 300; V.22 1200; V.23 1200/75 ITU-T V.42 (including MNP 2-4 and LAPM) error correction ITU-T V.42bis (1000 nodes) and Microcom Networking Protocol (MNP) 5 data compression Async-mode PPP
Wireless Protocols	V.110 and MNP10EC
Full Cisco IOS Support	IP Plus and Enterprise Plus
Console & Auxiliary Ports	Asynchronous serial (RJ-45)
Dimensions (HxWxD)	1.75 x 17.5 x 20.5 in

Competitive Products

- 3Com: TC1000
- Intel/Shiva: Lanrover series
- Lucent/Ascend: Max 3000 and Max 4000
- Lucent/Livingston: Portmaster 3
- Nortel/Bay: 5399

Distribution Part Numbers and Ordering Information

Cisco AS5350 Bundles[1]

AS535-2T1-AC-DATA	AC Chassis,60 Modems,2T1/PRI,48 Data licenses, IP Plus IOS
AS535-2E1-AC-DATA	AC Chassis,60 Modems,2 E1/PRI,60 Data licenses, IP Plus IOS

Cisco AS5350 Spare Chassis

AS5350=	AC 5350 Chassis with Motherboard, IP Plus

Cisco AS5350 Software

S535CP-12103XQ	Cisco AS5350 Series IOS IP PLUS
S535AP-12103XQ	Cisco AS5350 Series IOS ENTERPRISE PLUS

Cisco AS5350 Series Feature Licenses

FR5X-DATA-LIC	AS5000 series IOS Data License Per Port
FR5X-DATA-LIC=	AS5000 series IOS Data License Per Port
FR5X-PM-LIC	AS5000 series IOS Port Management License Per Port
FR5X-PM-LIC=	AS5000 series IOS Port Management License Per Port
FR5X-SS7-LIC	AS5000 series IOS SS7 License Per Port
FR5X-SS7-LIC=	AS5000 series IOS SS7 License Per Port

Cisco AS5350 Memory Options & Spares

MEM-8BF-AS535	AS5350 8MB Boot Flash
MEM-8BF-AS535=	AS5350 8MB Boot Flash
MEM-16BF-AS535	AS5350 16MB Boot Flash upgrade
MEM-16BF-AS535=	AS5350 16MB Boot Flash upgrade
MEM-32F-AS535	AS5350 32MB System Flash
MEM-32F-AS535=	AS5350 32MB System Flash
MEM-64F-AS535	AS5350 64MB System Flash upgrade
MEM-64F-AS535=	AS5350 64MB System Flash upgrade
MEM-128M-AS535	AS5350 128MB Main SDRAM
MEM-128M-AS535=	AS5350 128MB Main SDRAM
MEM-256M-AS535	AS5350 256MB Main SDRAM
MEM-256M-AS535=	AS5350 256MB Main SDRAM
MEM-512M-AS535=	AS5350 512MB Main SDRAM upgrade
MEM-64S-AS535	AS5350 64MB Shared I/O
MEM-64S-AS535=	AS5350 64MB Shared I/O
MEM-128S-AS535	AS5350 128MB Shared I/O upgrade
MEM-128S-AS535=	AS5350 128MB Shared I/O upgrade
MEM-UP1-AS535	16M Bootflash,64M System Flash,256M Main,128M Shared I/O Memory

Cisco AS5350 Spare DFC Boards

AS535-DFC-2CT1=	AS5350 Dual T1/PRI DFC card
AS535-DFC-60NP=	AS5350 60 Nextport DFC card
AS535-DFC-CC=	AS5350 DFC Carrier Card

Cisco AS5350 Series Power Cables Spares

CAB-ACA=	AC Power Cord, Australia
CAB-AC=	AC Power Cord, US
CAB-ACE=	AC Power Cord, Europe
CAB-ACI=	AC Power Cord, Italy
CAB-ACR=	Power Cord Argentina, Spare
CAB-ACU=	AC Power Cord, UK

Cisco AS5350 Spare Accessories

AS5350RM-19/24=	AS5350 19/24 Rack Mount Kit, Spare
AS535-FTA=	AS5350 Fan Tray Assembly, Spare
AS535-AC-PWR=	AS5350 AC Power Supply, Spare
AS535-DFC-CC=	AS5350 DFC Carrier Card

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 AS5350 Series Web site: http://www.cisco.com/go/as5350

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 Cisco 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—Cisco AS5800 and Cisco AccessPath.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco AS5300	• High performance async/ ISDN/VoIP
	• IP telephony option
	• Full range of Cisco IOS Software options
	• Best-of-breed modem management
	• Distributed access pools with WAN backhaul

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	Cisco AS5300
Fixed LAN Ports (connections)	2-port Ethernet (one 10BASE-T and one 100BASE-T)
Fixed WAN Ports (connections)	4-port PRI (T1/E1) 8-port PRI (T1/E1) 4-port T1/E1 sync serial
Modular Slots	3
Modules and Cards Available	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
Processor Speed (type)	150-MHz (R4700)
Maximum Async Connections	240
Maximum Voice Sessions	120
Flash Memory	8 MB Boot Flash (default) 16 MB System Flash (default)
Shared Memory	16 MB packet (default) 16 MB main (max)
DRAM Memory	64 MB
Power Supply	Single AC/DC (default) Internal redundant/loadsharing AC/DC (optional)
Dimensions (HxWxD)	3.5 x 17.5 x 18.25 in.
Service Category	13 (AS53-48DMM-CH) 14 (AS53-48-CH, AS53-96-CH, AS53-96-RPS-CH, AS53-192-DC-RPS-CH, and AS53-96DMM-RPS-CH)

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 Software 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-12.1.1=	14IP Feature Set	12.1(1)	8 MB	32 MB	16 MB	4 MB
CD53-CP-12.1.1=	15IP Plus Feature Set	12.1(1)	8 MB	32 MB	16 MB	4 MB
CD53-CL-12.1.1=	15IP Plus IPSec 56 Feature Set	12.1(1)	8 MB	32 MB	16 MB	4 MB
CD53-B-12.1.1=	2IP/IPX Desktop Feature Set	12.1(1)	8 MB	32 MB	16 MB	4 MB
CD53-BP-12.1.1=	16IP/IPX Desktop Plus Feature Set	12.1(1)	8 MB	32 MB	16 MB	4 MB
CD53-A-12.1.1=	14Enterprise Feature Set	12.1(1)	8 MB	64 MB	16 MB	8 MB
CD53-AP-12.1.1=	15Enterprise Plus Feature Set	12.1(1)	8 MB	64 MB	16 MB	8 MB
CD53-AL-12.1.1=	15Enterprise Plus IPSec 56 Feature Set	12.1(1)	8 MB	64 MB	16 MB	8 MB
CD53-AW-12.1.1=	15Enterprise Plus 40 Feature Set	12.1(1)	8 MB	64 MB	16 MB	8 MB

Distribution Part Numbers and Ordering Information

Cisco AS5300 Series Access Server Bundles[1]

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

Cisco AS5300 VoIP Bundles

AS5300-96VOIP-A	AS5300 VoIP Gateway-96 Voice Channels/4T1+,IOS IP+ S53CVP

Cisco AS5300 Series Modem Management Technology Licenses[2]

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(5)T=	Cisco AS5300, IP only Feature Pack
CD53-CP-12.0(5)T=	Cisco AS5300, IP Plus Feature Pack
CD53-CL-12.0(5)T=	Cisco AS5300, IP Plus IPSec 56 Feature Pack
CD53-CW-12.0(5)T=	Cisco AS5300, IP Plus 40 Feature Pack
CD53-B-12.0(5)T=	Cisco AS5300, Desktop Feature Pack
CD53-BP-12.0(5)T=	Cisco AS5300, Desktop Plus Feature Pack
CD53-A-12.0(5)T=	Cisco AS5300, Enterprise Feature Pack
CD53-AP-12.0(5)T=	Cisco AS5300, Enterprise Plus Feature Pack
CD53-AL-12.0(5)T=	Cisco AS5300, Enterprise Plus IPSec 56 Feature Pack
CD53-AW-12.0(5)T=	Cisco AS5300, Enterprise Plus 40 Feature Pack
CD53-A-12.1.1=	Cisco AS5300, 14Enterprise Feature Set
CD53-AL-12.1.1=	Cisco AS5300, 15Enterprise Plus IPSec 56 Feature Set
CD53-AP-12.1.1=	Cisco AS5300, 15Enterprise Plus Feature Set
CD53-AW-12.1.1=	Cisco AS5300, 15Enterprise Plus 40 Feature Set
CD53-B-12.1.1=	Cisco AS5300, 2IP/IPX Desktop Feature Set
CD53-BP-12.1.1=	Cisco AS5300, 16IP/IPX Desktop Plus Feature Set
CD53-C-12.1.1=	Cisco AS5300, 14IP Feature Set
CD53-CL-12.1.1=	Cisco AS5300, 15IP Plus IPSEC 56 Feature Pack
CD53-CP-12.1.1=	Cisco AS5300, 15IP Plus Feature Set

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
MEM-32F-AS53=	Cisco AS5300 System Flash Upgrade (from 16 MB to 32 MB), spare
MEM-128M-AS53=	128 MB DRAM memory for 5300

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

Cisco AS5300 Series Basic Maintenance

CON-SNT-PKG13	SMARTnet Maintenance for AS53-48DMM-CH
CON-SNT-PKG14	SMARTnet Maintenance for AS53-48-CH, AS53-96-CH, AS53-96-RPS-CH, AS53-192-DC-RPS-CH, and AS53-96DMM-RPS-CH

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. 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco AS5300/Voice Gateway	• 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

Key Features

- Industry leading and award-winning H.323V2 and MGCP compliant Voice Gateway
- Supports up to 96 voice calls in 4 T1 configuration
- Supports up to 120 voice/fax calls in 4 E1 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	Cisco AS5300/Voice Gateway
Fixed LAN Ports (connections)	2-port Ethernet (one 10BASE-T, one 10/100BASE-T, FE)
Fixed WAN Ports (connections)	4-port sync serial 4 T1 (Cisco AS5300 - 96VoIP) 4 E1 (Cisco AS5300 -120VoIP)
Modular Slots	3 (one for Quad T1/E1, two for VoIP feature cards)
Modules and Cards Available	All VoIP modules are already installed with this configuration
Maximum Voice/Fax Channels	96 voice channels with 4 T1 config;120 with 4 E1 config
Processor Speed (type)	150-MHz (R4700 RISC)
Flash Memory	16 MB
DRAM Memory	64 MB main DRAM
Power Supply	Single AC/DC (default) Internal redundant/loadsharing AC/DC (optional)
Dimensions (HxWxD)	3.4 x 17.5 x 18.25 in.
Service Category	15

Competitive Products

- 3Com: Total Control Telephony Gateway
- Clarent: Gateway
- Lucent: MAX 6000 MultiVoice Gateway, MAX TNT
- Nuera: F200ip
- VocalTec: Telephony Gateway/Ensemble Architecture

Distribution Part Numbers and Ordering Information

Cisco AS5300/Voice Gateway[1]

AS5300-96VoIP-A   A fully configured, 96 channel, Cisco AS5300/Voice Gateway system for T1/North America applications; it includes:

Cisco AS5300 base unit with AC power supply (DC or dual/redundant optional)

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

AS5300-120VoIP-A   A fully configured, 120 channel, Cisco AS5300/Voice Gateway system for E1/International applications. It includes:

Cisco AS5300 base unit with AC power supply (DC or dual/redundant optional)

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

Cisco AS5300/Voice Gateway Series Basic Maintenance

CON-SNT-PKG15   Cisco AS5300-96VOIP-A 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 AS5300 Web site: http://www.cisco.com/go/as5300

Cisco AS5400 Universal Gateway[1]

The Cisco AS5400 Universal Gateway is the highest-density, carrier-class access server on the market, offering unparalleled capacity in only two rack units (2RUs). Its high density (up to 1 CT3 or 14,112 ports in a 7' rack), low power consumption (6.6A at 48 volts DC per CT3), and universal port readiness make it ideal for many network deployment architectures, especially colocation environments and mega-points of presence (mega-POPs). The Cisco AS5400 offers Signaling System 7 (SS7) media gateway interoperability and supports a wide range of Internet protocol (IP)-based value-added services such as wholesale dial, access Virtual Private Network (VPN), and mobile wireless solutions. As a carrier-class access server, the Cisco AS5400 has hot-swappable cards, an internal redundant power supply, and environmental monitoring. Its rich set of Cisco IOS features enables Internet service providers (ISPs) and enterprise network managers to meet traditional dial-in needs, while supporting the migration to New World technologies.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco AS5400	• High density in a small footprint • Universal Port • Low power per port • CT3 ingress • High performance async/ISDN/VoIP/Wireless • Flexible redundant backhaul methods

Key Features

- Universal port provides the ability to answer data, voice, or fax calls on the same DSP

- Highest density—14,112 ports per 7-foot rack

- Only 2RU CT3 universal gateway on the market

- Lowest power per port—2.8A AC/6.6A DC per CT3

- Only 2RU universal gateway with hot-swappable cards, internal redundant power supply, and environmental monitoring

- Cisco SS7 media gateway interoperability

- Ideal for multiple-network deployment architectures (for example, co-location, mega-POPs)

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

Specifications

Feature	Cisco AS5400
Processor Speed (type)	250-MHz (RM7000 RISC processor)
Demonstrated Speed	50,000 packet-per-second fast switching
Memory	SDRAM: 256 MB (default); 512 MB (max) Shared I/O: 64 MB (default); 128 MB (max) Boot Flash: 8 MB (default); 16 MB (max) System Flash: 32 MB (default); 64 MB (max) Level 3 Cache: 2 MB
Maximum Supported Calls	648 modem calls or 248 ISDN calls (CT3) 480 modem or ISDN calls (E1) 384 modem or ISDN calls (T1)
DFC Slots	7
DFC Trunk Cards	CT3 DFC Eight T1/E1/PRI DFC
DFC DSP Card	108-modem DFC
Egress Ports	Two 10/100 MB Ethernet ports Two 8 MB serial ports T1, E1, or CT3 DS1 trunks
Modem Protocols Supported	V.90 standard supporting rates of 56000 to 28000 in 1333-bps increments Fax out (transmission) Group 3, standards EIA 2388 Class 2 and EIA 592 Class 2.0, at modulations V.33, V.17, V.29, V.27ter, and V.21 K56Flex at 56000 to 32000 in 2000-bps increments ITU-T V.34 Annex 12 at 33600 and 31200 bps ITU-T V.34 at 28800, 26400, 24000, 21600, 19200, 16800, 14400, 12000, 9600, 7200, 4800, or 2400 bps V.32bis 14400, 12000, 9600, 7200, 4800; V.32 9600, 4800; V.22bis 2400, 1200; V.21 300; Bell 103, 300; V.22 1200; V.23 1200/75 ITU-T V.42 (including MNP 2-4 and LAPM) error correction ITU-T V.42bis (1K nodes) and MNP 5 data compression Async mode PP
ISDN Protocols	Sync mode PPP V.120 V.110 at rates up to 38400 bps Network-side ISDN User-side ISDN
Wireless Protocols	V.110 MNP10EC
Console and Auxiliary Ports	Asynchronous serial (RJ-45)
Power Supply Options	Dual redundant internal AC power supply Dual redundant internal DC power supply

Competitive Products

- 3 COM: TC 1000
- Alcatel: X1000
- Lucent: Max 6000

For More Information

See the Cisco AS5400 Web site: http://www.cisco.com/go/as5400

Cisco AS5800 Series

The Cisco high-end dial products are high-performance, high-density universal access servers that deliver hybrid asynchronous serial, voice, and ISDN line service to accommodate both mobile users and high-bandwidth users. By terminating analog modems, voice, and ISDN calls on the same chassis from the same trunk line, the Cisco 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco AS5800	• 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 VoIP calls or 2016 modem calls • Wholesale dial applications
Cisco AS5800 Access Server/Voice Gateway	• Hybrid async, ISDN, and VoIP • Up to 78 T1/E1 or up to 3 CT3 ingress trunks • Wide variety of LAN and WAN backhaul options • Up to 1440 ISDN or 2016 modem connections • Up to 1344 voice ports • G.711, G.729, G.723.1 voice CODECs and Fax Relay capability

Key Features

- Universal access provides ability to answer voice, ISDN, and 56K modems

- H.323V2 compliant Voice Gateway; supports single-stage and two-stage dial with Integrated Voice Response (IVR) and Fax Relay applications

- Key component of Dial Access Stack Architecture (DASA)

- NEBS Level 3 compliant

- Large scale system management with Cisco's System Controller

- Up to 72 Channelized T1/E1/PRI or 3 Channelized T3 interfaces

- Distributed, multiprocessor design for maximum performance and growth

- SS7 support

- Wholesale dial using Resource Pool Management

- 1 or 2 router shelves can be connected

Specifications

Feature	Cisco AS5800
Expansion Slots	14
Maximum Port Capacity	1344 for voice and 2016 for data; 1440 for ISDN only calls
Processor Speed (type)	RS7206VXR Router shelf: 300 MHz RS7206 Router shelf: 20 MHz
Flash Memory	4 MB Boot Flash 20-40 MB PCMCIA
Shared Memory	4 MB SRAM
DRAM Memory	256 MB (RS726VXR) 128 MB (RS7206)
Ingress Options	CT3, T1, E1
Egress Options	Ethernet, Fast Ethernet, Gigabit Ethernet, Serial, HSSI, FDDI, ATM, POS, T1, E1, T3, OC3, and others
Power Supply	Redundant/loadsharing AC or DC
Dimensions (HxWxD)	33.25 x 17.5 x 24 in.

Competitive Products

- 3Com: TCH HiPer
- Lucent: PM-4, MAX TNT, APX 8000
- Nortel: Aptis CVX 1800

For More Information

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

Cisco AS5800 Voice Gateway[1]

The Cisco high-end dial products are high-performance, high-density universal access servers that deliver hybrid asynchronous serial, voice, and ISDN line service to accommodate both mobile users and high-bandwidth users. By terminating analog modems, voice, 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 and high-speed ISDN access needs, while supporting the growing demand for VoIP services.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco AS5800	• 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 VoIP calls or 2016 modem calls • Wholesale dial applications
Cisco AS5800 Access Server/Voice Gateway	• Hybrid async, ISDN, and VoIP • Up to 72 T1/E1 or up to 3 CT3 ingress trunks • Wide variety of LAN and WAN backhaul options • Up to 1440 ISDN or 2016 modem connections • Up to 1344 voice ports • G.711, G.729, G.723.1 voice CODECs and Fax Relay capability

Key Features

- Universal access provides ability to answer voice, ISDN, and 56K modems

- H.323V2 and V3 compliant Voice Gateway; supports a wide range of VoIP applications

- Key component of Dial Access Stack Architecture (DASA)

- NEBS Level 3 compliant

- Large scale system management with Cisco's System Controller

- Up to 72 Channelized T1/E1/PRI or 3 Channelized T3 interfaces

- Distributed, multiprocessor design for maximum performance and growth

- SS7 support

- Wholesale dial using Resource Pool Management

- 1 or 2 router shelves can be connected

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

Specifications

| Feature	Cisco AS5800
Expansion Slots	14
Maximum Port Capacity	1344 for voice and 2016 for data; 1440 for ISDN only calls
Processor Speed (type)	RS7206VXR Router shelf: 300 MHz
Flash Memory	4 MB Boot Flash 20-40 MB PCMCIA
Shared Memory	4 MB SRAM
DRAM Memory	256 MB (RS726VXR)
Ingress Options	CT3, T1, E1
Egress Options	Ethernet, Fast Ethernet, Gigabit Ethernet, Serial, HSSI, FDDI, ATM, POS, T1, E1, T3, OC3, and others
Power Supply	Redundant/loadsharing AC or DC
Dimensions (HxWxD)	33.25 x 17.5 x 24 in.

Competitive Products

- 3Com: TCH HiPer
- Lucent: PM-4, MAX TNT, APX 8000
- Nortel: Aptis CVX 1800

For More Information

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

Cisco 7100 Series

The Cisco 7100 series VPN router is a high-end, integrated VPN solution that melds high-speed, industry-leading routing with a comprehensive suite of advanced site-to-site 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 deliver self-healing, self-defending, VPN platforms that better and more cost-effectively accommodate remote-office and extranet connectivity using public data networks. The Cisco 7100 series VPN router offers specific hardware configurations optimized for VPN applications and network topologies. Optional embedded WAN and Fast Ethernet interfaces combined with high-performance routing and rich VPN services provide turnkey VPN routing solutions.
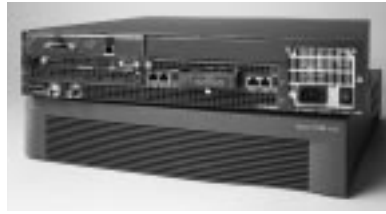
When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 7120	• Entry-level Cisco 7100 Series Router designed for large branch or central site VPN with VPN services throughput of up to 50Mbps
	• Designed primarily for site-to-site VPN deployments with incidental remote access requirements
Cisco 7140	• High-end site-to-site VPN platform for central site VPN applications with VPN services throughput up to full duplex DS-3 speeds (90 Mbps)
	• Provides superior routing and VPN services performance for central site environments, as well as dual WAN interfaces and power supplies for increased solution reliability

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 10/100BASE-T Fast Ethernet ports for connectivity to the corporate LAN

- Integrated Services Module (ISM) can be installed to support up to 2000 simultaneous tunneling sessions with 90 Mbps encryption performance and Windows 95/98/NT4.0 and Windows 2000 compatibility for remote access

Specifications

Feature	Cisco 7120	Cisco 7140
Embedded Dual 10/100BASE-T Fast Ethernet Interfaces	Autosensing, RJ-45	Autosensing, RJ-45
Embedded WAN interface (by model)	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
Physical Interfaces	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
WAN/LAN Interface Expansion Slot	1 slot	1 slot
Supported Network Port Adapters	Fast Ethernet 100BASE-TX and 100BASE-FX Fast Ethernet/ISL TX and ISL FX Ethernet 10BASE-T and 10BASE-FL Dedicated Token Ring ATM Synchronous Serial HSSI ISDN BRI High Capacity Digital Voice	Same as Cisco 7120
Service Module Slot	1 slot	1 slot
Supported Service Modules	Integrated Services Module (ISM)	Integrated Services Module (ISM)
Console and Auxiliary Ports	1 of each, RJ-45 interface	1 of each, RJ-45 interface
SDRAM	64 MB packet 64 MB system (expandable to 256 MB)	64 MB packet 64 MB system (expandable to 256 MB)
Flash Memory	48 MB	48 MB
PCMCIA Slots for Flash Memory	2	2
Power Supply	Single AC	Dual AC
Dimensions (HxWxD)	3.5 in. x 17.5 in. x 18.25 in.	3.5 in. x 17.5 in. x 18.25 in.
Service Category	13	14

Competitive Products

- 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 Software 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[1]
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-FLD128M=   Cisco 7100 I/O PCMCIA Flash Disk, 128 MB, Spare
MEM-7100-FLD48M=   Cisco 7100 I/O PCMCIA Flash Disk, 48 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 Port Adapters
PA-4R-DTR=   Port Adapter:4-Port Dedicated Token Ring,4/16Mbps, HDX/FDX
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.)

For More Information

See the Cisco 7100 Series Web site: 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, five 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 7204VXR	• 4-slot chassis • 200, 225, 300 kpps (NPE-200, NPE-225 or NPE-300) or accelerated services (NSE-1) • Higher backplane bandwidth • For using the MIX bus in multiservice applications
Cisco 7206	• 6-slot chassis • 200 or 225 kpps
Cisco 7206VXR	• 6-slot chassis • 200, 225, 300 kpps (NPE-200, NPE-225 or NPE-300) or accelerated services (NSE-1) • Higher backplane bandwidth • For using the MIX bus in multiservice applications

Key Features

- High performance switching—Supports high-speed media and high-density configurations; with its RISC-based and SRAM- or SDRAM-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, 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

Competitive Products

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

Specifications

Feature	Cisco 7204VXR	Cisco 7206	Cisco 7206VXR
Fixed Ports	None	None	None
Modular Slots	4	6	6
LAN Port Adapters	4- or 8-port 10BASE-T 5-port 10BASE-FL 1-port 100BASE-TX 1-port 100BASE-FX 2-port 100BASE-TX (TR ISL) 2-port 100BASE-FX (TR ISL) 1-port Gigabit Ethernet[1] 4-port Token Ring 4/16Mbps, Half/Full Duplex[2] 12-port Ethernet/2-port Fast Ethernet Etherswitch	4- or 8-port 10BASE-T 5-port 10BASE-FL 1-port 100BASE-TX 1-port F100BASE-FX 2-port 100BASE-TX (TR ISL) 2-port 100BASE-FX (TR ISL) 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	Same as Cisco 7204VXR
Serial Port Adapters	4-port Serial, enhanced 8-port Serial, V.35, RS-232, or X.21 4-port Serial E1 (G.703)	4-port Serial, enhanced 8-port Serial, V.35, RS-232, or X.21 4-port Serial E1 (G.703)	Same as Cisco 7204VXR
High Speed Serial Port Adapters	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)	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 7204VXR
Multichannel and ISDN Port Adapters	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	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	Same as Cisco 7204VXR
Digital Voice Trunk Port Adapter	2-port T1/E1 High Capacity Digital Voice 2-port T1/E1 Medium Capacity Digital Voice	2-port T1/E1 High Capacity Digital Voice 2-port T1/E1 Medium Capacity Digital Voice	Same as Cisco 7204VXR
SONET Port Adapters	2- port Dynamic Packet Transport OC12/STM4 1-port Packet Over SONET OC3/STM1	2- port Dynamic Packet Transport OC12/STM4 1-port Packet Over SONET OC3/STM1	Same as Cisco 7204VXR
ATM Port Adapters	1-port ATM OC3/STM1 multimode and single mode 1-port ATM Enhanced OC12/STM4 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	1-port ATM OC3/STM1 multimode and single mode 1-port ATM Enhanced OC12/STM4 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 7204VXR
Mainframe Channel Connection Port Adapters	1-port ESCON Mainframe Channel Port Adapter 1-port Parallel Mainframe Channel Port Adapter	1-port ESCON Mainframe Channel Port Adapter 1-port Parallel Mainframe Channel Port Adapter	Same as Cisco 7204VXR
I/O Cards	FE, 2FE/E, and GE + E	FE	FFE, 2FE/E, and GE + E
Service Adapter Modules	Encryption	Compression and Encryption	Encryption
Processor Speed (type)	200, 250, or 263 MHz	200 or 250MHz	Same as Cisco 7204VXR
Network Processing Engines	NPE-400 NPE-300 NPE-200 NPE-225 NSE-1	NPE-200 NPE-225	NPE-400 NPE-200 NPE-225 NPE-300 NSE-1

Feature	Cisco 7204VXR	Cisco 7206	Cisco 7206VXR
Flash PCMCIA Memory	20 MB (default); 110 MB (max)	20 MB (default); 110 MB (max)	20 MB (default); 110 MB (max)
DRAM Memory	64 MB (default) 256 MB (max)	64 MB (default) 256 MB (max)	64 MB (default) 256 MB (max)
Power Supply	AC or DC, dual optional	AC or DC, dual optional	AC or DC, dual optional
Dimensions (HxWxD)	5.25 x 16.8 x 17 in.	5.25 x 16.8 x 17 in.	5.25 x 16.8 x 17 in.
Service Category	13	14	14

1. Requires a NPE-300 or later processor

2. PA-4R-DTR and PA-4R-FDX not supported

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 Required
CD72-C-12.0T=	IP	12.0(5)T	20 MB	64 MB
CD72-CL-12.0T=	IP IPSEC 56	12.0(5)T	20 MB	64 MB
CD72-CK2-12.0T=	IP IPSEC 3DES	12.0(5)T	20 MB	64 MB
CD72-CH-12.0T=	IP/FW	12.0(5)T	20 MB	64 MB
CD72-CHL-12.0T=	IP/FW IPSEC 56	12.0(5)T	20 MB	64 MB
CD72-CHK2-12.0T=	IP/FW IPSEC 3DES	12.0(5)T	20 MB	64 MB
CD72-BS-12.0T=	Desktop/IBM	12.0(5)T	20 MB	64 MB
CD72-BSL-12.0T=	Desktop/IBM IPSEC 56	12.0(5)T	20 MB	64 MB
CD72-BHS-12.0T=	Desktop/IBM/FW	12.0(5)T	20 MB	64 MB
CD72-BHSL-12.0T=	Desktop/IBM/FW IPSEC 56	12.0(5)T	20 MB	64 MB
CD72-BHK2-12.0T=	Desktop/IBM/FW IPSEC 3DES	12.0(5)T	20 MB	64 MB
CD72-A-12.0T=	Enterprise	12.0(5)T	20 MB	64 MB
CD72-AL-12.0T=	Enterprise IPSEC 56	12.0(5)T	20 MB	64 MB
CD72-AK2-12.0T=	Enterprise IPSEC 3DES	12.0(5)T	20 MB	64 MB
CD72-AH-12.0T=	Enterprise/FW	12.0(5)T	20 MB	64 MB
CD72-AHL-12.0T=	Enterprise/FW IPSEC 56	12.0(5)T	20 MB	64 MB
CD72-AHK2-12.0T=	Enterprise/FW IPSEC 3DES	12.0(5)T	20 MB	64 MB

Distribution Part Numbers and Ordering Information

Cisco 7200 Series Base Chassis, NPE, and I/O Controller[1]

CISCO7206-CH	Cisco 7206 Modular Router, 6 Slots, AC Power
CISCO7204VXR-CH	Cisco 7204VXR, 4-slot chassis, 1 AC Supply
CISCO7206VXR-CH	Cisco 7206VXR, 6-slot chassis, 1 AC Supply
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
NPE-400=	Network Processing Engine 400, Spare
NSE-1	NSE-1 Network Services Engine
CISCO7206/200	7206 Bundle with NPE-200 and I/O Controller W/O FE
CISCO7206VXR/300	7206VXR Bundle with NPE-300 and I/O Controller with FE
CISCO7204VXR/225	7204VXR Bundle with NPE-225, FE and IOS with FE

CISCO7206VXR/225	7206VXR Bundle with NPE-225, FE and IOS with FE
CISCO7204VXR/1C-E	7204VXR System with NPE-225, IOS and ESCON Port Adapter
CISCO7204VXR/VPN	7204VXR System with NPE-300, ISA, I/O with FE and IOS
CISCO7206VXR/NSE-1	7206VXR Bundle with NSE-1 and I/O Controller with FE
CISCO7204VXR/VOICE	7204VXR w/ NPE-225, Voice PA (12 DSPs), I/O controller w/ FE
CISCO7206VXR/400/2FE	7206VXR with NPE-400 and I/O Controller with 2 FE/E Ports

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
CD72-A-12.1T=	CISCO 7200 Enterprise Feature Pack
CD72-AH-12.1T=	CISCO 7200 Enterprise/FW/IDS Feature Pack
CD72-AHK2-12.1T=	CISCO 7200 Enterprise/FW/IDS IPSEC 3DES Feature Pack
CD72-AHL-12.1T=	CISCO 7200 Enterprise/FW/IDS IPSEC 56 Feature Pack
CD72-AK2-12.1T=	CISCO 7200 Enterprise IPSEC 3DES Feature Pack
CD72-AL-12.1T=	CISCO 7200 Enterprise IPSEC 56 Feature Pack
CD72-BS-12.1T=	CISCO 7200 Desktop/IBM Feature Pack
CD72-C-12.1T=	CISCO 7200 IP Feature Pack
CD72-CH-12.1T=	CISCO 7200 IP/FW/IDS Feature Pack
CD72-CHK2-12.1T=	CISCO 7200 IP/FW/IDS IPSEC 3DES Feature Pack
CD72-CHL-12.1T=	CISCO 7200 IP/FW/IDS IPSEC 56 Feature Pack
CD72-CK2-12.1E=	CISCO 7200 IP IPSEC 3DES Feature Pack
CD72-CL-12.1T=	CISCO 7200 IP IPSEC 56 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*
FR-BUS72	Broadband User Services Feature License

Cisco 7200 Series Port Adapters

PA-4E=	4-port Ethernet 10BASE-T Port Adapter
PA-8E=	8-port Ethernet 10BASE-T Port Adapter
PA-5EFL=	5-port Ethernet 10BASE-FL Port Adapter
PA-4R=[2]	4-port Token Ring 4/16 Mbps Port Adapter
PA-4R-FDX=[2]	4-port Token Ring 4/16Mbps, Full Duplex Port Adapter
PA-FE-TX=	1-port Fast Ethernet 100BASE-TX Port Adapter
PA-FE-FX=	1-port Fast Ethernet 100BASE-FX Port Adapter
PA-F-MM=[2]	1-port FDDI Multimode Port Adapter
PA-F-SM=[2]	1-port FDDI Single-mode Port Adapter
PA-F/FD-MM=[2]	1-port FDDI Full Duplex Multi-Mode Port Adapter
PA-F/FD-SM=[2]	1-port FDDI Full Duplex Single-Mode Port Adapter
PA-4R-DTR=	4-port Token Ring 4/16Mbps, Dedicated Token Ring 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-H=	1-port HSSI Port Adapter
PA-2H=	2-port HSSI Port Adapter
PA-4B-U=	4-port BRI Port Adapter, U Interface

Cisco 7200 Series

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-A1-OC3MM=	1-port ATM OC3 Multimode Port Adapter
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-A3-T3=	ATM Port Adapter with T3 physical interface
PA-CT3/4T1=[2]	Channelizes DS3 Port Adapter with 4 T1 breakout connectors
PA-MC-2T1=	2 port multichannel T1 port adapter with integrated CSU/DSUs
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-2T3+=	2 port channelized T3 port adapter with BNC connectors
PA-SRP-OC12MM=	2 SC Duplex port dual wide OC12c multi-mode port adapter
PA-SRP-OC12SMI=	2 SC Duplex port dual wide OC12c single-mode intermediate reach port adapter
PA-SRP-OC12SML=	2 SC Duplex port dual wide OC12c single-mode long reach port adapter
PA-SRP-OC12SMX=	DPT-OC12 Singe-mode extended reach PA
PA-VXB-2TE1=	2 port T1/E1 medium capacity digital voice port adapter, Spare
PA-VXC-2TE1=	2 port T1/E1 high capacity digital voice port adapter, Spare
PA-VXB-2TE1+=	2 port T1/E1 moderate capacity enhanced voice PA
PA-VXC-2TE1+=	2 port TE1 hi-capacity enhanced voice PA
SA-ENCRYPT=	Encryption Service Adapter - Spare

Cisco 7200 Series Service Adapters

SA-COMP/1=[2]	Service Adapter; Compression (64 VC's Stac) - Spare (non VXR Chassis only)
SA-COMP/4=[2]	Service Adapter; Compression (256 VC's Stac) - Spare (non VXR chassis only)
SA-ISA	Integrated Services Adaptor for encryption on 7200 VXR platform

Cisco 7200 Series Memory and Memory Upgrades

MEM-NPE-32MB=	32 MB Memory Upgrade Kit for NPE-200/NPE-150/NPE-100
MEM-NPE-64MB=	64 MB Memory Upgrade Kit for NPE-200/NPE-150/NPE-100
MEM-NPE-128MB=	128 MB Memory Upgrade Kit for NPE-200/NPE-150/NPE-100
MEM-I/O-FLC20M=	Cisco 7200 I/O PCMCIA Flash Memory, 20 MB
MEM-I/O-FLD48M=	Cisco 7200 I/O PCMCIA Flash Memory, 48 MB
MEM-I/O-FLD128M=	Cisco 7200 I/O PCMCIA Flash Memory, 128 MB
MEM-SD-NPE-32MB=	32 MB Memory Upgrade Kit for NPE-300/NPE-225/NPE-175
MEM-SD-NPE-64MB=	64 MB Memory Upgrade Kit for NPE-300/225/175
MEM-SD-NPE-128MB=	128 MB Memory Upgrade Kit for NPE-300/NPE-225/NPE-175
MEM-SD-NPE-256MB=	256 MB 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
ACS-72RDS-21R	Cisco 7200 Rack Density System
ACS-72RDS-23R	Cisco 7200 Rack Density System

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.)

2. Not supported on the 7200 VXR chassis. For additional port adapter compatibility information for the 7200 VXR, see: http://www.cisco.com/warp/public/770/fn3028.html.

For More Information

See the Cisco 7200 Series Web site: http://www.cisco.com/go/7200

Cisco 7500 Series

The Cisco 7500 series is Cisco's premier high-end, multiprotocol platform, now with twice the performance and enhanced High Availability. 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.

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

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 (VIP4) and Cisco Express Forwarding, the Cisco 7500 series system capacity can exceed two 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

- 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

- Unmatched interface flexibility—The Cisco 7000 series supports a broad selection of Interface Processors (IPs) and Port Adapters (PAs). Port adapters are shared with the Cisco 7200, which simplifies sparing and protects customer investment in interfaces

- High Availability—Enhanced HA features and capabilities include redundant route processors, power supplies, and software fault isolation and failover capabilities

Cisco 7500 Series

Specifications

Feature	Cisco 7505	Cisco 7507	Cisco 7513	Cisco 7576
Routers per Chassis	1	1	1	2
Fixed Ports	None	None	None	None
Modular Slots	5	7	13	13
Interface Processor Slots	4	5	11	11
RSPs	1 (100-MHz RSP2, 200-MHz RSP4+, or 250-MHz RSP8)	2 (optional dual RSPs; 100-MHz RSP2, 200-MHz RSP4+, or 250-MHz RSP8)	2 (optional dual RSPs; 100-MHz RSP2, 200-MHz RSP4+, or 250-MHz RSP8)	2 (optional dual RSPs; 100-MHz RSP2, 200-MHz RSP4+, or 250-MHz RSP8)
LAN Port Adapters	4- or 8-port Ethernet 10BASE-T 5-port Ethernet 10BASE-FL 1-port Fast Ethernet 100BASE-TX 1-port Fast Ethernet 100BASE-FX 2-port Fast Ethernet/ISL 100BASE-TX (TR ISL) 2-port Fast Ethernet/ISL 100BASE-FX (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
Serial Port Adapters	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
High-Speed Serial Port Adapters	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) 1- and 2-port T3 Serial, Enhanced	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
Multichannel and ISDN Port Adapters	2-port Enhanced Multichannel T3 1-port Multichannel T3 1-port Multichannel E3 2-, 4-, & 8-port Multichannel T1 (CSU/DSU & PRI) 2- & 8-port Multichannel E1 (G.703/G.704 & PRI) 8-port Multichannel DS1 with integrated DSUs	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
Digital Voice Trunk Port Adapter	2-port T1/E1 High Capacity Digital Voice, Enhanced 2-port T1/E1 Moderate Capacity Digital Voice, Enhanced	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
SONET Port Adapters	1-port Packet Over SONET OC3/STM1	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
ATM Port Adapters	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
Cisco Mainframe Channel Connection Port Adapters	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
Advanced Technology Interface Processors	1-port Gigabit Ethernet 1-port Gigabit Ethernet Enhanced 1-port Channelized DS3 with 4 T1 breakout ports 2-port Dynamic Packet Transport OC12/STM4	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
Hardware Service Adapters	Compression Service Adapter (CSA) Encryption Service Adapters (ESA)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
VIP Modules	VIP2-40, VIP2-50, VIP4-50, VIP4-80	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
Processor	Mips RISC	Mips RISC	Mips RISC	Mips RISC

Cisco 7500 Series

Feature	Cisco 7505	Cisco 7507	Cisco 7513	Cisco 7576
High-Speed Backplane	5 Bus Slots 1 Gbps backplane 4 interface processor slots 1 RSP slot	7 Bus Slots 2 Gbps backplane 5 interface processor slots 2 RSP slots	13 Bus Slots 2 Gbps backplane 11 interface processor slots 2 RSP slots	13 Bus Slots 4 Gbps backplane 11 interface processor slots 2 RSP slots
Boot Memory	256 KB	256 KB	256 KB	256 KB
Shared Memory	16 MB (min); 40 MB (max)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
DRAM Memory	32 MB (RSP2 default) 64 MB (RSP4+, RSP8 default) 128 MB (RSP2 max) 256 MB (RSP4+ max) 256 MB (RSP8 max)	Same as Cisco 7505	Same as Cisco 7505	Same as Cisco 7505
Power Supply	AC or DC	AC, dual AC/DC, dual DC	AC, dual AC/DC, dual DC	2 standard, AC, dual AC/DC, dual DC
Dimensions (HxWxD)	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 Processor[1]

RSP4+=	Cisco 7500 Series Route Switch Processor 4+
RSP8=	Cisco 7500 Series Route Switch Processor 8

Cisco 7500 Series Bundles

CISCO7507-CH	CISCO7507 w/pwr, IP, RSP2,32 MB,16MFL
CISCO7507/4-CH	CISCO7507 w/pwr, IP, RSP4,32 MB,16MFL
CISCO7507/8-MX-CH	Cisco 7507, 7 Slot, Dual Bus, 1 RSP8, 1 PS, w/IOS
CISCO7513-CH	CISCO7513 w/pwr, IP, RSP2,32 MB,16MFL
CISCO7513/4-CH	CISCO7513 w/pwr, IP, RSP4,32 MB,16MFL

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 32 MB DRAM Upgrade Kit
MEM-RSP4-64M=	RSP4 64 MB DRAM Option
MEM-RSP4-128M=	RSP4 128 MB DRAM Upgrade Kit
MEM-RSP4-256M=	RSP4 256 MB DRAM Upgrade Kit
MEM-RSP8-FLC20M=	RSP8 Flash Card: 20MB Kit
MEM-RSP8-64M=	RSP8 64 MB DRAM Option
MEM-RSP8-128M=	RSP8 128 MB DRAM Upgrade Kit
MEM-RSP8-256M=	RSP8 256 MB DRAM Upgrade Kit
MEM-RSP8-FLC16M=	RSP8 Flash Card: 16 MB 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
MEM-VIP4-128M-SD=	128 MB SDRAM Option for VIP4
MEM-VIP4-256M-SD=	256 MB SDRAM Option for VIP4

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
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
FL75-H+	Cisco IOS 7500 Series Firewall

Cisco 7500 Gigabit Interface Processors & Converters

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

Cisco 7500 Series DPT Interface Processors

SRPIP-OC12MM=   Dynamic Packet Transport Interface Processor - OC12MM
SRPIP-OC12SMI=   Dynamic Packet Transport Interface Processor - OC12SMI
SRPIP-OC12SML=   Dynamic Packet Transport Interface Processor - OC12SML
SRPIP-OC12SMX=   DPT-OC12 Single-mode extended reach Interface Processor

Cisco 7500 Fast Ethernet Interface Processor

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 Versatile Interface

VIP2-40=   Versatile Interface Processor 2, Model 40
VIP2-50=   Versatile Interface Processor 2, Model 50
VIP4-50=   Versatile Interface Processor 4, Model 50
VIP4-80=   Versatile Interface Processor 4, Model 80

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-4E   4-port Ethernet 10BASE-T
PA-8E   8-port Ethernet 10BASE-T
PA-FE-TX   1-port Fast Ethernet 100BASE-TX
PA-FE-FX   1-port Fast Ethernet 100BASE-FX
PA-5EFL   5-port Ethernet 10BASE-FL
PA-4R-DTR   4-port Dedicated Token Ring, 4/16Mbps, HDX/FDX
PA-4T+   4-port Serial, Enhanced
PA-8T-V35   8-port Serial, V.35
PA-8T-232   8-port Serial, RS232
PA-8T-X21   8-port Serial, X21
PA-4E1G/75   4-port Serial E1 (G703), 75 ohm/unbalanced
PA-4E1G/120   4-port Serial E1 (G703), 120 ohm/balanced
PA-2FEISL-FX=   2-port Fast Ethernet/ISL 100BASE-FX Port Adapter SPARE
PA-2FEISL-TX=   2-port Fast Ethernet/ISL 100BASE-TX 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-A3-OC12MM=   1-port ATM Enhanced OC12/STM4 multi-mode
PA-A3-OC12SMI=   1-port ATM Enhanced OC12/STM4 single mode intermediate reach
PA-A3-E3   1-port ATM Enhanced E3
PA-A3-8T1IMA   8-port ATM Enhanced T1 IMA
PA-A3-8E1IMA   8-port ATM Enhanced E1 IMA
PA-T3=   1-port T3 Serial Port Adapter with T3 DSUs
PA-T3+=   1-port T3 Serial Port Adapter Enhanced
PA-A3-T3=   1-port ATM Enhanced DS3 Port Adapter (Spare)
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-2T1=   2-port multichannel T1 port adapter with integrated CSU/DSUs
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-MC-2T3   2-port Enhanced Multichannel T3
PA-MC-E3   1-port Multichannel E3
PA-MC-8E1   8-port Multichannel E1 (G.703/G704 & PRI)
PA-MC-2E1   2-port Multichannel E1 (G.703/G704 & PRI)
PA-POS-OC3MM=   1-port Packet/SONET OC3c/STM! Multimode PA
PA-POS-OC3SMI=   1-port Packet/SONET ONC3c/STMI1 Singlemode (IR) PA
PA-POS-OC3SML=   1-port Packet/SONET OC3c/stm1 Singlemode (LR) PA
MAS-VIP-PABLANK=   Blank, Spare, Port Adapter
PA-VXB-2TE1+=   2-port T1/E1 moderate capacity enhanced voice PA

PA-VXC-2TE1+=	2-port TE1 hi-capacity enhanced voice PA
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 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
Cisco 7500 Series Basic Maintenance	
CON-SNT-PKG17	Cisco 7507 SMARTnet Maintenance
CON-SNT-PKG18	Cisco 7513 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 7500 Series Web site: http://www.cisco.com/go/7500

Additional Products

For the IAD 1101, see the Cisco 6700 MultiService Access Platforms Web site: www.cisco.com/go/MSAP

For the Cisco MC3810, go to http://www.cisco.com/go/3800

For the Cisco 6400 Series, go to http://www.cisco.com/go/6400

For the Cisco 6700 Series, go to www.cisco.com/go/MSAP

For the Cisco 12000 Series, go to http://www.cisco.com/go/12000

Wireless and IP Telephony Products

Wireless and IP Telephony at a Glance

Wireless Products	Features	Page
Cisco Aironet 340 Series Ethernet Bridges	• Supports wireless connections up to 25 miles apart • Offers up to 11 Mbps data rate • Links buildings into a single LAN • Requires no license	2-3
Cisco Aironet 340 Series Workgroup Bridge	• Links single devices or workgroups of up to eight clients to a LAN • Simple client installation with no driver required • Supports long ranges outdoors with optional antennas	2-5
Cisco Aironet 340 Series Client Adapters and Access Points	• 11 Mbps wireless LAN solutions • Security equivalent to wired networks • Wireless freedom and flexibility • IEEE 802.11b interoperability	2-7
Cisco Aironet Antennas and Accessories	• A wide array of options • FCC-approved directional and omnidirectional antennas • Low-loss cable, mounting hardware, and other accessories available	2-9

IP Telephony Products	Features	Page
Cisco IP Telephones	Full-featured telephone that can be plugged directly into a standard 10BASE-T Ethernet connection • Easy to program and easy to use phones • Integrated Ethernet repeater	2-13
Cisco Voice Gateways	Gateways provide connectivity between IP and legacy telephony systems • Cisco VoIP gateway models support various type of analog and digital interfaces, ranging from two analog ports to up to 8 T1/E1 digital ports • Fully manageable by Cisco CallManager, a CLI interface via Telnet, or via SNMP	2-15
Cisco Media Convergence Server 7835	High availability server platform for Cisco desktop IP telephony systems • Turnkey solution • Powerful enough for large enterprise IP telephony deployments	2-17
Cisco CallManager	A suite of integrated voice applications • Call-processing software component of the Cisco Architecture for Voice, Video, and Integrated Data network • Solution for small, medium, and large telephony networks	2-18
Cisco IP IVR	Cisco IP IVR is the first application product in a suite of application products completely written in Java and designed and constructed by Cisco to facilitate concurrent multimedia communication processing • Provides an open, extensible, and feature-rich foundation for the creation and delivery of IVR solutions via Internet technology • Automates the handling of calls by autonomously interacting with users	2-21
Cisco IP SoftPhone	• Takes advantage of the usability of a PC and controls hardware IP telephone • Also functions as a standalone, software IP phone • Intuitive user interface and context-sensitive controls replace the archaic keystroke combinations of legacy phones.	2-23

IP Telephony Products	Features	Page
Cisco WebAttendant	• Automates both the user operations and the administrative operations of a manual attendant function • Allows the attendant to quickly accept and dispatch calls to enterprise users • Scalable	2-24
Cisco uOne Messaging Application	• Provides a complete voice messaging solution for the enterprise • Subscribers can retrieve, store, and record voice messages as well as edit, forward with comments, and reply to a subscriber's message with a phone call • Operates within a customer's LAN environment by utilizing an open, packet telephony standard	2-26

Cisco Aironet 340 Series Ethernet Bridges

Designed to connect two or more networks (typically located in different buildings), Cisco Aironet wireless bridges deliver high data rates and superior throughput for data-intensive, line-of-sight applications. The high-speed links between Cisco Aironet wireless bridges deliver throughput faster than E1/T1 lines for a fraction of the cost—eliminating the need for expensive and difficult-to-install leased lines or fiber-optic cable. The initial hardware investment can be quickly paid for with the money saved on leased-line service. Wireless bridges connect discrete sites into a single LAN, even when they`re separated by obstacles such as freeways, railroads, and bodies of water that are practically insurmountable for copper and fiber-optic cable.

Key Features

- Remote bridges connect hard-to-wire sites, noncontiguous floors, satellite offices, school or corporate campus settings, temporary networks, and warehouses

- Multiple sites can share a single, high-speed connection to the Internet

- Provides up to 128-bit Wired Equivalent Privacy (WEP), providing a level of data security equal to traditional wired networks

- Supports high data rates over medium and short ranges or lower data rates for long-range support

- Easy to install and configure; bridges can be redeployed quickly as network requirements or company locations change

- Requires no FCC (or applicable agency) license

- Configuration and management options include direct console or remote configuration via Telnet, File Transfer Protocol (FTP), Simple Network Management Protocol (SNMP) or browser graphical user interface (GUI)

- Supports configuration and management via generally available scripting tools

- Supports 802.1 Spanning-Tree protocol and advanced diagnostics to simplify troubleshooting

Specifications

Feature	Cisco Aironet 340 Series Ethernet Bridges
Data Rates Supported	1, 2, 5.5, and 11 Mbps
Range (typical)	Up to 18 miles (30 km) at 11 Mbps
Frequency Band	2400-2483.5 MHz
Wireless Medium	DSSS
Network Protocols Supported	IEEE 802.3 and Ethernet blue book
Operating Channels	11 channels (U.S., Canada, and Japan) 13 channels (ETSI)
Simultaneous Channels	Three
Antenna Connection	Reverse polarity TNC (RP-TNC)4
Wireless Bridges per LAN	Unlimited
Maximum Users per Bridge	2048 (wireless)
Power Supply	Standard Power Pack: 120 VAC, 50/60 Hz to 18 VDC @1A or 12 VDC @1.5A
Dimensions	7.8 x 5.9 x 1.9 in
Service Category	3 (AIR-BR342US)

Distribution Part Numbers and Ordering Information

Cisco Aironet 340 Series Ethernet Bridges[1]
AIR-BR342US   340 Series 11Mbps DSSS Bridge, 100mW with 128-bit WEP (US)
Cisco Aironet 340 Series Ethernet Bridges Basic Maintenance
CON-SNT-PKG3   SMARTnet Maintenance for AIR-BR342US

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 Aironet 340 Web site: www.cisco.com/go/air340

Cisco Aironet 340 Series Workgroup Bridge

Designed to meet the needs of remote workgroups or satellite offices, the Cisco Aironet 340 Series Workgroup Bridge (WGB) wirelessly connects workgroups within a building or from building-to-building. For the business traveler, the workgroup bridge can also be used to quickly connect an Ethernet-enabled laptop to a LAN.

Equipped with a standard RJ-45 Ethernet interface, the WGB connects to a single Ethernet device or, for up to eight devices, to an Ethernet hub. The Cisco Aironet WGB links to the network backbone via wireless communications with Cisco Aironet Access Points or Bridges. Similar to other Cisco Aironet 340 Series products, the WGB utilizes direct sequence spread spectrum (DSSS) radio frequency technology, operates in the unlicensed 2.4 GHz band and supports data rates up to 11 Mbps. Both 40- and 128-bit WEP encryption is offered. Antenna options include a single captured antenna and two RP-TNC connectors for use with optional antennas.

Key Features

- Links single devices or workgroups of up to eight clients to a LAN
- Attaches to any standard Ethernet hub for applications connecting 2-8 Ethernet-ready devices
- Simple client installation, with no driver required
- Offers up to 11 Mbps data rate
- Supports long ranges outdoors with optional antennas

Specifications

Feature	Cisco Aironet 340 Series Workgroup Bridge
Connectors	On the back panel: barrel power connector (plug-in for AC adapter) and RJ-45 Ethernet connector
Power Supply	Standard power pack: 120VAC/60Hz Universal power pack: 90-264VAC/47-63Hz
Temperature	32 to 122 degrees F (0 to 50 degrees C)
Humidity	10 to 90% non-condensing
Dimensions	6.3 in x 4.72 in. x 1.45 in (16 cm x 12 cm x 3.7 cm)
Weight	Less than 1 lb. (0.45 kg.) excluding power supply
Frequency	2.400 to 2.497 GHz
Range when communicating to a 340 series access point (typical)	Indoor office: 100 ft. (30 m) at 11 Mbps; 300 ft. (91 m) at 1 Mbps Outdoor (with standard dipole): 400 ft. (122 m) at 11 Mbps; 1,500 ft. (460 m) at 1 Mbps
Output Power	30 mW (15 dBm)
Wireless Medium	Direct Sequence Spread Spectrum
Operating Channels	11 Channels (US, Canada and Japan) 13 Channels (ETSI)
Simultaneous Channels	Three
Data Rates	1, 2, 5.5, and 11 Mbps
Network Architecture Type	Infrastructure via a Cisco Aironet access point or bridge
Device Drivers	None required
Network Support	Transparent TCP/IP
Network Connection Type	10BASET
Network Protocols Supported	IEEE 802.3 and Ethernet blue book
Security	System ID required, up to 32 ASCII characters 40-bit WEP and 128-bit WEP available
Antenna	Single captured 2.2 dBi antenna or two (diversity) RP-TNC connectors for use with optional antennas
Certification	Operates license-free under FCC Part 15 and complies as a Class B device. Complies with DOC regulations. Complies with ETS 300.328, FTZ 2100 and MPT 1349 standards. Call for other information on use outside of the USA.

Distribution Part Numbers and Ordering Information

Cisco Aironet 340 Series Workgroup Bridge[1]

AIR-WGB341C	340 Series 11 Mbps Workgroup Bridge; 40-bit WEP; Captured Antenna
AIR-WGB341R	340 Series 11 Mbps Workgroup Bridge; 40-bit WEP; RP-TNC
AIR-WGB342C	340 Series 11 Mbps Workgroup Bridge; 128-bit WEP; Captured Antenna
AIR-WGB342R	340 Series 11 Mbps Workgroup Bridge; 128-bit WEP; RP-TNC

Cisco Aironet 340 Series Ethernet Bridges Basic Maintenance

CON-SNT-PKG1	SMARTnet Maintenance for workgroup bridges

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 Aironet 340 Web site: www.cisco.com/go/air340

Cisco Aironet 340 Series Client Adapters and Access Points

The Cisco Aironet 340 Series is a comprehensive family of client adapters and access points that enables organizations to integrate the freedom and flexibility of wireless local-area networking into their information systems. The Cisco Aironet 340 series client adapters and access points are designed to meet the mobility, performance, security, interoperability, management, and reliability requirements of in-building wireless local-area networks (WLANs) within enterprise-wide information infrastructures or as free standing all-wireless networks.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Aironet 340 Series Client Adapters and Access Points	• IT professionals or business executives want mobility within the enterprise, as an addition or alternative to wired networks • Business owners or IT directors need flexibility for frequent LAN wiring changes, either throughout the site or in selected areas • Any company whose site is not conducive to LAN wiring because of building or budget limitations, such as older buildings, leased space, or temporary sites

Key Features

- Aironet 340 Series Client Adapter
    - Connect clients to a wireless network via radio communications with Access Points
    - Couples the mobility, freedom, and flexibility of wireless local-area networking with the bandwidth required by enterprise-wide information systems
    - Quickly add desktop PCs to a LAN without costly and time-consuming cable runs and drops; relocate clients without a loss of productivity
    - 11 Mbps of bandwidth
    - Up to 128-bit wired equivalent privacy (WEP) encryption security is available to provide data security comparable to traditional wired LANs
- Aironet 340 Series Access Points
    - A transceiver that can act as the hub of a standalone wireless network or as a bridge between wireless and wired networks
    - In addition to performing similar to a hub in a wired network, Access Points add the vital, price/performance benefits of security, management features, and mobility services
    - Easy integration to a wired network backbone, flexible configuration, management capabilities, and a wide range of product configurations
    - Provides the option of a Web browser or console management interface

Specifications

Cisco Aironet 340 Series Client Adapters

Feature	AIR-PCM340	AIR-PCI340
Network Architecture Types	Supports peer-to-peer networking and communication to wired networks via access points	Same as AIR-PCM340
Antenna	Integrated internal antenna with diversity support	External 2.2 dBi dipole antenna with RP-TNC connection
Device Drivers Available	NDIS2, NDIS3, NDIS4, NDIS5 ODI, and Packet	NDIS2, NDIS3, NDIS4, NDIS5 ODI, and Packet
System Interface	PC Card Type II slot	32-bit PCI slot
Certifications	FCC Class B, FCC Part 15.247, Canada ICES Class B, CE, UL, CSA; call for other information outside the U.S	Same as AIR-PCM340
Dimensions	2.13 x 4.37 x 0.1 in.	6.6 x 3.875 x 0.5 in.
Weight	1.6 oz.	4.4 oz.

Cisco Aironet 340 Series Access Points

Feature	AIR-AP342E2C	AIR-AP341E2C	AIR-AP342E2R	AIR-AP341E2R
Network Protocols	Complies with IEEE 802.3	Complies with IEEE 802.3	Complies with IEEE 802.3	Complies with IEEE 802.3
Maximum Clients	2048	2048	2048	2048
Antenna	Integrated dual 2.2 dBi dipole with diversity support (nonremovable)	Integrated dual 2.2 dBi dipole with diversity support (nonremovable)	Optional (none supplied with unit)	Optional (none supplied with unit)
Optional Antenna Connector	None	None	Dual RP-TNC connectors with diversity support	Dual RP-TNC connectors with diversity support
Certifications	FCC Class A, FCC Part 15.247, Canada ICES Class B, CE, UL, CSA; call for other information outside the U.S.	Same as AIR-AP342E2C	Same as AIR-AP342E2C	Same as AIR-AP342E2C
Dimensions	6.3 x 4.72 x 1.45 in.	6.3 x 4.72 x 1.45 in.	6.3 x 4.72 x 1.45 in.	6.3 x 4.72 x 1.45 in.
Weight	12.3 oz. (350g), excluding power supply	12.3 oz. (350g), excluding power supply	12.3 oz. (350g), excluding power supply	12.3 oz. (350g), excluding power supply

Distribution Part Numbers and Ordering Information

Cisco 340 Series Access Points[1]

AIR-AP342E2C	340 Series 11 Mbps DSSS AP w/128-bit WEP & 2 Int. Ant.
AIR-AP342E2RUS	340 Series 11 Mbps DSSS AP w/128-bit WEP & 2 RP-TNC (US)
AIR-BSE342	340 Series 11 Mbps 802.11b DSSS Base Station w/128-bit WEP &1-Captured Antenna; no Modem
AIR-BSM342	340 Series 11 Mbps 802.11b DSSS Base Station w/128-bit WEP &1-Captured Antenna; w/ Modem

Cisco 340 Series Adapters

AIR-PCM342US	340 Series 11 Mbps DSSS PC Card Adapter w/128-bit WEP (US)
AIR-LMC342	340 Series 11 Mbps DSSS PC Card w/128-bit WEP w/o Ant.
AIR-PCI342	340 Series 11 Mbps DSSS PCI Adapter with 128-bit WEP
AIR-PCI342US	340 Series Adapter DSSS PCI Adapter with 128-bit WEP (US)
AIR-UC4800-E	4800 Series 11 Mbps DSSS Ethernet Adapter
AIR-MC4800	4800 Series 11 Mbps DSSS Multi-Client Adapter
AIR-USB341	340 Series 11Mbps Universal Serial Bus Adapter; WEP40
AIR-USB342	340 Series 11Mbps Universal Serial Bus Adapter; WEP128

Cisco Aironet 340 Series Adapters and Access Points Basic Maintenance

CON-SNT-PKG1	Cisco Aironet 340 Series Adapters SMARTnet Maintenance
CON-SNT-PKG2	Cisco Aironet 340 Series Access Points 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 Web site: www.cisco.com/go/adap_acc

Cisco Aironet Antennas and Accessories

Every wireless Local Area Network (LAN) deployment is different. When engineering an in-building solution, varying facility sizes, construction materials, and interior divisions raise a host of transmission and multipath considerations. When implementing a building-to-building solution, distance, physical obstructions between facilities, and number of transmission points involved must be considered.

Cisco is committed to providing not only the best access points, client adapters, and bridges in the industry—it is also committed to providing a complete solution for any wireless LAN deployment. That's why Cisco has the widest range of antennas, cable, and accessories available from any wireless manufacturer.

With the Cisco FCC-approved directional and omnidirectional antennas, low-loss cable, mounting hardware, and other accessories, installers can customize a wireless solution that meets the requirements of even the most challenging applications.

Key Features

- Client Adapter Antennas—Cisco Aironet wireless client adapters come complete with standard antennas that provide sufficient range for most applications at 11 Mbps. To extend the transmission range for more specialized applications, a variety of optional, higher-gain antennas are provided that are compatible with selected client adapters.

- Access Point Antennas—Cisco Aironet access point antennas are compatible with all Cisco RP-TNC-equipped access points. The antennas are available with different gain and range capabilities, beam widths, and form factors. Coupling the right antenna with the right access point allows for efficient coverage in any facility, as well as better reliability at higher data rates.

- Bridge Antennas—Cisco Aironet bridge antennas allow for extraordinary transmission distances between two or more buildings. Available in directional configurations for point-to-point transmission and omnidirectional configuration for point-to-multipoint implementations, Cisco has a bridge antenna for every application.

- Low-loss cable extends the length between any Cisco Aironet bridge and the antenna. With a loss of 6.7 dB per 100 feet (30m), low-loss cable provides installation flexibility without a significant sacrifice in range.

Specifications

Client Adapter Antennas

Feature	AIR-ANT3351	AIR-ANT3342
Description	POS diversity dipole[1]	Diversity dipole
Application	Indoor diversity antenna[2] to extend the range of Aironet LMC client adapters	Indoor diversity antenna to extend the range of Aironet LMC client adapters
Approximate Indoor Range at 1 Mbps[3]	350 ft (107m)	350 ft (107m)
Approximate Indoor Range at 11 Mbps[3]	100 ft. (51 m)	100 ft. (51 m)
Cable Length	5 ft. (1.5m)	1 ft. (0.3m)
Dimensions	Base: 7 x 2 in. (18 x 5 cm) Height: 8 in. (20 cm)	4 x 3 in. (8.6 x 6.5 cm)
Weight	9.2 oz. (261g)	5 oz. (142g)

1. A type of low-gain (2.2 dBi) antenna consisting of two (often internal) elements.

2. A ratio of decibels to an isotropic antenna that is commonly used to measure antenna gain. The greater the dBi value, the higher the gain and, as such, the more acute the angle of coverage.

3. All range estimations are based on an integrated client adapter antenna associating with an access point under ideal indoor conditions. The distances referenced here are approximations and should be used for estimation purposes only.

Access Point Antennas

Feature	AIR-ANT3213	AIR-ANT3194	AIR-ANT1728	AIR-ANT2561	AIR-ANT3549	AIR-ANT1729
Description	Pillar mount diversity omni	Omnidirectional ceiling mount	High gain omnidirectional ceiling mount	Omnidirectional ground plane	Patch wall mount	Patch wall mount
Application	Indoor, unobtrusive medium-range antenna	Indoor short-range antenna, typically hung from crossbars of drop ceilings	Indoor medium-range antenna, typically hung from crossbars of drop ceilings	Flat, circular, medium-range indoor antenna	Indoor, unobtrusive, long-range antenna (may also be used as a medium-range bridge antenna)	Indoor, unobtrusive, medium-range antenna (may also be used as a medium-range bridge antenna)
Approximate Indoor Range at 1 Mbps[1]	497 ft. (151m)	350 ft. (107m)	497 ft. (151m)	497 ft. (151m)	Access Point: 700 ft. (213m) Bridge: 2.0 miles (3.2 km)	Access Point: 542 ft. (165m) Bridge: 1.1 miles (1.8 km)
Approximate Indoor Range at 11 Mbps[1]	142 ft. (44m)	100 ft. (31m)	142 ft. (44m)	142 ft. (44m)	Access Point: 200 ft. (61m) Bridge: 3390 ft. (1032m)	Access Point: 155 ft. (47m) Bridge: 1900 ft. (580m)
Cable Length	3 ft. (0.91m)	9 ft. (2.74m)	3 ft. (0.91m)	3 ft. (0.91m)	3 ft. (0.91m)	3 ft. (0.91m)
Dimensions	10 x 1 in. (25.4 x 2.5 cm)	Length: 9 in. (22.86 cm) Diameter: 1 in. (2.5 cm)	Length: 9 in. (22.86 cm) Diameter: 1 in. (2.5 cm)	Diameter: 12 in. (30.5 cm)	5 x 5 in. (12.4 x 12.4 cm)	4 x 5 in. (9.7 x 13 cm)
Weight	1 lb. (460g)	4.6 oz. (131g)	4.6 oz. (131g)	9 oz. (255g)	5.3 oz. (150g)	4.9 oz. (139g)

1. All range estimations are based on an integrated client adapter antenna associating with an access point under ideal indoor conditions. The distances referenced here are approximations and should be used for estimation purposes only.

Bridge Antennas

Feature	AIR-ANT2506	AIR-ANT4121	AIR-ANT1949	AIR-ANT3338
Description	Omnidirectional Mast mount	High-gain omnidirectional Mast mount	Yagi mast mount	Solid dish
Application	Outdoor short-range point-to-multipoint applications	Outdoor medium-range point-to-multipoint applications	Outdoor medium-range directional connections	Outdoor long-range directional connections
Approximate Indoor Range at 1 Mbps[1]	5000 ft. (1525m)	4.6 miles (7.4 km)	6.5 miles (10.5 km)	25 miles (40 km)
Approximate Indoor Range at 11 Mbps[1]	1580 ft. (480m)	1.4 miles (2.3 km)	2.0 miles (3.3 km)	11.5 miles (18.5 km)
Cable Length	3 ft. (0.91m)	1 ft. (0.30m)	1.5 ft. (0.46m)	2 ft. (0.61m)
Dimensions	Length: 13 in. (33 cm) Diameter: 1 in. (2.5 cm)	Length: 40 in. (101 cm) Diameter: 1.3 in. (3 cm)	Length: 18 in. (46 cm) Diameter: 3 in. (7.6 cm)	Diameter 24 in. (61 cm)
Weight	6 oz. (17g)	1.5 lb. (0.68 kg)	1.5 lb. (0.68 kg)	11 lb. (5 kg)

1. All range estimations are based on an integrated client adapter antenna associating with an access point under ideal indoor conditions. The distances referenced here are approximations and should be used for estimation purposes only.

Low-Loss Antenna Cable

Feature	AIR-420-003346-020	AIR-420-003346-050	AIR-420-003346-075	AIR-420-003346-100
Cable Length	20 ft. (6m)	50 ft. (15m)	75 ft. (23m)	100 ft. (30m)
Transmission Loss	1.3 dBi	3.4 dBi	5.0 dBi	6.7 dBi

Cisco Aironet Accessories

Feature	420-002537-018	420-002537-060	420-003354	420-003745	430-002662
Description	18 in. (46 cm) bulkhead extender	60 in. (152 cm) bulkhead extender	Lightening arrestor	Optional antenna adapter cable	Yagi articulating mount
Application	Flexible antenna cable that extends access point cabling typically within an enclosure	Flexible antenna cable that extends access point cabling typically within an enclosure	Helps prevent damage due to lightning-induced surges or static electricity	Used to add higher-gain antennas to universal and multistation clients for longer-range applications	Adds swiveling capability to mast-mounted yagi antennas

Distribution Part Numbers and Ordering Information

Cisco 340 Series Accessories[1]

AIR-ACC1622	TNC straight plug, crimp style, for 9913 cable
AIR-ACC1623	TNC straight jack crimp style for 9913 cable
AIR-ACC1655	TNC straight plug, crimp style, male for RG-58
AIR-ACC1725	Magnetic Mount Adapter
AIR-ACC1828	TNC jack R/P mate for RG-58
AIR-ACC1833	340 Series Bridge Mounting Kit
AIR-ACC2228	Dipole Antenna Mount
AIR-ACC2537-018	18 inch (.5m) Bulkhead Extender
AIR-ACC2537-060	60 inch (1.5m) Bulkhead Extender
AIR-ACC2538	Bulkhead connector
AIR-ACC2662	Yagi Antenna Articulating Mount
AIR-ACC3354	Lightning Arrestor w/ grounding ring
AIR-ACC3986-001	Slide mount kit for Bridges
AIR-ACC5559-072	340 Series Serial Cable for Console Port Configuration
AIR-420-003346-020	20 ft. (6m) low-loss antenna cable
AIR-420-003346-050	50 ft. (15m) low loss antenna cable
AIR-420-003346-075	75 ft. (23m) low loss antenna cable
AIR-420-003346-100	100 ft. (30m) low loss antenna cable
AIR-420-3745-0400	Assembly cable RP-SMA plug-4 inches
AIR-420-1625-0500	RP-TNC assembly (5 inches)

AIR-SK342BB	Building-to-Building Starter Kit
AIR-SK342IB	In-Building Starter Kit
Cisco 340 Series Antenna	
AIR-ANT1728	5.2 dBi Omni Ceiling Mount Antenna
AIR-ANT1729	6 dBi Patch Wall Mount Antenna
AIR-ANT1949	13.5 dBi Yagi Mast Mount Antenna
AIR-ANT2506	5.2 dBi Omnidirectional Mast Mount Antenna
AIR-ANT2561	5.2 dBi Omnidirectional Ground Plane Antenna
AIR-ANT3120-001	2.2 dBi Snap-on PC Card Diversity Antenna
AIR-ANT3194	2.2 dBi Omni Ceiling Mount Antenna
AIR-ANT3195	3 dBi Patch Wall Mount Antenna
AIR-ANT3213	5.2 dBi Pillar-Mount Diversity Omni Antenna
AIR-ANT3309	2.2 dBi POS Diversity Base Antenna
AIR-ANT3338	21 dBi Solid Dish Antenna
AIR-ANT3342	2.2 dBi Diversity "Rabbit Ear" External Antenna
AIR-ANT3351	2.2 dBi POS Diversity Dipole Antenna
AIR-ANT3549	8.5 dBi Hemispherical Patch Antenna
AIR-ANT4121	12 dBi Omnidirectional Mast Mount Antenna
AIR-ANT4941	2.2 dBi Dipole Antenna (Standard Rubber Duck)
AIR-ANT-AKDISH	Antenna Kit w/ 21 dBi Dish Ant., 50ft cable, Light. Arrest
AIR-ANT-AKOMNI	Antenna Kit w/ 12 dBi Omni Ant., 50ft cable, Light. Arrest
AIR-ANT-AKPATCH	Antenna Kit w/ 6 dBi Patch Ant., 50ft cable, Light. Arrest
AIR-ANT-AKYAGI	Antenna Kit w/ 13.5 dBi Yagi Ant., 50ft cable, Light. Arrest

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 Web site: www.cisco.com/go/antenna

Cisco IP Telephones

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 three models to choose from, 7960, 7940, 7910 and 7910+SW, 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 10/100BASE-T Ethernet connection. Each provides toll-quality audio, three models are equipped with a two port Cisco 10/100 switch with connection 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.723a audio compression for low-bandwidth requirements. The download firmware capability allows the phone to be programmed from the system with new capabilities.

Key Features

- The Cisco 7960 is the full-featured Cisco IP telephone for executives and managers. It provides 6 programmable line and speed dial buttons, the 7940 with 2 buttons for business professionals and office workers with lower traffic applications. Both include full-duplex speakerphone with lighted microphone mute button. A pixel LCD display features information such as date and time, calling party name, calling party number, and digits dialed and XML capable of graphics. A unique LED message waiting lamp shows brightly to indicate ringing and message waiting status.

- The Cisco 7910 and 7910+SW are the Cisco IP telephones designed for low-end, low-traffic requirements such as cubical hallway, break room, and other areas not requiring high-end features. These two models are single line voice instruments. The phones have a 2 x 24 Character LCD display for call status and identification.

- 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 10BASE-T (7910) or 10/100BASE-T 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.

- All models use Cisco Discovery Protocol (CDP) to enable power down the LAN thus eliminating the need for a local power transformer cube.

Specifications

Feature	Cisco IP Telephone
Dimensions (HxWxD)	8 x 10.5 x 6 in
Phone Weight	3.2 pounds
Material, Housing	Polycarbonate acrylonitrile butadiene (ABS) plastic, Dark Gray
Interface	Two Standard 10/100BASE-T RJ-45 interfaces (IEEE 802.3)—one for 10/100BASE-T network to phone connection and one "switch port" for connection from phone to PC or other network device
Software Specification	Requires Cisco CallManager to be installed on the IP network
Description Output	48 VDC
AC Input Voltage	100 to 230 VAC Country specific AC input current
Frequency	50 or 60 Hz
Operating Temperature	32° to 104°F (0° to 40°C)
Storage Temperature	14° to 140°F (-10° to 60°C)
Operating Humidity	10% to 95% (non-condensing)

Distribution Part Numbers and Ordering Information

Cisco IP Power and Phones[1]

CP-7960	Cisco IP Phone 7960, Manager Set (w/User License)
CP-7960=	Cisco IP Phone, 7960, Manager Set, Spare (w/o License)
CP-PWR-CUBE=	IP Phone power transformer for 7900 series phones
CP-PWR-CORD-NA=	7900 Series Transformer Power Cord, North America
WS-PWR-PANEL	Catalyst 48 port Inline Power Patch Panel

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 IP Telephones Web site: www.cisco.com/go/iptel

Cisco Voice Gateways

The Cisco Voice Gateways provide connectivity between the Cisco AVVID (Architecture For Voice, Video, and Integrated Data) packet telephony and Legacy telephony devices such as Public Switched Telephone Network (PSTN), Private Branch Exchange (PBX), fax machines, and other analog devices.

When a Cisco IP telephone receives a call from PSTN or a legacy device, the Cisco Voice Gateway receives the signal on its T1/E1 or analog interface connected to PSTN and packetize it for transmission to the Ethernet interface. Conversely, when a Cisco IP telephone dials a number for a device in PSTN, the signal is transmitted over the LAN to the Ethernet interface of the Cisco Voice Gateway where the IP packets are converted to digital or analog signals, depending on the connected interface type, for transmission to PSTN.

Cisco portfolio offers a wide variety of voice gateways supporting different protocols, interfaces and port density for diverse customer requirements.

Cisco Voice Gateways are for customers who need to connect analog devices such as fax machines, modem, plain analog phones, or for connecting their IP telephony network to PSTN. Cisco offers two types of voice gateways; analog and digital. See ordering information section for part numbers and description of each gateway.

Key Features

- Flexibility
  - The Cisco Voice Gateway family provides complete flexibility to businesses ranging from a small office to a large enterprise, to choose the voice gateway based on their capacity requirements
  - Cisco offers both stand alone gateways (for example, VG200) and systems integrated (for example, T1/E1) modules for Catalyst 6500
  - Cisco provides support for multiple protocols like MGCP, H.323, and Skinny (Note: Not all products support all protocols)
  - Support for a wide variety of voice codecs G.711, G.729, G.723.1, and others
  - New features can be easily imported on the Cisco Voice Gateways by downloading new software
- Ease of Support
  - Most of the Voice Gateways support DHCP, which allows a gateway to automatically obtain its IP address and identify the proper Cisco CallManager, which makes installation very simple
  - Gateways can be managed and configured from the Cisco CallManager, thus providing a single point of configuration and administration
  - Download of new software and configuration can be easily managed using TFTP
  - Trunk and Ethernet status LED provides visual status of the gateways
  - Cisco Voice Gateways can be managed with Simple Network Management Protocol (SNMP) or command line interface (CLI) via Telnet access (Note: DT-24+ and DE-30+ do not support SNMP and CLI)

Specifications

Description	Cisco Voice Gateways
Supported Features	ISDN PRI (T1/E1) both network and user side
	T1/E1-CAS, BRI, E&M, FXS, FXO (loop and ground start)
	Supplementary services (hold, transfer, conference, park, etc.)
	Failure and recovery to secondary (and tertiary) Cisco CallManager during CallManager failover
Performance	Supports up to the maximum number of physical ports or channels available on each gateway
Dimensions	For device-specific information, consult respective data sheet
Power	For device-specific information, consult respective data sheet
Operating Temperature	For device-specific information, consult respective data sheet

Distribution Part Numbers and Ordering Information

Cisco Access Gateways & Digital Gateway[1]

WS-X6608-T1(=)	Catalyst 6000 8 port Voice T1 and Services Module
WS-X6608-E1(=)	Catalyst 6000 8 port Voice E1 and Services Module
WS-X6624-FXS(=)	Catalyst 6000 24 port FXS Analog Station Interface Module
WS-X4604-GWY(=)	Catalyst 4000 Access Gateway Module with IP/FW software (Uses standard VIC and NM for voice interfaces; see below for list)
CAG-VG200	Cisco IP Telephony Voice Gateway (Uses standard VIC and NM for voice interfaces; see below for list)
DT-24+	One-port T1 Voice Gateway PCI Card
DE-30+	One-port E1 Voice Gateway PCI Card

Voice Interface Cards (VIC) and Network Modules (NM)

NM-1V(=)	One-slot voice/fax NM
NM-2V(=)	Two-slot voice/fax NM
NM-HDV-1T1-24(=)	Single-port 24-channel T1 voice/fax network module
NM-HDV-1T1-24E(=)	Single-port enhanced 24-channel T1 voice/fax network module
NM-HDV-2T1-48(=)	Dual-port 48-channel T1 voice/fax network module
NM-HDV-1E1-30(=)	Single-port 30-channel E1 voice/fax network module
NM-HDV-1E1-30E(=)	Single-port enhanced 30-channel E1 voice/fax network module
NM-HDV-2E1-60(=)	Dual-port 60-channel E1 voice/fax network module
VIC-2FXS(=)	Two-port FXS voice/fax interface card
VIC-2E/M(=)	Two-port E&M voice/fax interface card
VIC-2FXO(=)	Two-port FXO voice/fax interface card [also see VIC-2FXO-M1]
VIC-2FXO-EU(=)	Two-port FXO voice/fax interface card (for Europe) [also see VIC-2FXO-M2]
VIC-2FXO-M1(=)	Two-port FXO voice/fax interface card with battery reversal detection can caller ID support (for US, Canada and others) [enhanced version of the VIC-2FXO]
VIC-2FXO-M2(=)	Two-port FXO voice/fax interface with battery reversal detection and caller ID support (for Europe) [enhanced version of the VIC-2FXO-EU]
VIC-2FXO-M3(=)	Two port FXO voice/fax interface card (for Australia)
VIC-2BRI-S/T-TE(=)	Two-port BRI voice/fax interface card (terminal side)
VIC-2BRI-NT/TE(=)	Two-port BRI voice/fax interface card (network and terminal sides)

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 Voice Gateways Web site: www.cisco.com/go/voicegate

Cisco Media Convergence Server 7835

The Cisco Media Convergence Server 7835 (MCS-7835) is a high-availability server platform for the Cisco desktop IP telephony system. With Cisco CallManager 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-7835 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-7835 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.

Key Features

- Fault-tolerant, high availability rack mount Windows NT server with Cisco CallManager, Cisco uOne or Cisco IP IVR 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 / 733 MHz processor and 1 GB of ECC SDRAM
- Includes redundancy features such as redundant, hot-swappable power supplies and redundant 18.2 GB SCSI hard drives configured for RAID 0/1 disk mirroring
- Space-saving 3U rack height (5.1 inches high)
- Fully supported by Cisco's Technical Assistance Center

Specifications

Description	Cisco Media Convergence Server 7835
Server	Intel Pentium III 733-MHz processor 256-kB secondary cache 1 GB 133-MHz registered ECC SDRAM memory 10/100 TX Fast Ethernet network interface card Integrated-dual-channel wide Ultra SCSI-3 controller Dual 18.2-GB Ultra2 SCSI hot-plug drives 1.44-MB floppy disk Preinstalled high-speed IDE CD-ROM drive Hot-plug redundant 275-watt power supply 3U rack height, ships with sliding rails
Dimensions (HxDxW)	5.1 x 19 x 24.6 in.
Weight	55 lbs (without hard drives)

Distribution Part Numbers and Ordering Information

Cisco Media Convergence Server[1]

MCS-7835	Media Convergence Server 7835

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 Media Convergence Server Web site: www.cisco.com/go/mcs

Cisco Media Convergence Server 7835 ■

Cisco CallManager Version 2.4

The Cisco CallManager is the call-processing software component of the Cisco AVVID (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.

Key Features

- 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 distribution of phones, gateways, and applications across a routable IP network, providing a single, distributed, virtual telephony network

- Reduces cost of ownership over traditional enterprise telephony networks while extending capabilities 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 Cisco CallManager 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

Specifications

Feature	Cisco CallManager
Platform	Media Convergence Server, MCS-7830 Enterprise packet telephony application High availability, 5U high, 19 inch wide, suitable for platform mounting in 19 inch racks
Preinstalled, Preconfigured Software	Cisco CallManager call processing and call control application Cisco CallManager configuration database Cisco CallManager Administration software (Web-browsable application provides graphical user interface to Cisco CallManager database - unlimited usage) Cisco ConferenceBridge (basic voice conferencing application - unlimited usage) Cisco Active PhoneBook (click to call, browsable directory service - unlimited usage) Cisco Web Attendant Console (software-only, Web-browsable manual attendant console - unlimited usage) Windows TAPI version 2.1 service provider interface (unlimited usage/number TAPI ports) Microsoft Internet Information Server (IIS) (Web server for remote access to Cisco CallManager database)
System Capabilities	Automated bandwidth and route selection 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 Manual attendant console—software-only Multiple ISDN protocol support—NI2, 5ESS, 4ESS, EuroISDN, DMS-100/250, 5ESS custom and more Transparently deployable across an IP network VoIP Gateway redundancy Outbound call blocking and filtering TAPI 2.1 service provider interface Device configuration through Web browser Call admission control across constricted WAN links Digit analysis and subsequent call treatment SMDI interface for message waiting indication Secure Cisco CallManager remote serviceability access through Cisco bridged Telnet service Enterprise dial plan support Single, unified dial plan Out-of-band DTMF signaling for improved DTMF response with low bandwidth CODECs Command line interface for server monitoring Emergency 911 call locator regulation compliance
User Features	Ad-hoc multiparty voice conference; meet-me multiparty conference; single button video conference initiation Calling Party ID display Multiple extensions per phone; Shared extension, multiple phones; Shared extension privacy Answer/answer release; Auto-answer Click to dial from Web phone listing Call Forward-All; Call Forward-Busy; Call Forward-No Answer Single button data collaboration initiation Direct Inward Dial (DID); Direct Outward Dial; Last Number Redial Call Hold/Retrieve; Tone-on-Hold Manual Attendant Console; Transfer-with consult Call Park/Pickup; Transfer-without consult Call Waiting/Retrieve; Message Waiting Indication User device configuration-speed dial, call forward
Administrative Features	Call Detail Records Remote system event monitoring Configurable per-phone date/time display format; Configurable per-phone time zone - synched to Cisco CallManager Remote system and component performance monitoring Zero-cost phone/gateway moves OS time services Phone/gateway upgrades through software download E911 database configuration utility

Distribution Part Numbers and Ordering Information

Cisco CallManager and uOne Hardware/Software[1]

SW-MCSUPG-2.X-3.0=	Cisco CallManager 3.0 Upgrade CD (to upgrade from CM 2.4)
SW-CCM-1USER=	Cisco CallManager 1 Station License Pkg.

Cisco CallManager and uOne Hardware/Software SPARES

MCS-SPARE-9GB=	9.1 GB SCSI Drive Spare for the MCS-7830
MCS-SPARE-18GB=	18.2 GB SCSI Drive Spare for the MCS-7835
MCS-SPARE-CPUFAN=	CPU Fan Spare for the MCS-7835
MCS-SPARE-DAT=	12/24 DAT Tape Drive Spare for the MCS-7835
MCS-SPARE-IOFAN=	I/O Fan with Bracket for the MCS-7830
MCS-SPARE-RIB=	RIB Card Spare for the MCS-7830
MCS-SPARE-RPS=	Redundant Power Supply Spare for the MCS-7830
MCS-SPARE-SAC-221=	Smart Array Controller 221 Spare for the MCS-7830
MCS-SPARE-SPSFAN=	SPS-130CFM Fan for the MCS-7830
MEM-782X-256-100=	256MB SDRAM (100MHz) for MCS-7820/7822
MEM-782X-128-100=	128MB SDRAM (100MHz) For MCS-7820/7822
MEM-782X-64-100=	64 MB SDRAM (100MHz) For MCS-7820/7822
MEM-7835-128-133=	128MB SDRAM (133MHz) For MCS-7835
MEM-7835-256-133=	256MB SDRAM (133MHz) For MCS-7835
MEM-7835-512-133=	512MB SDRAM (133MHz) For MCS-7835
MEM-7830-128-100=	128MB SDRAM (100MHz) For MCS-7830
MEM-7830-256-100=	256MB SDRAM (100MHz) For MCS-7830

Cisco uOne Software Upgrades

SW-CCM-2.4UONEUPG=	Cisco CallManager 2.4 & uOne Software Upgrade CD
SW-MCSUPG-2.X-3.0=	Cisco CallManager 3.0 Upgrade CD (to upgrade from CM 2.4)
SW-UONE-4PORT-UPG=	Cisco uOne 4.1E 4-Port Upgrade CD

Cisco IP Telephony Bundles

MCS-7835-NA-BUN-1	MCS 7835 with: CM, No Tape Drive, NA Power Cord
MCS-7835-NA-BUN-3	MCS 7835 with: CM, Tape Drive, NA Power Cord
MCS-7835-NA-BUN-5	MCS 7835 with: 100-user uOne, No Tape Drive, NA Pwr Cord
MCS-7835-NA-BUN-7	MCS 7835 with: 100-user uOne, Tape Drive, NA Pwr Cord
MCS-7822-NA-BUN-1	MCS 7822 with: CallManager and NA Power Cord

Cisco CallManager & uOne Hardware/Software Platforms

MCS-7835-NA-BUN-1	MCS 7835 with: CM, No Tape Drive, NA Power Cord
MCS-7835-NA-BUN-3	MCS 7835 with: CM, Tape Drive, NA Power Cord
MCS-7835-NA-BUN-5	MCS 7835 with: 100-user uOne, No Tape Drive, NA Pwr Cord
MCS-7835-NA-BUN-7	MCS 7835 with: 100-user uOne, Tape Drive, NA Pwr Cord
MCS-7822-NA-BUN-1	MCS 7822 with: CallManager and NA Power Cord

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 CallManager Web site: www.cisco.com/go/callmgr

Cisco IP IVR[1]

Cisco IP IVR is an IP-powered interactive voice response (IVR) solution that provides an open, extensible, and feature-rich foundation for the creation and delivery of IVR solutions via Internet Technology. Cisco IP IVR automates the handling of calls by autonomously interacting with users. The IP IVR processes user commands to facilitate command response features such as access to checking account information or user-directed call routing. The IP IVR also performs "prompt and collect" functions to obtain user data such as passwords or account identification. Additionally, the Cisco IP IVR can extract and parse Web-based content and present this data to customers via a telephony interface, thus facilitating the delivery of Web-maintained information to a voice media user. Designed to operate upon the Cisco AVVID (Architecture for Voice, Video and Integrated Data) architecture, the Cisco IP IVR product is constructed specifically to exploit the power of IP-based communications.

Cisco IP IVR is the first application product in a suite of application products completely written in Java and completely designed and constructed by Cisco to facilitate concurrent multimedia communication processing. The Cisco IP IVR architecture is open and extensible, allowing the customer to incorporate custom-developed Java classes and enabling independent developer extension of the Cisco IP IVR solution to meet unique customer business needs.

Key Features

- Provides a multimedia (voice/data/Web) IP-empowered application-generation environment
- Can be anywhere in the IP network
- Offers Web-based activation and administration
- Facilitates rapid application construction; does not require users to learn a complicated high-level language
- Stores flows (the IP IVR applications) in an industry-standard Lightweight Directory Access Protocol (LDAP) directory
- Applications are tested and debugged easily via built-in debug tools
- Significantly reduces costly T1 equipment required to deploy legacy IVR/private branch exchange (PBX) integration
- IP IVR editor and engine can be coresident on the IP IVR server, or the editor can be on a separate PC
- Easy application creation/modification via the Application Editor's graphical user interface (GUI)
- Offered as a coresident solution with Cisco CallManager or on separate, dedicated media convergence servers (MCSs)
- Supports Open Database Connectivity (ODBC) access to Microsoft Structured Query Language (SQL) server, Oracle, and Sybase databases

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

Specifications

Feature	Cisco IP IVR
Components	• Application Editor—a Windows GUI-based application-development environment where users create applications called flows via a drag-and-drop interface • Application Engine—a runtime environment that executes IP IVR flows • Step libraries—libraries of JavaBeans, which provide the programming constructs, called steps, for the Cisco IP IVR flows • Flow repository (LDAP directory)—for storage of all flows and configuration data for an IP IVR • Reporting tool—provides real-time flow execution statistics
Packaging	The Cisco IP IVR is priced on a per-port basis and available in three packages: • A coresident software add-on for an installed Cisco CallManager—This coresident Cisco IP IVR software-only option is limited to a total of ten ports, two IVR ports and eight automated attendant (AA) ports, or ten AA ports • A dedicated base Cisco IP IVR server deployed on the MCS-7825—This base package scales from 4 to 30 ports and ships with 4 IP IVR port licenses included • A high-port-density dedicated Cisco IP IVR server deployed on the MCS-7835—This high-density package scales from 24 to 48 ports and ships with 24 Cisco IP IVR port licenses included

For More Information

See the Cisco IP IVR Web site: www.cisco.com/go/ivr

Cisco IP SoftPhone[1]

The Cisco IP SoftPhone is an advanced, state-of-the-art communications application for your PC desktop. As an integral part of Cisco AVVID (Architecture for Voice, Video and Integrated Data), it can be used in any application where a telephone can be used and is fully integrated with the Cisco line of IP telephones.

The Cisco IP SoftPhone takes advantage of the usability of a PC and controls your hardware IP telephone; in addition, it functions as a standalone, software IP phone.

Key Benefits

- Users connect as a software-only virtual IP phone or work in tandem with a Cisco IP Phone
- User-configurable display of dial pad, directory, call history, and other features
- Dial from the keyboard or from a dial-pad window
- Supports drag-and-drop
- Plays user-recorded sound files to callers
- Offers the ability to automatically maintain a record of your calls; called number, call timestamp, and call length are recorded
- Integrated with Microsoft NetMeeting
- Includes integrated help
- Includes contextual function keys
- Installable from CD-ROM or over a network via configurable InstallFromTheWeb package

Specifications

Feature	Cisco IP SoftPhone
Operating System	Windows 95, Windows 98, Windows NT 4.0 (SP4 or greater), or Windows 2000
Basic System Requirements	Pentium 166-MHz MMX processor (Pentium 266 MMX recommended for standalone phone mode)
	32 to 64 MB of RAM (depending on feature activation)
	Up to 40 MB free disk space (depending on installation options)
	Windows-compatible full-duplex sound card (for standalone phone mode)
Standards Supported	Telephony Application Programming Interface (TAPI) compliant
	T.120 (via NetMeeting integration)
	H.323
	G.711, G.723.1, and G.729.a coder/decoder (codec) support

For More Information

See the Cisco IP SoftPhone Web site: www.cisco.com/go/softphone

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

Cisco WebAttendant

Cisco WebAttendant is an application that supports the traditional role of a manual attendant console. Associated with an IP phone, the Cisco WebAttendant application allows the attendant to quickly accept and dispatch calls to enterprise users. An integrated directory service provides traditional busy lamp field (BLF) and direct station select (DSS) functions for any line in the system. The application is Web enabled and, therefore, portable to Windows 98, NT, and 2000 platforms. The Cisco WebAttendant is the first of many new IP telephony applications that integrate Old World telephony functions with New World applications and services such as Lightweight Directory Access Protocol (LDAP) directory and HTML services. A primary benefit of Cisco WebAttendant over traditional attendant console systems is its ability to monitor the state of every line in the system and to efficiently dispatch calls. The absence of a hardware-based line monitor device offers a much more affordable and distributable manual attendant solution than traditional consoles.

Key Features

- User Features
  - Loop keys (simultaneous management of up to eight calls)
  - 26 line monitor keys
  - Configurable function keys
  - Per-call drag-and-drop transfer, hold—drag call from loop key to line monitor key or directory record for transfer
  - Headset capabilities of Cisco IP Phones
  - Keyboard shortcuts for alternative to mouse operation
- Administrative Features
  - Remote system/device installation and configuration through Web browser
  - Simultaneous line monitor by multiple operators—any operator can view line state of any line from his or her console user interface
  - Call distribution from single pilot number to multiple directory numbers or user-line pairs
  - Simultaneous monitoring of inbound calls from multiple operator positions
  - Creation of up to 16 pilot numbers/distribution groups

Specifications

Feature	Cisco WebAttendant
Scalability	32 hunt groups (pilot numbers) per Cisco CallManager cluster 16 hunt group members per hunt group 8 call loops per WebAttendant—any loop may be assignable as a hunt group member 96 Cisco WebAttendants per cluster Maximum of 16 x 32 = 512 simultaneous calls on as many as 96 configured WebAttendants
Availability	Provision for multiple operators on same loop/pilot and monitoring same line: operator station fails or is off line, calls distributed to all other operators with same loops
Manageability	System device configuration and operation through Web interface: no operator applications to install at each operator's PC
Affordability	No line extender hardware devices

Ordering Information

Cisco WebAttendant is shipped with each Cisco CallManager application. Cisco WebAttendant is not orderable separately. The client and server applications are installed as plug-ins from Cisco CallManager Administration screens.

For More Information

See the Cisco WebAttendant Web site: www.cisco.com/go/wa

Cisco uOne Messaging Application[1]

The Cisco Unified Open Network Exchange (Cisco uOne), an integral part of Cisco AVVID (Architecture for Voice, Video and Integrated Data), is a powerful, scalable Enterprise Messaging application. Cisco uOne 5.0E runs on the Cisco Media Convergence Server 7835 (MCS-7835).

Cisco uOne 5.0E provides a complete voice-messaging solution for the enterprise. Voice messaging is a mission-critical application that encourages faster, more efficient communications within an organization. The greater communication throughput enabled by Cisco uOne increases employee productivity and enhances customer satisfaction. Cisco uOne subscribers can retrieve, store, and record voice messages as well as edit, forward with comments, and reply to a subscriber's message with a phone call.

Key Features

- Voice mail eliminates time-zone barriers to communication
- Enables access to voice messages from anywhere, anytime, any way
- Facilitates conversations when real-time communication is unnecessary
- Is part of a complete Cisco CallManager IP telephony solution
- Uses the existing LAN/WAN infrastructure
- Offers redundancy and high availability
- Web based system administration
- Servers can be used as building blocks to scale from small deployments (100+) to large deployments (1000+)

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

Specifications

Feature	Cisco uOne Messaging Application
Telephone Access—Caller Services	Add a system or personal greeting Play back recorded messages Rerecord messages Append to a message Cancel or leave a message Leave another message for the same or different subscriber Choose from delivery options—mark as priority or confidential Transfer to another extension Single Number Reach—makes several attempts to reach the person live if caller desires Zero out to a subscriber-defined attendant Multiple language support is available
Telephone Access—Subscriber Services	Retrieve messages Control message playback—pause, rewind, advance, skip to end Record and send a new message Mark message priority and confidential Return to the previous message—go backward through the message queue Undelete a message while logged in Mark a read message as new Variable-length addressing and dialing plans are available Address/dial by name Reply with a message or a phone call (and return to the voice-mail session) Make a call (and return to the voice-mail session) Multiple language support is available
Telephone Access—Subscriber Administration	Record personal greetings Record extended absence greeting Modify a personal identification number (PIN) Configure Single Number Reach Define, record, and edit personal distribution list Define levels and modes of notification for various types of messages Set business days and hours Configure an attendant call coverage number
Web Access with Cisco uView—Subscriber Services	Retrieve voice messages via a standard Web browser and multimedia PC Control message playback—rewind and advance Reply to and forward messages Record and send a new message Define, record, and edit personal distribution list Set business days and hours Configure an attendant
Web Access with uPower Client—Subscriber Configuration	Define, record, and edit personal distribution list Set business days and hours Configure an attendant
Web Access with uPower Client—System Administration, Operations, and Maintenance	Web-based administration Class of service provisioning model Message aging Batch provisioning Automated installation script

For More Information

See the Cisco uOne Messaging Application Web site: www.cisco.com/go/uone

LAN and MAN Products

LAN and MAN Products at a Glance

Product	Features	Page
Metro 1500	Compact modular DWDM platform with fault tolerant hot-swappable modules • IBM ESCON/FICON Channel connectivity • Fiber Channel Storage Area Network applications • Fiber Channel/FICON Network Attached Storage applications	3-5
Cisco 1548 Series Micro Switches 10/100	Fixed-configuration 10/100 Fast Ethernet switches • 8 autosensing 10/100 ports • Managed and unmanaged versions • Part of the Cisco Networked Office stack family	3-8
Catalyst 1900 Series	Fixed-configuration Ethernet switches • 12 or 24 10BASE-T ports • Two 100BASE-TX, one 100BASE-TX and one 100BASE-FX, or two 100BASE-FX uplinks • Cisco switch clustering enabled • Managed	3-10
Catalyst 2900 Series	Fixed-configuration Ethernet switches • 10/100 autosensing and autonegotiating interface • 1000BASE-X GBIC uplinks • Managed	3-13
Catalyst 2900 Series XL	Fixed and modular 10/100 Ethernet switches • 12, 22, or 24 10/100 ports • 12 100BASE- FX ports (2912MF XL) • Two high-speed module slots accommodating 10/100, 100BASE-FX, Gigabit Ethernet (including 1000BASE-T), ATM, and GigaStack GBIC (2912MF XL and 2924M XL only) • Cisco switch clustering enabled • Managed	3-15
Catalyst 2948G-L3	Fixed-configuration Layer 3 (L3) Ethernet switch featuring wire-speed switching for Internet Protocol (IP), Internetwork Packet Exchange (IPX), and IP multicast • Dedicated 48 ports of 10/100 Mbps Ethernet • Two ports of 1000BASE-X Gigabit Ethernet with gigabit interface converter (GBIC) support • Managed	3-18
Catalyst 3500 Series XL	Fixed-configuration 10/100 and Gigabit Ethernet switches • 12, 24, or 48 10/100 ports with 2 GBIC-based Gigabit Ethernet ports • 24 ports with 2 GBIC-based Gigabit Ethernet ports with in-line power • 8 GBIC-based ports (3508G XL) • Stackable up to 9 switches with GigaStack GBIC • Cisco Switch Clustering capable • Managed	3-20
Catalyst 3900 Series	Fixed and modular Token Ring switches • 20 or 24 Token Ring ports • Stackable up to 8 switches • One FlexSlot accommodating additional Token Ring ports or ATM or ISL uplinks (Cisco 3900 only) • Managed	3-23

Product	Features	Page
Catalyst 4000 Series — Modular Configuration (4003 and 4906)	10/100/1000 Ethernet for wiring closet and sever switching with integrated WAN/Voice and intelligent Enterprise Cisco IOS Services • Ethernet, Fast Ethernet and Gigabit Ethernet • Wire speed Layer 2 and Layer 3 switching • Up to 60 Gbps of switching capacity • Managed	3-25
Catalyst 4000 Series — Fixed Configuration (4912G and 4908G-L3)	Fixed Gigabit Ethernet switches for backbone and server switching with intelligent enterprise Cisco IOS services • Dedicated Gigabit Ethernet • Wire speed Layer 2 or Layer 3 switching • Up to 24 Gbps of dedicated bandwidth • Managed	3-28
Catalyst 4840G	Fixed configuration integrated server load balancing and switching • 40 ports 10/100 with 2 port of 1000BASE-X (GBIC) • Wire speed server load balancing and switching at over 9 Mpps • Managed	3-30
Catalyst 5000 Family	Fully modular, high-performance, multimedia switches • Ethernet, Fast Ethernet, Fast EtherChannel, Gigabit Ethernet, FDDI/CDDI, Token Ring, and ATM modules • System multicast throughput ranging from 1 Mpps to >50 Mpps • Optional route switch module and NetFlow switching feature card for Layer 3 functionality • Managed	3-32
Catalyst 6000 Family	High-performance, multilayer switch for enterprise campus backbones or server aggregation • 10/100, 100FX Fast Ethernet, and Gigabit Ethernet modules • Layer 4-7 services • Packet throughput scalable to 100+ Mpps • Managed	3-36
Catalyst 8500 Series	High-performance, modular, multimedia switch router • Wire speed, nonblocking IP, IPX, IP multicast Layer 3 switching • Multiple interface options • Managed	3-40
Cisco 1538 Series Micro Hubs 10/100	Fixed-configuration 10/100 Fast Ethernet hubs • 8 autosensing 10/100 ports • Managed and manageable versions • Part of the Cisco Networked Office stack family	3-44
FastHub 400 10/100 Series Repeaters	Modular 10/100 Fast Ethernet hubs • 12 and 24 autosensing 10/100 ports • Managed and manageable versions • Stackable up to 4 units • Optional switched uplink modules	3-46

Cisco LAN and MAN Products Port Matrix

	Switches											Hubs	
	Cisco 1548U/1548M	Catalyst 1900	Catalyst 2900	Catalyst 2900 XL	Catalyst 3500 XL	Catalyst 3900	Catalyst 4000	Catalyst 4840G	Catalyst 5000	Catalyst 6000	Catalyst 8500	Cisco 1538/1538M	FastHub 400
Fixed Ports Only	X	X	X					X				X	
Fixed and Modular Ports				X	X	X	X						X
Modular Ports Only									X	X	X		
Ports													
10BASE-T Switched		X	X	X	X		X	X	X	X			
10BASE-FL Switched									X	X			
100BASE-T Switched		X	X	X	X		X	X	X	X			
100BASE-F Switched		X		X			X		X	X	X		
10/100 Autosensing Switched	X		X	X	X		X	X	X	X	X		
Shared 10BASE-T									X				
Shared 10/100												X	X
Shared 100BASE-T									X				
Token Ring						X			X				
FDDI/CDDI									X				
ATM				X		X			X	X	X		
Gigabit Ethernet			X	X	X		X	X	X	X	X		
Integrated In-Line Power					X		X			X			
Integrated Server Load Balancing								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

• Cisco's switch clustering technology enabling up to 16 interconnected Catalyst 1900, 2900 XL, and 3500 XL switches, regardless of geographical location, to form a flexible, single IP-managed network

• 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 XL, 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, 2948G-L3, 3500 XL, 4000, 4908G-L3, 5000, and 6000)

Cisco Metro 1500 32 Lambda DWDM Platform

The Cisco Metro 1500 series, Metropolitan Area Network DWDM is the industry's leading enterprise dense wave division multiplexer (DWDM) platform. Designed for high-performance, high-availability, and flexible configurations, the Cisco metro 1500 is protocol-independent, cost-effective, DWDM solution that supports 32 wavelengths per fiber.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Metro 1500	• IBM ESCON/FICON Channel connectivity • Gigabit Ethernet Connectivity • Fiber Channel Storage Area Network applications • Fiber Channel/FICON Network Attached Storage Applications • ATM/SONET Connectivity

Key Features

- Compact modular design with fault tolerant hot-swappable modules
- Transparent WDM modules from 10 Mbps to 1250 Mbps for multi-protocol support, including, Ethernet, Fast Ethernet, Gigabit Ethernet, ESCON, FDDI, Token Ring, and ATM OC-3
- Standards-based Management SNMP and CISCO View
- 200 GHz (1.6 nm) channel spacing based on ITU-T G.692 listed frequencies
- Single Span budget of 26 dB for 10 Mbps to 1250 Mbps (Gigabit)
- Line protection (1+1) for each fiber; line switching time <50 ms

Specifications

Feature	Cisco Metro 1500
Local Fiber	Single Mode Fiber: ITU-T G.652 Multi Mode Fiber: 50 µm and 62.5 µm
Remote Fiber	–Single Mode Fiber: ITU-T G.652 - Cladding Diameter: 125 +/–1.0 µm
High-Speed Transparent WCM	Local Link Ports – Data rate: 100 to 1250 Mbps – Transmitter wavelength: 1260 to 1310 nm – Receiver wavelength: 1260 to 1570 nm – Receiver dynamic range: –7.0 to –21.0 dBm – Transmitter output power: –6.0 to –12.0 dBm – Fiber type: Single-mode – Link distance: 1 km single-mode – Connector type: MiniSC Remote Link Ports – Data rate: 100 to 1250 Mbps – Wavelength: 1 of 32 according to ITU-T G.692 – Link loss budget – Without RSM: 26 dB – With RSM: 19 dB – Calculated link distance without Optical Amplification – Without RSM: Up to 104 km
Low-Speed Transparent WCM	Local Link Ports – Data rate: 10 to 200 Mbps – Transmitter wavelength: 1260 to 1310 nm – Receiver wavelength: 1260 to 1570 nm – Receiver dynamic range: –5.0 to –28.0 dBm – Transmitter output power: –16.0 to –21.0 dBm – Fiber type: Single-mode or multimode – Link distance: 1 km (single-mode) or 0.2 km (multimode) – Connector type: MiniSC Remote Link Ports – Data rate: 10 to 200 Mbps – Wavelength: 1 of 32 according to ITU-T G.692 – Power range (measured at WCM output): +6.0 to +3.0 dBm – Link loss budget – Without RSM: 26 dB – With RSM: 19 dB – Calculated link distance – Without RSM: Up to 104 km – With RSM: Up to 76 km
Minimum System Configuration for 8 Channel System	8 x WDM Channel Module (Low Speed; High Speed;) 1 x Optical Multiplexer 1 x Optical Demultiplexer 1 x Remote Switch Module (optional) 1 x Network Element Management Interface (NEMI) 2 x Power Supply Module 1 x Base Unit
Dimensions (HxWxD)	8.75 x 19 x 12 in.

Competitive Products

• LuxN: WavStation, WavFarer, WavPortal

• Nortel: Optera

Distribution Part Numbers and Ordering Information

Metro 1500 Model Numbers[1]

WS-M15-78000060	Chassis w/110-220V PS for 8 Cards
WS-M15-63021005	NEMI, 1-8 shelf or 17-24 shelf
WS-M15-68020050	Remote Switch Module (Redundant Links)
WS-M15-63021370	Multiplexer Ch.1-Ch.8 for use w/BSM,
WS-M15-63021371	Demultiplexer Ch.1-Ch.8 for use w/BSM,

WDM Modules, Low Speed Transparent

WS-M15-63021111	Module Ch. 1, 10-200Mb/s, 1310nm, MM
WS-M15-63021112	Module Ch. 2, 10-200Mb/s, 1310nm, MM
WS-M15-63021113	Module Ch. 3, 10-200Mb/s, 1310nm, MM
WS-M15-63021114	Module Ch. 4, 10-200Mb/s, 1310nm, MM
WS-M15-63021115	Module Ch. 5, 10-200Mb/s, 1310nm, MM
WS-M15-63021116	Module Ch. 6, 10-200Mb/s, 1310nm, MM
WS-M15-63021117	Module Ch. 7, 10-200Mb/s, 1310nm, MM
WS-M15-63021118	Module Ch. 8, 10-200Mb/s, 1310nm, MM

WDM Modules, High Speed Transparent

WS-M15-63021031	Module Ch. 1, 100-1250Mb/s, 1310nm, SM
WS-M15-63021032	Module Ch. 2, 100-1250Mb/s, 1310nm, SM
WS-M15-63021033	Module Ch. 3, 100-1250Mb/s, 1310nm, SM
WS-M15-63021034	Module Ch. 4, 100-1250Mb/s, 1310nm, SM
WS-M15-63021035	Module Ch. 5, 100-1250Mb/s, 1310nm, SM
WS-M15-63021036	Module Ch. 6, 100-1250Mb/s, 1310nm, SM
WS-M15-63021037	Module Ch. 7, 100-1250Mb/s, 1310nm, SM
WS-M15-63021038	Module Ch. 8, 100-1250Mb/s, 1310nm, SM
WS-M15-51000070	Mux/DMX-Cable (R)/ 0,20m/ Ch 6/7/8/14/15/16/RSM
WS-M15-51000071	Mux/DMX-Cable (R)/ 0,25m/ Ch 3/4/5/11/12/13
WS-M15-51000072	Mux/DMX-Cable (R)/ 0,30m/ Ch 1/2/9/10

Spare Parts

WS-M15-51000073	Connection Cable Mux-DMX / 0,75m
WS-M15-51000053	MiniSC - FC/PC / 3,0m / SM
WS-M15-51000074	MiniSC - FC/PC / 3,0m / MM
WS-M15-51000075	MiniSC - ST / 3,0m / SM
WS-M15-51000076	MiniSC - ST / 3,0m / MM
WS-M15-51000077	MiniSC - SC / 3,0m / SM
WS-M15-51000078	MiniSC - SC / 3,0m / MM
WS-M15-51000079	MiniSC - DIN / SM
WS-M15-51000080	MiniSC - DIN / MM
WS-M15-63021009	Blank panel, narrow
WS-M15-63021007	Blank panel, wide

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 Metro 1500 Web site: http://www.cisco.com/go/metro1500

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 10BASE-T 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 1548U	• 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

Key Features

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

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.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 1900 Series Standard Edition	• Lowest-cost switched Ethernet to individual desktops and 10BASE-T hubs • High-speed connections to 100BASE-T or 100BASE-FX backbones or servers • Software upgradable to Enterprise edition
Catalyst 1900 Series 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 Software command-line interface (CLI) • Dynamic multicast containment with CGMP • Increased reliability via uplinkfast

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 Software 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
Fixed Ports (connections)	12-port (10BASE-T) 1-port (AUI) 2-port 100BASE-TX **or** 1-port 100BASE-TX and 1-port 100BASE-FX (1912C)	24-port (10BASE-T) 1-port (AUI) 2-port 100BASE-TX, 1-port 100BASE-TX and 1-port 100BASE-FX (1924C), or 2-port 100BASE-FX (1924F)
Modular Slots	None	None
Backplane	1 Gbps	1 Gbps
Stackable	No	No
Full-Duplex Capabilities	Half/full duplex autonegotiated	Half/full duplex autonegotiated
VLAN Maximum	Up to four overlapping bridge groups or 1024 ISL VLANs	Up to four overlapping bridge groups or 1024 ISL VLANs
FEC	Yes	Yes
ISL	Yes	Yes
Management Capabilities	SNMP, out-of-band, Telnet, RMON, Cisco Visual Switch Manager Web-based interface, CWSI, CiscoView, StackView/Stack Maker	Same as Catalyst 1912
Processor	80486 CPU	80486 CPU
Flash Memory	1 MB	1 MB
DRAM	2 MB	2 MB
Embedded RMON	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics
Dimensions (HxWxD)	1.73 x 17.5 x 8.25 in.	1.73 x 17.5 x 8.25 in.
Service Category	1912-A, 1912C-A, 1912-EN: 2 1912C-EN: 3	1924-A, 1924-EN, 1924C-A, 1924F-A: 3 1924C-EN, 1924F-EN: 4

Competitive Products

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

Distribution Part Numbers and Ordering Information

Catalyst 1900 Switch Family (Standard)[1]

WS-C1912-A	12-port 10BASE-T, 2-port 100BASE-TX (Enterprise Upgradeable)
WS-C1924F-A	24-port 10BASE-T, 2-port 100BASE-FX
WS-C1912C-A	12-port 10BASE-T, 1-port 100BASE-TX, 1-port 100BASE-FX (Enterprise Upgradeable)
WS-C1924-A	24-port 10BASE-T, 2-port 100BASE-TX- Enterprise Upgradeable
WS-C1924C-A	24-port 10BASE-T, 1-port 100BASE-TX, 1-port 100BASE-FX (Enterprise Upgradeable)

Catalyst 1900 Switch Family (Enterprise)

WS-C1912-EN	12-port 10BASE-T + 2-port 100BASE-TX (ISL, CGMP, RMON)
WS-C1912C-EN	12-port 10BASE-T + 1-port 100BASE-TX + 1-port 100BASE-FX (ISL, CGMP, RMON)
WS-C1924-EN	24-port 10BASE-T + 2-port 100BASE-TX (ISL, CGMP, RMON)
WS-C1924C-EN	24-port 10BASE-T + 1-port 100BASE-TX + 1-port 100BASE-FX (ISL, CGMP, RMON)
WS-C1924F-EN	24-port 10BASE-T + 2-port 100BASE-FX

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-PKG2	Catalyst 1912-A, 1912C-A, 1912-EN SMARTnet Maintenance
CON-SNT-PKG3	Catalyst 1912C-EN, 1924-A, 1924-EN, 1924C-A, 1924F-A SMARTnet Maintenance
CON-SNT-PKG4	Catalyst 1924C-EN, 1924F-EN 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 1900 Web site: http://www.cisco.com/go/1900

Cisco Catalyst 2900 Series

The Catalyst 2948G and 2980G deliver all the Ethernet switching needed for many small- to medium-sized wiring closets in a single system without the need for additional modules, cables or other interconnects. Utilizing the same industry-leading software and functionality of the Catalyst 4000, 5000, and 6000 families, the Catalyst 2948G and 2980G have consistent end-to-end services, which ensure complete interoperability with enterprise Catalyst switches.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 2980G Series	• A single box solution without additional cables, modules or configuration • Up to 80 ports of wire-speed, non-blocking performance with large MTBF reliability • End-to-end VLANs, EtherChannel, multicasting, and security • Mature/proven Catalyst software compatibility in the wiring closet and data center
Catalyst 2948G Series	• The same features as 2980G but up to 48 ports of wire-speed, non-blocking performance

Key Features

- Powerful non-blocking performance with proven Cisco IOS services
- Wire speed 18 Million pps switching throughput
- Intelligent multilayer IOS services (security, multicast, quality of service [QoS])
- Advanced multiple queue QoS architecture
- Security (TACACS+, RADIUS, port lockdown)
- Spanning-Tree Protocol (802.1D) with enhancements (UplinkFast, PortFast) for deterministic/fast failover

Specifications

Feature	Catalyst 2980G	Catalyst 2948G
Fixed Ports (connections)	80-port 10/100BASE-TX 2-port 1000BASE-X (GBIC)	48-port 10/100BASE-TX 2-port 1000BASE-X (GBIC)
Backplane	24 Gbps	24 Gbps
Stackable	No	No
Full-Duplex Capabilities	All ports	All ports
VLAN Maximum	1024	1024
FEC	Yes	Yes
ISL	No	No
802.1Q	Yes	Yes
Management Capabilities	CiscoWorks 2000, CWSI, CiscoView, CDP, VTP, Enhanced SPAN, SNMP, Telnet Client, BOOTP, TFTP	CiscoWorks 2000, CWSI, CiscoView, CDP, VTP, Enhanced SPAN, SNMP, Telnet Client, BOOTP, TFTP
Processor Speed (Type)	200 MHz (R5000 RISC)	200 MHz (R5000 RISC)
Flash Memory	12 MB	12 MB
DRAM Memory	64 MB	64 MB
Embedded RMON	Statistics, history, alarms, events	Statistics, history, alarms, events
Dimensions (HxWxD)	3.5 x 17.5 x 17 in.	2.62 x 17.5 x 15 in.
Service Category	8	8

Competitive Products

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

Distribution Part Numbers and Ordering Information

Catalyst 2900 Series Switches[1]

WS-C2948G	Catalyst 2948G Switch,48 10/100Tx (RJ-45) +2 1000x (GBIC Slots)
WS-C2980G	Catalyst 2980G Switch,80 10/100Tx (RJ-45) +2 1000x (GBIC Slots)

Catalyst 2900 Series Modules

WS-G5484=	GBIC Module, fiber media SX
WS-G5486=	GBIC Module, fiber media LX/LH
WS-G5487=	GBIC Module, Fiber Media Zx

Mini-RMON Agent License

WS-C2948G-EMS-LIC	Catalyst 2948G RMON Agent License
WS-C2980G-EMS-LIC	Catalyst 2980G RMON Agent Agreement

Catalyst 2900 Series Accessories

WS-X2948G-RACK=	Catalyst 2948G Rack Kit (spare)
WS-X2980G-RACK=	Catalyst 2980G Rack Kit (Spare)
PWR600-AC-RPS-CAB	Redundant Power Supply (RPS), 600 Watts (2948G only)
PWR600-AC-RPS-NCAB	RPS without Cable (2948G only)

Catalyst 2900 Series Basic Maintenance

CON-SNT-PKG8	Catalyst 2948 and 290G 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 2900 Web site: 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 2912XL	• 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 100BASE-FX 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 (including 1000BASE-T) and ATM interface modules for high-speed links • Hot swap insertion and removal of modules • Maximum flexibility

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 802.1p protocol for prioritization of mission-critical and time-sensitive applications such as voice and telephony traffic

- 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

- Up to 250 port-based VLANs or ISL/802.1Q trunks (64 for non-modular switches)

- 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 2912 MF XL	Catalyst 2924 XL	Catalyst 2924C XL	Catalyst 2924M XL
Fixed Ports	12-port 10/100 autosensing	12-port 100BASE-FX	24-port 10/100 autosensing	24-port (22 10/100 ports autosensing & 2 ports 100BASE-FX)	24-port 10/100 autosensing
Modular Slots	None	2	None	None	2
Available Modules	None	4-port switched 10BASE-T/100BASE-TX autosensing 2-port switched 100BASE-FX 4-port 100BASE-FX 1-port 1000BASE-T Gigabit 1-port GBIC-based Gigabit 1-port ATM OC-3 (UTP, multimode, medium & long reach)	None	None	Same as Catalyst 2912MF XL
Backplane	3.2 Gbps	3.2 Gbps	3.2 Gbps	3.2 Gbps	3.2 Gbps
Stackable	No	Yes	No	No	Yes
Full Duplex Capabilities	All ports	All 10BASE-T, 100BASE-TX, 100BASE-FX, 1000BASE-X, 1000BASE-T, and ATM ports	All ports	All ports	Same as Catalyst 2912MF XL
VLAN Maximum	64-port-based VLANs or ISL/802.1Q trunks	250-port-based VLANs or ISL/802.1Q trunks	64-port-based VLANs or ISL/802.1Q trunks	64-port-based VLANs or ISL/802.1Q trunks	250-port-based VLANs or ISL/802.1Q trunks
FEC	Yes	Yes	Yes	Yes	Yes
ISL	Yes	Yes	Yes	Yes	Yes
Management Capabilities	SNMP, Telnet, RMON, CWSI, (CLI)-based out-of-band, embedded Cisco Visual Switch Manager Web-based interface	Same as Catalyst 2912 XL	Same as Catalyst 2912 XL	Same as Catalyst 2912 XL	Same as Catalyst 2912 XL
Processors	Cisco designed ASICs, Power PC 403C	Same as Catalyst 2912 XL	Same as Catalyst 2912 XL	Same as Catalyst 2912 XL	Same as Catalyst 2912 XL
Flash Memory	4 MB	4 MB	4 MB	4 MB	4 MB
CPU DRAM	8 MB	8 MB	8 MB	8 MB	8 MB
Embedded RMON	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics
Dimensions (HxWxD)	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.
Service Category	2	4	2	4	4

Competitive Products

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

Distribution Part Numbers and Ordering Information

Catalyst 2900 Series XL Switches[1]

WS-C2912MF-XL	12-port 100BASE-FX, 2 module slots
WS-C2912-XL-EN	12-port 10/100 (autosensing)
WS-C2924C-XL-EN	22-port 10/100 (autosensing), 2-port 100BASE-FX
WS-C2924M-XL-EN	24-port 10/100 (autosensing), 2 module slots
WS-C2924-XL-EN	24-port 10/100 (autosensing)
WS-C2924M-XL-EN-DC	24-port 10/100 (autosensing), 2 module slots, DC powered

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
WS-C2924-XL-EN-5P	Five Catalyst 2924XL Switches
WS-C2924C-XL-EN-5P	Five Catalyst 2924CXL Switches

Catalyst 2900 Series XL Modules

WS-X2914-XL-V	4-port 10/100 ISL/802.1Q Module
WS-X2924-XL-V	4-port 100BASE-FX ISL/802.1Q Module
WS-X2922-XL-V	2-port 100BASE-FX ISL/802.1Q Module
WS-X2931-XL	1-port, GBIC-based, 1000BASE-X Switch Uplink Module
WS-X2932-XL	1-port 1000BASE-T 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; 1000BASE-SX short wavelength, multimode fiber
WS-G5486=	LX GBIC; 1000BASE-LX/LH, long wavelength/long haul, single or multimode fiber

Catalyst 2900 Series XL Software

WS-C2900-SA6-CM	Catalyst 2900 XL Command Software Upgrade
WS-C2900-SA6-EN	Catalyst 2900-XL Enterprise Edition Software
WS-C2900-SA6-10EN	Catalyst 2900-XL Enterprise Software, 10-system license

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-PKG2	Catalyst 2912 XL and 2924 XL SMARTnet Maintenance
CON-SNT-PKG4	Catalyst 2912MF XL, 29124C XL, and 2924M 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.)

For More Information

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

Cisco Catalyst 2948G-L3

The Catalyst 2948G-L3 switch is a fixed-configuration Layer 3 (L3) Ethernet switch featuring wire-speed switching for Internet Protocol (IP), Internetwork Packet Exchange (IPX), and IP multicast. This new Catalyst switch provides the high-performance that is required for mid-size campus backbones with just the right port density. It is ideal for aggregating multiprotocol traffic from multiple wiring closets or workgroup switches such as the Catalyst 2900, Catalyst 3500, Catalyst 4000, or Catalyst 5000 switches.
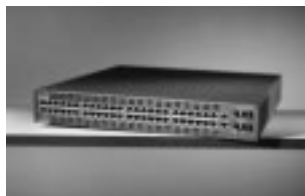
When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 2948G-L3	• Cisco's lowest priced Layer 3 backbone solution • Catalyst 2948G-L3 is ideal for backbone deployment in small to mid-size networks for those customers who need: – Wire speed Layer 3 performance but do not require high 10/100 Mbps Ethernet port counts or Gigabit Ethernet density – Cost effective feature-rich wire-speed routing and switching for IP, IPX and IP Multicast – Mature/proven Cisco IOS Software compatibility in the backbone – Advanced QOS features to help manage bandwidth and protect mission critical applications

Key Features

- Dedicated 48 ports of 10/100 Mbps Ethernet and two ports of 1000BASE-X Gigabit Ethernet with gigabit interface converter (GBIC) support; all ports with Layer 3 switching capability

- Supports RIP I, RIP II, BGPv4, Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Protocol Independent Multicast (PIM) (dense and sparse), Hot Standby Router Protocol (HSRP) and Distance Vector Multicast Routing Protocol (DVMRP) interoperability

- High-performance—more than 10 Mpps Layer 3 switching and routing of IP, IPX switches, and IP multicast

- High-performance CPU with Cisco IOS Software

- Quality of service (QoS)—multiple queues with weighted round robin (WRR) scheduling per port traffic policing and shaping

- Fast Etherchannel and Gigabit Etherchannel

- Comprehensive management tools based on standard CiscoWorks2000 applications

- Optional redundant external power supply

- Security—Access Lists on Gigabit ports

Specifications

Feature	Catalyst 2948G-L3
Fixed Ports	48-port 10/100BASE-TX, 2-port 1000BASE-X (GBIC) all Layer 3
Modular Slots	None
Available Modules	None
Backplane	22 Gbps
Stackable	No
Full Duplex Capabilities	All ports
VLAN Maximum	1024
FEC	Yes
ISL	Yes - All Ports
802.1Q	Yes - All Ports
Management Capabilities	CiscoWorks 2000, CWSI, CiscoView, CDP, VTP, Enhanced SPAN, SNMP, Telnet Client, BOOTP, TFTP
Processors	150 MHz (R5000 RISC)
Flash Memory	12 MB
DRAM	64 MB
Embedded RMON	Statistics, history, alarms, events
Dimensions (HxWxD)	2.69 x 17.1 x 18 in.
Service Category	8

Competitive Products

- Cabletron: Smart Switch Router 2000

- Extreme Summit 48

- Hewlett-Packard: ProCurve 1600M

- Nortel/Bay: Accelar 1100

Distribution Part Numbers and Ordering Information

Catalyst 2948G-L3[1]

WS-C2948G-L3	Catalyst 2948G-L3 switch, fixed 48 10/100 FE, 2 1000BASE-X (GBIC). Includes support for IP, IP multicast, and bridging. Note: GBIC module needs to be ordered separately.
FR2948GL3-IP=	Catalyst 2948G-L3 Advanced IP switching License, Includes OSPF, IGRP, EIGRP
FR2948GL3-IPX=	Catalyst 2948G-L3 IPX switching License
WS-G5484=	1000BASE-SX GBIC module
WS-G5486=	1000BASE-LX/LH GBIC module
WS-G5487=	1000BASE-ZX GBIC module
CAB-GELX-625=	Gigabit Ethernet multimode conditioning cable
PWR600-AC-RPS-NCAB	600W redundant AC power system without DC power cables
CAB-RPSY-2218=	RPS 22/18 two-to-one DC power cable
STKRACKMOUNT1.5RU=	Rack Mount Kit for 1.5RU Catalyst 2948G-L3

Mini-RMON Agent License

WS-C2948G-EMS-LIC	Catalyst 2948G-L3 RMON Agent License

Catalyst 2948G-L3 Basic Maintenance

CON-SNT-PKG8	Catalyst 2948G-L3 SMARTnet basic 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 2900 Web site: http://www.cisco.com/go/2900

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, flexibility, and manageability 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.

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 3524-PWR XL	• A stackable, wire-speed 10/100 and Gigabit Ethernet switch for delivering dedicated 10 or 100 Mbps to individual users and servers • Advanced QoS, high availability, and integrated in-line power enabling IP telephony and other integrated voice, video, and data applications
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 1000BASE-X GBICs • Dedicated, high-speed Gigabit Ethernet performance

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, 1000BASE-SX and 1000BASE-LX/LH GBICs, and 1000BASE-ZX extended reach GBIC

• 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

• Support for in-line power (3524-PWR XL only) to power IP phones and other network devices

Specifications

Feature	Catalyst 3512 XL	Catalyst 3524 XL	Catalyst 3524-PWR XL	Catalyst 3548 XL	Catalyst 3508G XL
Fixed Ports	12-port 10/100 autosensing 2-port 1000BASE-X (GBIC)	24-port 10/100 autosensing 2-port 1000BASE-X (GBIC)	24-port 10/100 autosensing 2-port 1000BASE-X (GBIC)	48-port 10/100 autosensing 2-port 1000BASE-X (GBIC)	8-port 1000BASE-X (GBIC)
Modular Slots	None	None	None	None	None
Backplane	10 Gbps	10 Gbps	10 Gbps	10 Gbps	10 Gbps
Stackable	Yes	Yes	Yes	Yes	Yes
Full-Duplex Capabilities	All ports	All ports	All ports	All ports	All ports
VLAN Maximum	250-port-based VLANs or ISL/802.1Q trunks	Same as Catalyst 3512 XL	Same as Catalyst 3512 XL	Same as Catalyst 3512 XL	Same as Catalyst 3512 XL
FEC	Yes	Yes	Yes	Yes	Yes
ISL	Yes	Yes	Yes	Yes	Yes
In-Line Power	No	No	Yes	No	No
Management Capabilities	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	Same as Catalyst 3512 XL
Processors	Cisco designed ASICs	Cisco designed ASICs	Cisco designed ASICs	Cisco designed ASICs	Cisco designed ASICs
Flash Memory	4 MB	4 MB	4 MB	4 MB	4 MB
CPU DRAM	8 MB	8 MB	8 MB	8 MB	8 MB
Embedded RMON	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics	History, Events, Alarms, Statistics
Dimensions (HxWxD)	1.75 x 17.5 x 11.8 in	1.75 x 17.5 x 11.8 in	1.75 x 17.5 x 11.8 in	1.75 x 17.5 x 16 in	1.75 x 17.5 x 11.8 in
Service Category	4	5	5	6	9

Competitive Products

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

Distribution Part Numbers and Ordering Information

Catalyst 3500 Series XL Switches[1]

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

Catalyst 3500 Series XL Accessories

WS-X3500-XL	GigaStack GBIC
CAB-GS-1M	1 meter cable for GigaStack GBIC
WS-G5484=	1000BASE-SX GBIC
WS-G5486=	1000BASE- LX/LH GBIC
WS-G5487=	1000BASE- ZX extended reach GBIC

Catalyst 3500 Series XL Basic Maintenance

CON-SNT-PKG4	Catalyst 3512 XL SMARTnet Maintenance
CON-SNT-PKG5	Catalyst 3524 XL and 3524-PWR XL SMARTnet Maintenance
CON-SNT-PKG6	Catalyst 3548 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.)

For More Information

See the Catalyst 3500 series XL Web site: 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 3900	• 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

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 (Tolly Group Industry Study)

Competitive Products

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

Specifications

Feature	Catalyst 3900	Catalyst 3920
Fixed Ports	20-port Token Ring	24-port Token Ring
Modular Slots	2	None
Available Modules	4-port Token Ring (UTP/STP, RJ-45) 4-port Token Ring (MMM, ST) 1-port ATM (MMM, SC) 2-port 100BASE-TX with ISL (UTP, RJ-45) 2-port 100BASE-FX with ISL (MMF, SC)	None
Backplane	520 Mbps	520 Mbps
Stackable	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
Full-Duplex Capabilities	All ports	All ports
VLAN Maximum	63	63
ISL	2-port fiber or copper	None
Management Capabilities	SNMP and out-of-band console, Telnet, CiscoView, TrafficDirector™ software	SNMP and out-of-band console, Telnet, CiscoView, TrafficDirector software, CWSI
Embedded RMON	With optional RMON feature	With optional RMON feature
Dimensions (HxWxD)	3.4 x 17.4 x 15.3 in.	1.7 x 17.4 x 11.1 in.
Service Category	9	6

Distribution Part Numbers and Ordering Information

Catalyst 3900 Switch Family[1]

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 100BASE-TX Module (ISL, UTP, RJ-45)
WS-C3900-2ISLF=	2-port 100BASE-FX Module (ISL, multimode fiber, SC)
WS-C3900-4R=	4-port Token Ring Module (UTP, RJ-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

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.)

For More Information

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

Cisco Catalyst 4000 Series — Modular Configuration

The Catalyst 4003 and 4006 are cost-effective modular chassis that deliver the benefits of a converged wiring closet to every user in an enterprise or branch office. New Catalyst 4000 Family capabilities include integrated LAN/WAN and voice additions. The Catalyst 4000 Family is designed to integrate the features/performance required in today's wiring closets, and at the same time protect the seamless introduction of tomorrow's enterprise enhancements.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 4006	• Fast Ethernet Port density up to 240 10/100 ports with modular investment protection
Catalyst 4003	• Fast Ethernet Port density up to 96 10/100 ports with modular investment protection

Note: Compatible sparing between Catalyst 4003 and 4006 chassis provides investment protection with commonality of power supplies and switching line cards, thus lowering the total cost of ownership. The Catalyst 4000 family also leverages the same feature set with identical software code base along with the same enterprise functionality as the Catalyst 6000 Series in the wiring closet, delivering a consistent end-to-end solution.

Key Features

- Catalyst 4000/5000/6000 Family Enterprise Software, single IP-Address Management, and security (TACACS+, port lockdown, RADIUS, Kerberos)
- Enterprise VLANs (1,024) with 802.1Q support on all ports, 16,000 MAC Addresses, and Spanning-Tree Protocol (802.1D) enhancements (UplinkFast, PortFast, and BackboneFast) for deterministic/fast failover
- Fast and Gigabit EtherChannel aggregation (up to 8 Gbps), load balancing and failover on every port, and port filtering
- - LAN/WAN and voice integration

Layer 3 Multi-protocol Router/QOS Switching Linecard Features:

- 8 Gbps capacity layer 3 switching for the entire system; 6 Mpps layer 3 Switching and Routing of IP, IPX, IP Multicast, AppleTalk, and BGP4
- Supports RIP I, RIP II, Open Shortest Path First (OSPF), Interior Gateway Routing Protocol (IGRP) Enhanced IGRP (EIGRP), DHCP Relay, Hot Standby Router Protocol (HSRP), Cisco Group Management Protocol (CGMP), Internet Control Message Protocol (ICMP), and both Protocol Independent Multicast (PIM) sparse and dense modes, and Distance Vector Multicast Routing Protocol (DVMRP) interoperability
- Quality of Service—multiple queues with Weighted Round Robin (WRR) scheduling and traffic shaping and traffic policing
- Security—Hardware-based access control lists supported on dual Gigabit Ethernet uplinks (standard and extended)
- ISL on Gigabit Ethernet ports

Specifications

Feature	Catalyst 4003	Catalyst 4006
Fixed Ports	None	2 Gigabit uplink ports on Supervisor Engine II
Maximum Port Density	96 (10/100 Ethernet)	240 (10/100 Ethernet)
Modular Slots	3 (1 for Supervisor)	6 (1 for Supervisor)
Available Modules	Supervisor Engine 1	Supervisor Engine II
Backplane Capacity	24 Gbps	60 Gbps
Stackable	No	No
Hot-Swappable Power Supplies	2 bays (1 required, 1 for redundancy)	3 bays (2 required, 1 for redundancy)
VLAN Maximum	1,024	1,024
802.1Q	Yes (on all ports)	Yes (on all ports)
ISL	Yes (L3 Module)	Yes (L3 Module)
Management Capabilities	Inboard console via terminal or modem, outboard via Telnet, SNMP, CiscoView, CWSI, CiscoWorks 2000	Same as Catalyst 4003
Embedded RMON	Statistics, History, Alarm, Events	Same as Catalyst 4003
Dimensions (HxWxD)	10.5 x 17.25 x 12 in.	17.5 x 17.25 x 12 in.
Service Category	11	12

Competitive Products

• Cabletron: SmartSwitch 6000

• Extreme Networks: Summit 48, Alpine 3804, and Alpine 3808

• Nortel Networks: BayStack 450T

Distribution Part Numbers and Ordering Information

Catalyst 4000 Switch Family[1]

WS-C4003-S1-82	Catalyst 4003 Bundle. Common Equipment with 80-10/100 FE (RJ-45) and 2 1000 GE (GBIC)
WS-C4003-S1	Catalyst 4003 Chassis (3-Slot), Supervisor Engine 1, 1-AC Power Supply, Fan Tray, Rack-Mount Kit
WS-C4006-S2	Catalyst 4006 Chassis (6-Slot), Supervisor II, (2)AC Power Supplies, Fan Tray, Rack-Mount Kit
WS-C4003=	Catalyst 4000 Chassis (3-Slot), Single AC Power Supply (Spare)
WS-C4006=	Catalyst 4006 Chassis (6-Slot), 2 AC PS, Fan Tray (Spare)

Common Equipment

WS-X4004=	Catalyst 4003 Fan Tray (Spare)
WS-X4005=	Catalyst 4006 Fan Tray (Spare)
WS-X4008=	Catalyst 4003/4006 AC Power Supply (Spare)
WS-X4012=	Catalyst 4003 Supervisor Engine I, Console (DB-25), Mgt. (RJ-45) (Spare)
WS-X4013=	Catalyst 4006 Supervisor Engine II, Console (RJ-45), Mgt. (RJ-45) (Spare)
WS-X4019=	Catalyst 4006 Backplane Channel Module (Spare)
WS-X4095-PEM=	Catalyst 4000 DC Power Entry Module (Spare)
WS-X4098=	Catalyst 4006 Rack-Mount Kit (Spare)
WS-X4099=	Catalyst 4003 Rack-Mount Kit (Spare)
WS-X4608=	Catalyst 4603 Power Supply Unit for WS-P4603
WS-P4603=	Catalyst 4000 Aux. Power Shelf (3 slot) (spare)
WS-U4604-DSP=	Catalyst 4000 DSP Set, 4x6 SIMMs for WS-X4604-GWY=

Line Card Modules and GBICs

WS-X4124-FX-MT=	Catalyst 4000 FE Switching Module, 24-port 100FX (MTRJ)
WS-X4148-RJ=	Catalyst 4000 10/100 Fast Ethernet Module, 48 Ports (RJ-45)
WS-X4148-RJ21=	Catalyst 4000 Telco switch module, 48-port 10/100 (4xRJ21)
WS-X4148-RJ45V=	Catalyst 4000 Inline Power 10/100, 48-port (RJ45)
WS-X4232-GB-RJ=	Catalyst 4000 E/FE/GE Module, 2-GE (GBIC), 32-10/100 FE (RJ-45)
WS-X4232-RJ-XX=	Catalyst 4000 FE Base Module, 32-10/100(RJ45)+ Modular Uplink slot
WS-X4232-L3=	Catalyst 4000 E/FE/GE L3 Module, 2-GE(GBIC), 32-10/100 (RJ45)
WS-X4306-GB=	Catalyst 4000 Gigabit Ethernet Module, 6 Ports (GBIC)

Cisco Catalyst 4000 Series — Modular Configuration

WS-X4418-GB=	Catalyst 4000 GE Module, Server Switching 18 Ports (GBIC)
WS-U4504-FX-MT=	Catalyst 4000 FE Uplink Daughter Card, 4-port 100FX (MTRJ)
WS-X4412-2GB-T=	Catalyst 4000 GE Module, 12-1000T (RJ45)+2-1000X (GBIC Slot)
WS-X4604-GWY=	Catalyst 4000 Access Gateway Module with IP/FW software
WS-G5484=	1000BASE-SX Shortwave GBIC Module (Multimode Only)
WS-G5486=	1000BASE-LX/LH Long Haul GBIC Module (Multimode or Single Mode)
WS-G5487=	1000 BASE-ZX GBIC module (Single Mode Only)

Catalyst 4000 Software

S4KAGMCH-12103XI=	Catalyst 4000 AGM IOS IP/Firewall Feature set
S4KAGMCU-12103XI=	Catalyst 4000 AGM IOS IP/FW/DSP Plus Feature set
FL4KAGM-CH-CU=	Catalyst 4000 AGM IOS upgrade IP/FW to IP/FW/DSP Plus
FR4232-L3-IP=	Enhanced IP License
FR4232-L3-IPX=	IPX License
WS-C4006-EMS-LIC	Catalyst 4006 RMON Agent License
WS-C4003-EMS-LIC	Catalyst 4003 RMON Agent License

Catalyst 4000 Series Access Gateway Module Interface Cards

VIC-2BRI-S/T-TE=	Two-port Voice Interface Card - BRI (Terminal)
VIC-2FXO=	Two-port Voice Interface Card - FXO-Spare
VIC-2FXO-EU=	Two-port Voice Interface Card - FXO (for Europe)
VIC-2FXS=	Two-port Voice Interface Card - FXS-Spare
VWIC-2MFT-E1-DI=	2-Port RJ-48 Multiflex Trunk - E1 With Drop and Insert
VWIC-2MFT-T1-DI=	2-Port RJ-48 Multiflex Trunk - T1 With Drop and Insert
WIC-1DSU-56K4=	1-Port 4-Wire 56Kbps DSU/CSU WAN Interface Card
WIC-2A/S=	2-Port Async/Sync Serial WAN Interface Card spare

Catalyst 4000 Basic Maintenance

CON-SNT-PKG11	Catalyst 4003 SMARTnet Basic Maintenance
CON-SNT-PKG12	Catalyst 4006 SMARTnet Basic 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 Web site: http://www.cisco.com/go/cat4000

Cisco Catalyst 4000 Series — Fixed Configuration

Cisco offers two dedicated Gigabit Ethernet fixed configuration switches; the Catalyst 4908G-L3 and the Catalyst 4912G. The Catalyst 4908G-L3 Switch is a fixed configuration Layer 3 Ethernet switch featuring wire-speed switching for IP, IPX, IP Multicast. The Catalyst 4908G-L3 provides the high performance required for midsize campus backbones with optimum port density. It is ideal for aggregating multiprotocol traffic from multiple wiring closets or workgroup switches such as the Catalyst 2900, Catalyst 3500, Catalyst 4000, and Catalyst 5000. The Catalyst 4912G offers 12-port dedicated Layer 2 Gigabit Ethernet switching.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 4908G-L3	• Cisco's lowest priced dedicated Gigabit Ethernet Layer 3 backbone solution ideal for backbone deployment in small to mid-size networks for those customers who need wire speed Layer 3 performance but do not require Gigabit Ethernet density over 8 ports • Small server farm aggregation where Layer 3 services are required; cost effective wire-speed routing and switching for IP, IPX and IP Multicast; Cisco IOS Software compatibility in the backbone, advanced QOS features to help manage bandwidth and protect mission critical applications
Catalyst 4912G	• Advanced wirespeed, non-blocking Layer 2 Gigabit Ethernet performance with intelligent Cisco IOS services and high-speed connections to workstations or servers; flexible Gigabit Interface Converter (GBIC) interfaces on all ports

Key Features

- Catalyst 4908G-L3:
  - 8 ports of 1000BASE-X Gigabit Ethernet with GBIC support; Layer 3 switching and routing of IP, IPX, and IP Multicast with wire-speed Layer 2 switching for non-routable protocols; Gigabit Etherchannel capability on every port
  - RIP I, RIP II, BGPv4, Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Protocol Independent Multicast (PIM) (dense and sparse), Hot Standby Router Protocol (HSRP) and Distance Vector Multicast Routing Protocol (DVMRP) interoperability
  - High Performance CPU with proven Cisco IOS Software, security (Access Lists, TACACS+, RADIUS), and Quality of Service—multiple queues with Weighted Round Robin (WRR) scheduling per port traffic policing and shaping
- Catalyst 4912G:
  - Wire-speed performance with 24 Gbps of dedicated bandwidth for nonblocking Gigabit Ethernet concentration, broad Gigabit EtherChannel availability, and GBIC flexibility on fiber port interfaces covering a wide range of cabling distances
  - Catalyst 5000 Family software compatibility; redundant, hot-swappable external power supply (option) and other fault-tolerant features

Specifications

Feature	Catalyst 4908G-L3	Catalyst 4912G
Fixed Ports	8 (All Layer 3)	12 (All Layer 2)
Modular Slots	—	—
Available Modules	—	—
Backplane Capacity	22 Gbps	24 Gbps
Stackable	No	No
VLAN Maximum	1,024	1,024
802.1Q	Yes	Yes
ISL	Yes	No
Management Capabilities	Inboard console via terminal or modem, outboard via Telnet, SNMP, CiscoView, CWSI, CiscoWorks 2000	Same as Catalyst 4908G-L3
Embedded RMON	Statistics, History, Alarm, Events	Same as Catalyst 4908G-L3
Dimensions (HxWxD)	2.69 x 17.1 x 18 in.	2.75 x 17.5 x 15 in.
Service Category	12	12

Competitive Products

- Cabletron: SSR2100
- Extreme Networks: Summit 1
- Foundry: Turbo Iron 8
- Nortel: Accellar 1200

Distribution Part Numbers and Ordering Information

Catalyst 4000 Switch Family[1]

WS-C4908G-L3	Catalyst 4908G-L3 switch, 8 port 1000BASE-X L3 Switch (GBIC). Note: GBIC modules need to be ordered separately
FR4908GL3-IPX=	Catalyst 4908G-L3 IPX switching License
WS-C4912G	Catalyst 4912G switch, fixed 12-ports switched 1000BASE-X (GBIC)
WS-G5484=	1000BASE-SX GBIC module
WS-G5486=	1000BASE-LX/LH GBIC module
WS-G5487=	1000BASE-ZX GBIC module
STKRACKMOUNT1.5RU=	Rack Mount Kit for 1.5RU Catalyst 4908G-L3
WS-X4912G-RACK=	Catalyst 4912G rack-mount kit (spare)
PWR600-AC-RPS-NCAB	600W redundant AC power supply without DC power cables
CAB-RPSY-2218	RPS 22/18 two-to-one DC power cable

Mini-RMON Agent License

WS-C4900-EMS-LIC=	RMON License
WS-C4912G-EMS-LIC	Catalyst 4912G RMON Agent License
WS-C4908G-EMS-LIC	Catalyst 4908G-L3 RMON Agent License

Catalyst 4000 Basic Maintenance

CON-SNT-PKG12	Catalyst 4908G-L3 and 4912G SMARTnet Basic 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 Web site: http://www.cisco.com/go/cat4000

Cisco Catalyst 4840G

The Catalyst 4840G is cost-effective, high performance, feature rich, server load balancing switch ideally suited for firewall and server farms that require wire-speed traffic balancing among many servers. In addition to wire-speed SLB, the Catalyst 4840G supports wire-speed routing and switching of IP across its interfaces. This new switch provides the high performance that is required for Firewall Load Balancing or Enterprise/Internet Service Provider (ISP) solutions such as web hosting or content delivery in an integrate Layer 2-4 switch.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 4840G	Catalyst 4840G is ideally suited for server farms for those customers who need: • Wire-speed traffic balancing among many servers on 10/100 Mbps Ethernet ports • Mature/proven IOS software with proven load-balancing algorithms • Cost effective feature-rich wire-speed routing and switching for IP • Advanced QOS features to help manage bandwidth and protect mission critical applications.

Key Features

- Dedicated 40-ports of 10/100-Mbps Ethernet and 2-ports of 1000BASE-X Gigabit Ethernet with GBIC support; all ports provide server load balancing and IP Layer 3 switching capability High Performance—wire speed firewall load balancing, server load balancing, and Layer 3 switching at over 9 Mpps

- 22-Gbps non-blocking switch fabric

- Multi-processor architecture: Cisco IOS software provides rich SLB algorithms and services as well as L-3 switching support, hardware application-specific integrated circuits (ASICs) for switching

- Resiliency feature—support for switch generated Hypertext Transfer Protocol (HTTP) health checks, Dynamic Feedback Protocol (DFP), and stateful/stateless redundancy between Catalyst 4840Gs.

- Quality of service (QoS)—multiple queues with Weighted Round Robin (WRR) scheduling

- 56,000+ connections-per-second setup rate

- 240,000 hardware-based concurrent sessions with up to 1 million software based-concurrent sessions

- Supports RIP I, RIP II, Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Internet Group Management Protocol (IGMP) 1 and 2, and Hot Standby Router Protocol (HSRP) among many other L-3 protocols

Specifications

Feature	Catalyst 4840G
Fixed Ports	F40-port 10/100BASE-TX, 2-port 1000BASE-X (GBIC)
Backplane Capacity	22 Gbps
Stackable	No
Full Duplex	All ports
VLAN Maximum	1,024
FEC	Yes
Integrated SLB	Yes
ISL	Yes - all ports
802.1Q	Yes - all ports
Management Capabilities	CiscoWorks 2000, SNMP Management Information Base (MIB) II, Cisco Server load Balancing MIB
Processor Speed	150 MHz (R5000 RISC)
Flash Memory	16 MB to 24 MB
DRAM Memory	128 MB
Embedded RMON	Statistics, History, Alarm, Events
Dimensions (HxWxD)	3.46 x 17.18 x 18.76 in.
Service Category	13

Competitive Products

- Alteon: AceSwitch 180e
- Extreme: Summit 7i
- Foundry: ServerIronXL

Distribution Part Numbers and Ordering Information

Catalyst 4840G Switch Family[1]

WS-C4840G	WS-C4840G Catalyst 4840G Server Load Balancing Switch, fixed 40 10/100 FE, 2 1000BASE-X (GBIC) Note: GBIC module needs to be ordered separately
MEM-C6K-FLC16M	PCMCIA Flash Memory Card, 16MB Option
MEM-C6K-FLC24M	PCMCIA Flash Memory Card, 24MB Option
WS-G5484	1000BASE-SX GBIC module
WS-G5486	1000BASE-LX/LH GBIC module
WS-G5487	1000BASE-ZX (extended reach) GBIC module
CAB-GELX-625	Gigabit Ethernet multimode conditioning cable
C4840-PSRACK-PS=	Catalyst 4840 Redundant Power Supply Rack with 1 Power Supply
C4840-PSRACK=	Catalyst 4840 Redundant Power Supply Rack (No Power Supply)
C4840-PS=	Catalyst 4840 Redundant Power Supply (requires rack)

Mini-RMON Agent License

WS-C4840G-EMS-LIC	Catalyst 4840G-L3 RMON Agent License

Catalyst 5000 Family Basic Maintenance

CON-SNT-PKG13	Catalyst4840G 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 4840G series Web site: http://www.cisco.com/go/4840g

Cisco Catalyst 5000 Family

The Cisco 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 5000	• Desktop/server connectivity • Five slots—up to 192 10BASE-T ports or 144 10/100 ports
Catalyst 5002	• Workgroup connectivity • Two slots—up to 48 10BASE-T 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 10BASE-T ports or 396 10/100 ports)
Catalyst 5505	• Gigabit Ethernet (high-performance desktop/server connectivity) • Full system redundancy • Five slots—up to 192 10BASE-T 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 10BASE-T ports or 288 10/100 ports

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	5002	5500	5505	5509
Modular Slots	5	2	13	5	9
Available Modules	Supervisor[1] Engine II, II G, III G, or III plus any combination of the following modules: 48-port Switched 10BASE-T Ethernet 12-port Switched 10BASE-FL Ethernet 24-port Switched 10BASE-FL Ethernet 24-port Switched 10/100BASE-TX Backbone Fast Ethernet 24-port Switched 10/100BASE-TX Desktop Fast Ethernet 24-port Switched 10/100BASE-TX Fast Ethernet with QoS 36-port Switched 10/100BASE-TX Fast Ethernet with QoS 12-port Switched 100BASE-FX Fast Eth 24-port Switched 100BASE-FX Fast Eth with QoS 9-port Switched Gigabit Eth (GBIC) 3-port Switched Gigabit Eth (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
Backplane	1.2 Gbps	1.2 Gbps	3.6 Gbps ATM switching: 5-Gbps backplane	3.6 Gbps	3.6 Gbps
Stackable	No	No	No	No	No
Full-Duplex Capabilities	All Ethernet, Fast Ethernet, Token Ring, and ATM ports	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000
VLAN Maximum	Spanning tree: Yes per VLAN 1000 VLANs	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000
FEC	24 100BASE-TX/ FEC switching 12 100BASE-FX/ FEC switching	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000	Same as Catalyst 5000
Management Capabilities	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
Dimensions (HxWxD)	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.
Service Category	13	9	16	13	15

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

Competitive Products

- Cabletron: SmartSwitch 6000
- Nortel/Bay: Accelar 1000 and 8000

Distribution Part Numbers and Ordering Information

Catalyst 5000 Family Switch Families[1]

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 Supervisor Engine II Modules

WS-X5506=	Catalyst 5000 Family Supervisor Engine II - 2-port, 100BASE-FX (multimode fiber)
WS-X5509=	Catalyst 5000 Family Supervisor Engine II - 2-port, (100BASE-TX & 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-X5530-E3A=	Supervisor Engine III with NFFC II-A - modular uplink slot
WS-F5531A=	Netflow Feature Card NFFC II-A (spare)
WS-U5533-FEFX-MMF=	2-port 100BASE-FX (multimode fiber) Module (for Sup Eng III)
WS-U5534-GESX=	2-port 1000BASE-SX (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 100BASE-FX (single mode fiber) Module (for Sup Eng III)
WS-U5537-FETX=	4-port 10/100BASE-TX Module (for Sup Eng III)
WS-X5550=	Catalyst 5000 Family Sup Eng III G, with GBIC uplinks
WS-U5532-GBIC=	Dual Port GBIC uplink w/ QoS for Supervisor III & IIG

Catalyst 5000 Family Modules

WS-X5011=	C5000 Ethernet Switching Module (10BASE-FL, 12 port) (spare)
WS-X5012A=	48-port 10BASE-T Switching Module (RJ-21)
WS-X5014=	48-port 10BASE-T Module (RJ-45,spare)
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, RJ-45)
WS-X5104=	1-port FDDI Switching Module (SMF, ST)
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-X5201R=	12-port 100BASE-FX Backbone Switching Module (SC, MMF)
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 100FX Switching Module (FEC,WRED,802.1Q/ISL,MT-RJ)
WS-X5237-FX-MT=	24-port 100FX SMF MT-RJ Switching Module (FEC, 802.1Q/ISL, WRED)
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)
MEM-C5K-128M-UPGD=	Catalyst 5000 128 MB upgrade for RSFC
MEM-C5K-NAM-UPGD=	C5000/5500 Network Analysis Module 128 MB DRAM upgrade

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 5000 Family Memory

MEM-C5K-SUP3-UPGD=	C5000 Supervisor Engine III 64 MB DRAM upgrade kit (spare)

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)

Cisco Catalyst 5000 Family

FL-C5K-EFS-5X-UG	Catalyst 5000 Rel. 5.x Software License (Enhanced Feature Set, Upgrade)
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
SC5RSFCA-12.0.3W=	Cisco Catalyst 5000 RSFC IOS Enterprise
SC5RSFCB-12.0.3W=	Cisco Catalyst 5000 RSFC IOS Desktop
SWC5K-SUP-5.1.1=	Catalyst 5K Supervisor 2, Flash Image, Release 5.1(1)
FLC5-B-AV=	Cisco IOS Catalyst 5000 RSM IP/IPX/AT/DEC to Enterprise VIP
FLC5-C-AV=	Cisco IOS Catalyst 5000 RSM IP to Enterprise VIP
FLC5-C-BV=	Cisco IOS Catalyst 5000 RSM IP to IP/IPX/AT/DEC/VIP
FLC5-L=	Cisco IOS Catalyst 5000 RSM Series IPSEC 56 Upgrade
FR-IRC5=	Catalyst 5000 RSM InterDomain Routing License (spare)
FRC5-WPP=	Cisco IOS Catalyst 5000 RSM WAN Packet Protocols License
FRC5-NAT=	Cisco IOS Catalyst 5000 RSM NAT License
FRC5-MPOA-MPS=	Cat5500 RSM MPOA Server Feature License Set
WS-C5509-EMS-LIC	Catalyst 5509 RMON Agent License
FL-C5K-IPX=	Catalyst 5000 IPX Feature Set (spare)

Catalyst 5000 Family RSM

CD5-C-12.0T=	Cisco IOS Catalyst 5000 RSM IOS IP Feature Pack
CD5-CL-12.0T=	Cisco IOS Catalyst 5000 RSM IOS IP IPSEC 56 Feature Pack
CD5-CK-12.0T=	Cisco IOS Catalyst 5000 RSM IOS IP 40 Feature Pack
CD5-B-11.2P=	Cisco IOS Catalyst 5000 RSM IOS IP/IPX/AT/DEC Feature Pack
CD5-BS-12.0T=	Cisco IOS Catalyst 5000 RSM IOS IP/IPX/AT/DEC /IBM Feature Pack
CD5-BSL-12.0T=	Cisco IOS Catalyst 5000 RSM IOS IP/IPX/AT/DEC /IBM IPSEC 56 Feature Pack
CD5-BSK-12.0T=	Cisco IOS Catalyst 5000 RSM IOS IP/IPX/AT/DEC /IBM 40 Feature Pack
CD5-A-12.0T=	Cisco IOS Catalyst 5000 RSM IOS Enterprise Feature Pack
CD5-AL-12.0T=	Cisco IOS Catalyst 5000 RSM IOS Enterprise IPSEC 56 Feature Pack
CD5-AK-12.0T=	Cisco IOS Catalyst 5000 RSM IOS Enterprise 40 Feature Pack
MEM-RSM-FLC20M=	Catalyst 5000 RSM Flash Credit Card: 20MB (spare)
MEM-RSM-64M=	Catalyst 5000 RSM 64 MB DRAM (spare)
MEM-RSM-128M=	Catalyst 5000 RSM 128 MB DRAM (spare)

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-C5518=	Catalyst 5509, AC Power Supply (Spare)
WS-C5598=	Catalyst 5509, DC Power Supply (Spare)
WS-C5509-FAN=	Catalyst 5509, Fan Tray (Spare)
WS-C5068B=	Catalyst 5000/5505, DC Power Supply

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.)

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—consisting of the Catalyst 6500 Series and the Catalyst 6000 Series—delivers a new family of high-performance, multilayer switching solutions for both enterprise and service provider networks. Designed to address the increased requirements for gigabit density, data and voice integration, LAN/WAN/MAN convergence, scalability, high availability, and intelligent multilayer switching in backbone/distribution, server-aggregation, and service provider environments, the Catalyst 6000 Family complements the Catalyst 4000 and 5000 Families and Cisco 8500 Series switches, which continue to provide premier wiring closet and network-core solutions, respectively. Together, the Catalyst Family delivers a wide range of intelligent switching solutions, enabling corporate intranets, extranets, and the internet for multimedia, mission-critical data, and voice applications.

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 6500 Series	• A highly scalable platform that meets requirements for a dynamic environment including very high multilayer switching performance with high Fast Ethernet and Gigabit Ethernet port densities
Catalyst 6000 Series	• A cost-effective entry into the robust performance, high port density, and intelligent services of the Catalyst 6000 Family
Catalyst 6000 Family Solutions	• Enterprise campus distribution and core—with industry-leading port densities, performance, and high availability solutions to keep intranets humming
	• Enterprise Server Farm—for Gigabit wire-speed access to mission-critical server farms
	• High-capacity wiring closets—in very large deployments, the Catalyst 6000 family delivers advanced Layer 2, 3, and 4 switching in wiring closets
	• WAN/LAN/MAN integration—a single integrated platform simplifies network design, decreases rack space requirements, and decreases overall administration costs
	• Service Provider Networks—for all dynamic environments including e-commerce, web hosting, and co-location facilities

Key Features

- Application-aware networking with multilayer switching intelligence and support for CiscoAssure policy networking

- High-availability features deliver maximum uptime for mission-critical application support

- Extensive Quality of Service (QOS) features to support mission-critical applications

- 15 Mpps (Catalyst 6000 Series) or scalable performance to 100+ Mpps (Catalyst 6500 Series)

- Maximum 10/100 Ethernet port density: 240 (6-slot chassis) and 384 (9-slot chassis)

- Maximum Gigabit Ethernet port density: 82 (6-slot chassis) and 130 (9-slot chassis)

Specifications

Feature	Catalyst 6006	Catalyst 6009	Catalyst 6506	Catalyst 6509
Modular Slots	6	9	6	9
Available Modules	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 16-port 1000BASE-T Gigabit Ethernet 24-port 10BASE-FL (MT-RJ) Network Analysis Module Flex Wan Module 24 port FXS Analog Station Interface Module 8 port Voice T1 and Services Module 8 port Voice E1 and Services Module Voice Power Feature Card Intrusion Detection Module	Same as Catalyst 6006	Same as Catalyst 6006 plus: Switch Fabric Module Fabric Enabled Line Cards	Same as Catalyst 6506
Backplane	32 Gbps	32 Gbps	Scalable to 256 Gbps	Scalable to 256 Gbps
Stackable	No	No	No	No
Multilayer Performance	15 Mpps	15 Mpps	Scalable to 100+ Mpps	Scalable to 100+ Mpps
VLAN Maximum	4000	4000	4000	4000
FEC/GEC	Up to 8 noncontiguous ports; supports multimodule channeling	Same as Catalyst 6006	Same as Catalyst 6006	Same as Catalyst 6006
Management Capabilities	CiscoWorks 2000, RMON, Enhanced Switched Port Analyzer (ESPAN), SNMP, Telnet, BOOTP, and Trivial File Transfer Protocol (TFTP)	Same as Catalyst 6006	Same as Catalyst 6006	Same as Catalyst 6006
Dimensions (HxWxD)	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.
Service Category	16	17	16	17

Competitive Products

- Extreme: Black Diamond
- Foundry: Big Iron
- Lucent: Cajun Switch 550
- Nortel: Passport 8600

Distribution Part Numbers and Ordering Information

Catalyst 6000 Family Chassis[1]

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-C6009-2500AC=	Catalyst 6009 Chassis w/ 2500W 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
WS-C6509-2500AC=	Catalyst 6509 Chassis w/ 2500W AC Power Supply

Catalyst 6000 Family Supervisor Engines

WS-X6K-S1A-MSFC2=	Catalyst 6000 Supervisor Engine1-A, 2GE, plus MSFC-2 & PFC
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-S2-PFC2=	Catalyst 6500 Supervisor Engine-2, 2GE, plus PFC-2
WS-X6K-S2-MSFC2=	Catalyst 6500 Supervisor Engine-2, 2GE, plus MSFC-2 & PFC-2

Catalyst 6000 Family Modules

WS-X6348-RJ-45=	Catalyst 6000 48-port 10/100, Enhanced QoS, RJ-45
WS-X6348-RJ-45V=	Catalyst 6000 48-port 10/100, Inline Power, RJ-45
WS-X6248A-TEL=	Catalyst 6000 48-port 10/100, Enhanced QoS, Telco
WS-X6408A-GBIC=	Catalyst 6000 8-port GE, Enhanced QoS (Req. GBICs)
WS-X6416-GBIC=	Catalyst 6000 16-port Gig-Ethernet Mod. (Req. GBICs)
WS-X6516-GBIC=	Catalyst 6500 16-port GigE Mod: fabric-enabled (Req. GBICs)
WS-X6182-2PA=	Catalyst 6000 Flex WAN Module (Supports 2 Port Adapters)
WS-X6416-GE-MT=	Catalyst 6000, 16-port Gigabit Ethernet Module, MT-RJ
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
WS-X6024-10FL-MT=	Catalyst 6000 24-port 10BASE-FL MT-RJ Module
WS-X6324-100FX-MM=	Catalyst 6000 24-port 100FX, Enh QoS, MT-RJ, MMF
WS-X6316-GE-TX=	Catalyst 6000 16-port 1000TX GE Module, RJ-45
WS-X6380-NAM=	Catalyst 6000 Network Analysis Module
WS-F6K-VPWR=	Catalyst 6000 Voice Power Feature Card for WS-X6348-RJ-45
WS-F6K-MSFC2=	Catalyst 6000 Multilayer Switch Feature Card (MSFC)II, Spare
WS-X6624-FXS=	Catalyst 6000 24-port FXS Analog Station Interface Module
WS-X6608-T1=	Catalyst 6000 8-port Voice T1 and Services Module
WS-X6608-E1=	Catalyst 6000 8-port Voice E1 and Services Module
WS-X6381-IDS=	Catalyst 6000 Intrusion Detection Module
WS-X6816-GBIC=	Catalyst 6500 16-port GE w/ Local Switching, spare (Fabric Enabled)
WS-F6K-DFC=	Catalyst 6500 Distributed Forwarding Card (DFC)
WS-C6500-SFM=	Catalyst 6500 Switch Fabric Module

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-CAC-2500W=	Catalyst 6000 2500W AC Power Supply
WS-C6X09-RACK=	Catalyst 6x00 Rack Mount Kit and Cable Organizer
WS-C6K-6SLOT-FAN=	Catalyst 6000, Fan Tray 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

SC6MSFCA-12102E=	Catalyst 6000 MSFC IOS Enterprise
SC6MSFCAV-12102E=	Catalyst 6000 MSFC IOS Enterprise w/VIP
SC6MSFCB-12102E=	Catalyst 6000 MSFC IOS Desktop
SC6MSFCBP-12102E=	Catalyst 6000 MSFC IOS IP/IPX
SC6MSFCBV-12102E=	Catalyst 6000 MSFC IOS w/VIP Flash Image - Desktop
SC6MSFCC-12102E=	Catalyst 6000 MSFC IOS IP
SC6MSFCCV-12102E=	Catalyst 6000 MSFC IOS w/VIP Flash Image - IP
SC6MSFCDV-12102E=	Catalyst 6000 MSFC IOS w/VIP Flash Image - IP/IPX
WS-C6X06-EMS-LIC	Catalyst 6x06 RMON Agent License
WS-C6X09-EMS-LIC	Catalyst 6x09 RMON Agent License
FRC6-MSM-IPX=	Catalyst 6000 MSM IPX Feature Set License, Spare
FR-IRC6=	Catalyst 6000 Family InterDomain Routing Feature License
S6MSFC2A-12102E=	Catalyst 6000 MSFC2 IOS Enterprise
S6MSFC2AV-12102E=	Catalyst 6000 MSFC2 IOS Enterprise w/VIP
S6MSFC2B-12102E=	Catalyst 6000 MSFC2 IOS Desktop
S6MSFC2BP-12102E=	Catalyst 6000 MSFC2 IOS IP/IPX
S6MSFC2BV-12102E=	Catalyst 6000 MSFC2 IOS Desktop w/VIP
S6MSFC2C-12102E=	Catalyst 6000 MSFC2 IOS IP
S6MSFC2CV-12102E=	Catalyst 6000 MSFC2 IOS IP w/VIP
S6MSFC2DV-12102E=	Catalyst 6000 MSFC2 IOS IP/IPX - w/VIP
SC6K-SUP2-6.1.1	Catalyst 6000 Supervisor 2 Flash Image, Rel 6.1(1)
SC6K-SUP2CV-6.1.1	Cat6K Supervisor 2 Flash Image w/CiscoView, Rel 6.1(1)
SC6K-SUP2K9-6.1.1	Catalyst 6000 Supervisor 2 Flash Image w/SSH, Rel 6.1(1)

Cisco Catalyst 6000 Family

SC6K-S2K9CV-6.1.1	Cat6K Sup 2 Flash Image w/CiscoView & w/SSH, Rel 6.1(1)
S6SUP22A-12105E	Catalyst 6000 Sup2/MSFC IOS Enterprise
S6SUP22B-12105E	Catalyst 6000 Sup2/MSFC IOS Desktop
S6SUP22C-12105E	Catalyst 6000 Sup2/MSFC IOS IP
S6SUP22D-12105E	Catalyst 6000 Sup2/MSFC IOS IP/IPX
SWC6K-SUP-5.3.1=	Catalyst 6000 Supervisor Flash Image, Release 5.3(1a)
SC6K-SUP-5.4.4=	Catalyst 6000 Supervisor Flash Image, Release 5.4(4)

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, 24 MB Spare
MEM-MSFC-128MB=	Catalyst 6000 MSFC Mem, 128 MB DRAM Option
MEM-C6K-WAN-128M=	Catalyst 6000 WAN Module Memory, 128 MB
MEM-MSFC2-256MB=	MSFC2 256MB Memory Option
MEM-MSFC2-512MB=	MSFC2 Memory Option 512 MB
MEM-DFC-256MB=	Catalyst 6500 256 MB spare for DFC
MEM-DFC-512MB=	Catalyst 6500 512 MB option for DFC

Catalyst 6000 Family Basic Maintenance

CON-SNT-PKG16	Catalyst 6006 and 6506, SMARTnet Maintenance
CON-SNT-PKG17	Catalyst 6009 and 6509, 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 6000 Family Web site: http://www.cisco.com/go/6000

Cisco Catalyst 8500 Multiservice Switch Routers

The Catalyst 8500 family multiservice switch routers integrate multiservice ATM switching with wire-speed multiprotocol routing for Gigabit Ethernet and Fast Ethernet into a single platform that also supports advanced Cisco IOS services for QoS and security. The Catalyst 8500 family delivers enterprise MAN/WAN and Service Provider MPLS/MNS solutions with scalable performance, lower cost of ownership, 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

When to Sell

Sell This Product	When a Customer Needs These Features
Catalyst 8540/8510	• Integrated GE/FE and ATM • Flexible range of ATM interfaces (T1/E1, IMA, DS3/E3, OC-3, OC-12, and OC-48) • Wire-speed performance • Multiservice MAN/WAN applications • Managed Network Services • Voice, Data, and Video solutions • MPLS VPN • Voice over AAL2

Key Features

- Ideal for integrated multiservice ATM switching with wire-speed multiprotocol routing for gigabit Ethernet (L3eATM, Layer 3 enabled ATM)

- 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 up to 24 million packets per second (pps) for non-blocking, wirespeed Layer 3 switching

Specifications

Feature	Catalyst 8510	Catalyst 8540
Modular Slots	5	13
Available Modules	1-port Gigabit Ethernet 8-port 100FX Ethernet 8-port 10/100TX Ethernet (RJ45) ATM Router Module 1-port OC-12 (SM/MM) PAM (Port Adaptor Modules) 4-port OC-3 (SM/MM) PAM 4-port E1 PAM 4-port T1 PAM 4-port Channelized DS3 FR PAM 8-port T1 IMA PAM 8-port E1 IMA PAM	2-port Gigabit Ethernet 16-port 100FX Ethernet 16-port 10/100TX Ethernet (RJ45) 1-port POS OC-12 uplink 1-port ATM OC-12 uplink 1-port ATM OC-3 uplink Network Clock Module ATM Router Module 2-port OC-48 (SM/MM) ATM 4-port OC-12 (SM/MM) ATM 16-port OC-3 (MM) ATM 4-port E1 PAM (Port Adaptor Modules) 4-port T1 PAM 4-port Channelized DS3 FR PAM 8-port T1 IMA PAM 8-port E1 IMA PAM
Backplane	10 Gbps	40 Gbps
Throughput Performance	6 Mpps	24 Mpps
Layer 3 ATM	Yes	Yes
MAN / WAN	POS / ATM Uplink	POS / ATM Uplink
Dimensions (HxWxD)	10.5 x 17.2 x 18.14 in.	25.25 x 17.3 x 18.25 in.

Competitive Products

- 3Com: Corebuilder 9000 and 3500
- Extreme: Black Diamond 6808 and 6818
- Foundry: Big Iron

Distribution Part Numbers and Ordering Information

Catalyst 8540 – Common Equipment[1]

C8540MSR-SKIT-AC	C8540 MSR Starter Kit w/ Stratum 4 Clock Module - AC Power
C8540MSR-SKIT-DC	C8540 MSR Starter Kit w/ Stratum 4 Clock Module - DC Power
C8545MSR-MRP4CLK=	C8540 MSR Multiservice Route Processor (spare)
C8545MSR-MRP3CLK=	C8540 MSR Route Processor Stratum 3 (spare)
C8546MSR-MSP-FCL=	C8540 MSR Switch Processor with ATM FC (spare)
C8540CSR-SKIT-AC	Catalyst 8540 CSR Starter Kit with AC Power
C8540CSR-SKIT-DC	Catalyst 8540 CSR Starter Kit with DC Power
C8541CSR-RP=	Catalyst 8540 CSR Route Processor (spare)
C8542CSR-SP=	Catalyst 8540 CSR Switch Processor (spare)
C8540-CHAS13=	Catalyst 8540 - Chassis (spare)
C8540-PWR-AC=	C8540 Power Supply - AC (spare)
C8540-PWR-DC=	C8540 Power Supply - DC (spare)

Catalyst 8510 – Common Equipment

C8510MSR-SKIT-AC	Catalyst 8510 MSR Starter Kit with AC Power
C8510MSR-SKIT-DC	Catalyst 8510 MSR Starter Kit with DC Power
C8515-MSRP=	C8510 Multiservice Switch Route Processor (spare)
C8510CSR-SKIT-AC	Catalyst 8510 CSR Starter Kit with AC Power
C8510CSR-SKIT-DC	Catalyst 8510 CSR Starter Kit with DC Power
C8510-SRP=	C8510 Layer 3 Switch Route Processor (spare)
C8510-CHAS5=	Catalyst 8510 - Chassis (spare)
C8510-PWR-AC=	C8510 power supply, AC (spare)
C8510-PWR-DC=	C8510 power supply, DC (spare)

Catalyst 8500 Family – ATM Router Module Equipment

C8540-ARM-64K=	C8540 ATM Router Module 64K (spare)
C8510-ARM-64K=	C8510 ATM Router Module 64K (spare)

Catalyst 8500 - Layer 3 Interface Modules

C85EGE-2X-16K=	C8540 2-port Enhanced GE 16K (spare)
C85EGE-2X-64K=	C8540 2-port Enhanced GE 64K (spare)
C85EGE-2X-256K=	C8540 2-port Enhanced GE 256K (spare)
C85FE-16T-16K=	C8540 16-port 10/100 RJ-45 16K (spare)
C85FE-16T-64K=	C8540 16-port 10/100 RJ-45 64K (spare)
C85FE-16TACL-16K=	C8540 16-port 10/100 RJ-45 w/ACL 16K (spare)
C85FE-16TACL-64K=	C8540 16-port 10/100 RJ-45 w/ ACL 64K (spare)
C85FE-16F-16K=	C8540 16-port 100-FX MT-RJ 16K (spare)
C85FE-16F-64K=	C8540 16-port 100-FX MT-RJ 64K (spare)
C85FE-16FACL-16K=	C8540 16-port 100-FX MT-RJ w/ACL 16K (spare)
C85FE-16FACL-64K=	C8540 16-port 100 MT-RJ w/ACL 64K (spare)
C8540-ACL=	C8540 ACL Daughter Card (spare)
C85GE-1X-16K=	C8510/LS1010 1-port Gigabit Ethernet 16K (spare)
C85GE-1X-64K=	C8510/LS1010 1-port Gigabit Ethernet 64K (spare)
C85FE-8T-16K=	C8510/LS1010 8-port 10/100 RJ-45 16K (spare)
C85FE-8T-64K=	C8510/LS1010 8-port 10/100 RJ-45 64K (spare)
C85FE-8F-16K=	C8510/LS1010 8-port 100-FX MT-RJ 16K (spare)
C85FE-8F-64K=	C8510/LS1010 8-port 100-FX MT-RJ 64K (spare)
C8510-ACL=	C8510/LS1010 ACL Daughter Card (spare)

Catalyst 8540 - ATM Interface Modules and Uplinks

C85MS-2F-OC48LR=	C8540 2-port OC-48c/STM-16 SMF-LR (spare)
C85MS-2F-OC48SS=	C8540 2-port OC-48c/STM-16 SMF-IR (spare)
C85MS-1F4S-OC48LR=	C8540 1-port OC-48c/STM-16 SMF-LR+4-port OC-12 SMF (spare)
C85MS-1F4S-OC48SS=	C8540 1-port OC-48c/STM-16 SMF-IR+4-port OC-12 SMF (spare)
C85MS-1F4M-OC48SS=	C8540 1-port OC-48c/STM-16 SMF-IR+4-port OC-12 MMF (spare)
C85MS-4F-OC12SS=	C8540 4-port OC-12c/STM-4 SMF (spare)
C85MS-4F-OC12MM=	C8540 4-port OC-12c/STM-4 MMF (spare)
C85MS-16F-OC3MM=	C8540 16-port OC-3c/STM-1 MMF (spare)
C85-POSOC12I-64K=	C8540 1-port POS OC-12c/STM-4 SMF-IR Uplink and 1-port Enhanced Gigabit Ethernet 64K (spare)
C85-POSOC12I-256K=	C8540 1-port POS OC-12c/STM-4 SMF-IR Uplink and 1-port Enhanced Gigabit Ethernet 256k (spare)
C85-POSOC12L-64K=	C8540 1-port POS OC-12c/STM-4 SMF-LR Uplink and 1-port Enhanced Gigabit Ethernet 64k (spare)
C85-POSOC12L-256K=	C8540 1-port POS OC-12c/STM-4 SMF-LR Uplink and 1-port Enhanced Gigabit Ethernet 256k (spare)
C85-1OC3MGE-64K=	C8540 1port OC-3c/STM-1 MMF ATM Uplink and 1-port Enh. Gig Ethernet 64K (CSR Only) (spare)
C85-1OC3SGE-64K=	C8540 1port OC-3c/STM-1 SMF-IR ATM Uplink and 1-port Enh. Gig Ethernet 64K (CSR Only) (spare)
C85-1OC12MGE-64K=	C8540 1port OC-12c/STM-1 MMF ATM Uplink and 1-port Enh. Gig Ethernet 64K (CSR Only) (spare)
C85-1OC12MGE-256K=	C8540 1port OC-12c/STM-1 MMF ATM Uplink and 1-port Enh. Gig Ethernet 256K (CSR Only) (spare)
C85-1OC12SGE-64K=	C8540 1port OC-12c/STM-1 SMF-IR ATM Uplink and 1-port Enh. Gig Ethernet 64K (CSR Only) (spare)
C85-1OC12SGE-256K=	C8540 1port OC-12c/STM-1 SMF-IR ATM Uplink and 1-port Enh. Gig Ethernet 256K (CSR Only) (spare)

Catalyst 8500 - Port Adapter Modules

Carrier Modules

C85MS-SCAM-2P=	C8540 SuperCAM for Port Adapter Modules (spare)
WATM-CAM-2P=	C8510 / LS1010 Carrier Modules (spare)

Voice

WAI-T1C-4RJ48=	4 Port T1 (circuit emulation) RJ-48 PAM (spare)
WAI-E1C-4BNC=	4 Port E1 (circuit emulation) BNC PAM (spare)
WAI-E1C-4RJ48=	4 Port E1 (circuit emulation) RJ-48 PAM (spare)

Frame Relay

C85MS-1DS3-FRBNC=	C8500 1-port Channelized DS3 Frame-relay PAM (spare)
C85MS-4E1-FRRJ48=	C8500 4-port E1 Frame-Relay/FUNI PAM (spare)

ATM Interface Modules

WAI-OC3-4U5=	4 Port STS-3c/STM-1 UTP-5 PAM (spare)
WAI-OC3-4MM=	4 Port OC-3c/STM-1 MMF PAM (spare)
WAI-OC3-4SS=	4 Port OC-3c/STM-1 SMF-IR PAM (spare)
WAI-OC3-1S3M=	OC-3c/STM-1 Mix PAM, 1-port SMF-IR + 3-port MMF (spare)
WAI-OC3-4SSLR=	4-port OC-3c/STM-1 SMF-LR PAM (spare)
WAI-OC12-1MM=	1 Port OC-12c/STM-4c MMF PAM (spare)
WAI-OC12-1SS=	1 Port OC-12c/STM-4c SMF-IR PAM (spare)
WAI-OC12-1SSLR=	1 Port OC-12c/STM-4c SMF-LR PAM (spare)
WAI-T3-4BNC=	4 Port DS-3 PAM (spare)

Cisco Catalyst 8500 Multiservice Switch Routers

WAI-E3-4BNC=	4 Port E3 BNC PAM (spare)
C85MS-8T1-IMA=	C8500MSR/LS1010 8-port TI IMA PAM (spare)
C85MS-8E1-IMA-120=	C8500MSR/LS1010 8-port E1 120 ohm IMA PAM (spare)
WAI-T1-4RJ48=	4 Port T1 (ATM) RJ-48 PAM (spare)
WAI-E1-4BNC=	4 Port E1 (ATM) BNC PAM (spare)
WAI-E1-4RJ48=	4 Port E1 (ATM) RJ-48 PAM (spare)

Catalyst 8500 Family Software

S854R3-12.0.10W=	C8540 Layer 3 feature set (spare)
S854R2-12.0.10W=	C8540 integrated layer 3 and ATM feature set (spare)
S851R3-12.0.10W=	C8510 Layer 3 feature set (spare)
S851R2-12.0.10W=	C8510 integrated layer 3 and ATM feature set (spare)

Catalyst 8500 - Flash and DRAM Memory Options

MEM-8540M-FLC20M=	8540MSR 20MB PC Flash Memory Card w/ default SW (spare)
MEM-ASP-FLC16M=	C8500/LS1010 PCMCIA Flash Memory Card 16 MB (spare)
MEM-ASP-FLC20M=	C8500/LS1010 PCMCIA Flash Memory Card 20 MB (spare)
MEM-ASP-32M=	Catalyst 8500/LightStream 1010 32 MB DRAM (spare)
MEM-ASP-64M=	Catalyst 8500/LightStream 1010 64MB DRAM (spare)

Catalyst 85oo Software Feature License Options

FR-8510-HPNNI=	C8510 hierarchical PNNI upgrade license (spare)
FR-8510-TAGSW=	C8510 Tag Switching upgrade license (spare)
FR-8510-THPNNI=	C8510 HPNNI + Tag Switching upgrade license (spare)
FR-8540MSR-HPNNI=	Cat 8540MSR - Hierarchical PNNI License (spare)
FR-8540MSR-TAGSW=	Cat 8540MSR - Tag Switching License (spare)
FR-8540MSR-THPNNI=	Cat 8540MSR - Hierarchical PNNI + Tag Switching

Catalyst 8500 Accessories

CAB-MTRJ-SC-MM-1M=	MT-RJ MM to SC duplex MMF - 1 meter (spare)
CAB-MTRJ-SC-MM-3M=	MT-RJ MM to SC duplex MMF - 3 meter (spare)
CAB-MTRJ-SC-MM-5M=	MT-RJ MM to SC duplex MMF - 5 meter (spare)
CAB-MTRJ-ST-MM-1M=	MT-RJ MM to ST duplex MMF - 1 meter (spare)
CAB-MTRJ-ST-MM-3M=	MT-RJ MM to ST duplex MMF - 3 meter (spare)
CAB-MTRJ-ST-MM-5M=	MT-RJ MM to ST duplex MMF - 5 meter (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 8500 series Web site: www.cisco.com/go/8500

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 10BASE-T/100BASE-TX 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco 1538	• 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

Key Features

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

Competitive Products

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

Distribution Part Numbers and Ordering Information

Cisco 1538 Micro Hubs[1]

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.

When to Sell

Sell This Product	When a Customer Needs These Features
FastHub 412 or FastHub 424 10/100	• 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 10BASE-T/100BASE-TX ports • Option for long-distance connectivity to the network core or between repeaters with a switched uplink module
FastHub 412M or FastHub 424M 10/100	• 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

Key Features

• 12 or 24 10BASE-T/100BASE-TX 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 options

• Cost-effective and powerful management options, with an embedded Web-base
management interface (FastHub 412M and FastHub 424M)

• 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
Fixed Ports (connections)	12-port autosensing 10/100	12-port autosensing 10/100	24-port autosensing 10/100	24-port autosensing 10/100
Modular Slots	1	1	1	1
Modules Available	1-port 10/100BASE-TX 1-port 100BASE-FX	1-port 10/100BASE-TX 1-port 100BASE-FX	1-port 10/100BASE-TX 1-port 100BASE-FX	1-port 10/100BASE-TX 1-port 100BASE-FX
Stackable	Yes, up to 4 units	Yes, up to 4 units	Yes, up to 4 units	Yes, up to 4 units
Management Capabilities	Manageable by a FastHub 412M or 424M LEDs for power, port status, bandwidth utilization, collision detection, and speed indication	Web-based management, SNMP, Telnet, 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
Dimensions (HxWxD)	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.
Service Category	2	2	2	2

Competitive Products

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

Distribution Part Numbers and Ordering Information

FastHub 400 10/100 Series[1]

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-PKG2	FastHub SMARTnet Maintenance for FastHub 400 10/100 Series Repeaters

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 Web site: http://www.cisco.com/go/fh400

Additional Products

See the Catalyst 2820 Web site: http://www.cisco.com/go/2820

Security Products

Security Products at a Glance

Product	Features	Page
Cisco Secure PIX™ Firewall	High performance stateful inspection firewalling • Secure integrated appliance • Reliable hot-standby failover • Standards-based VPN	4-2
Cisco IOS Firewall Feature Set	Value-added option that provides advanced firewall-specific capabilities • Stateful packet filtering via context-based access control (CBAC) • Intrusion detection for real-time response to network attacks • Dynamic, network-to network, per-user authentication and authorization via TACACS+ and RADIUS	4-4
Cisco Secure Scanner (formerly NetSonar)	Proactive network security analysis system • Comprehensive security assessment and reporting tool • Robust network inventory and mapping system • Measure security, manage risks, eliminate security vulnerabilities	4-6
Cisco Secure Policy Manager (formerly Cisco Security Manager)	Policy-based security management system for Cisco PIX Firewalls • Innovative approach to security management • Manages multiple firewalls from a central location • Part of CiscoAssure Policy Networking	4-8
Cisco Secure Intrusion Detection System (formerly NetRanger)	Real-time intrusion detection system • Real-time blocking of unauthorized activity • Transparent to legitimate traffic • Support for a range of speeds and interface types • Highly scalable	4-10
Cisco Secure Access Control Server	High-performance user access control framework • Full RADIUS and TACACS+ support • Supports LDAP user authentication • Data replication and backup services • Flexible user and group policy controls	4-12

Cisco Secure PIX Firewall

Cisco's world-leading PIX Firewall family spans the entire user application spectrum, from cost-conscious desktop firewalls for remote offices to carrier-class Gigabit Ethernet firewalls for large enterprise and service provider applications. The PIX firewall line provides today's networking customers with unmatched security, reliability, and performance.

When to Sell

Sell This Product	When a Customer Needs These Features
PIX 506	• Remote Office Branch Office (ROBO) desktop firewall appliance • Low entry price • Maximum of 2 10BASE-T interfaces
PIX 515	• Small Medium Business (SMB) firewall appliance • 3 to 6 10/100 FE interfaces
PIX 525	• Enterprise firewall appliance • Gigabit Ethernet support • Up to 8 10/100 FE or Gigabit Ethernet interfaces
PIX 535	• Carrier class large enterprise and service provider (SP) firewall appliance • Gigabit Ethernet throughput • Up to 10 10/100 FE or Gigabit Ethernet interfaces • Redundant, hot-swappable power supplies

Key Features

- Security—Purpose-built firewall appliance with a proprietary, hardened operating system that eliminates security holes
- Performance—Stateful connection-oriented firewall that is capable of 500,000 concurrent connections and 1Gbps of throughput
- Reliability—High availability support via a redundant hot standby unit that maintains concurrent connections through automatic stateful synchronization
- Virtual Private Network (VPN)— Provides high-performance, tunneling and encryption services suitable for site-to-site and remote access applications
- Network Address Translation—Conceals internal IP addresses and expands network address space
- Denial-of-Service (DoS) Protection—Protects the firewall, as well as internal servers and clients, from disruptive hacking attempts
- Lowest Cost of Ownership—Simple installation and configuration for minimal time investment combined with impressive price/performance offering

Specifications

Feature	PIX 506	PIX 515	PIX 525	PIX 535
Processor	200 MHz	200 MHz	350 MHz	1.0 GHz
RAM	32 MB	32 or 64 MB	128 or 256 MB	512 MB or 1 GB
Flash Memory	8 MB	16 MB	16 MB	16 MB
PCI Slots	None	2	3	9
Fixed Interfaces	2-10BASE-T Ethernet	2-10/100 Fast Ethernet	2-10/100 Fast Ethernet	None
Maximum Interfaces	2-10BASE-T Ethernet	6-10/100 Fast Ethernet	8-10/100 Fast Ethernet or Gigabit Ethernet	10-10/100 Fast Ethernet or Gigabit Ethernet
VPN Accelerator Card (VAC) Support	No	Yes	Yes	Yes
Failover Support	No	Yes UR only	Yes UR only	Yes UR only
Size	Desktop	1 RU	2 RU	3 RU

Competitive Products

- Check Point Software Technologies: FireWall-1
- NetScreen Technologies: NetScreen Security Appliances
- WatchGuard Technologies: Firebox

Distribution Part Numbers and Ordering Information

PIX Bundles[1]

PIX-535-UR-BUN	PIX 535 Unrestricted Bundle (Chassis, unrestricted license, two 10/100 ports)
PIX-535-R-BUN	PIX 535 Restricted Bundle (Chassis, restricted license, two 10/100 ports)
PIX-535-FO-BUN	PIX 535 Failover Bundle (Chassis, failover license, two 10/100 ports)
PIX-525-UR-BUN	PIX 525 Unrestricted Bundle (Chassis, unrestricted software, two 10/100 ports)
PIX-525-R-BUN	PIX 525 Restricted Bundle (Chassis, restricted software, two 10/100 ports)
PIX-525-FO-BUN	PIX 525 Failover Bundle (Chassis, failover software, two 10/100 ports)
PIX-515-UR-BUN	PIX 515 Unrestricted Bundle (Chassis, unrestricted software, two 10/100 ports)
PIX-515-R-BUN	PIX 515 Restricted Bundle (Chassis, restricted software, two 10/100 ports)
PIX-515-FO-BUN	PIX 515 Failover Bundle (Chassis, failover software, two 10/100 ports)
PIX-506	PIX 506 (Chassis, software, two 10/100 ports)

PIX Interfaces and Cards

PIX-1GE-66	Single 66-MHz Gigabit Ethernet interface for PIX 53x (multimode fiber, SC connector)
PIX-1GE	Single Gigabit Ethernet Interface for PIX 52x
PIX-4FE	Four-port 10/100 Fast Ethernet interface
PIX-1FE	Single-port 10/100 Fast Ethernet interface
PIX-VPN-ACCEL	IPSec Hardware VPN Accelerator Card (VAC)

PIX VPN Feature Licenses

PIX-VPN-3DES	168-bit 3DES IPSec VPN software license
PIX-506-SW-3DES	168-bit 3DES IPSec VPN software license for PIX 506
PIX-VPN-DES	56-bit DES IPSec VPN software license

PIX Accessories

PIX-535-PWR-AC	Redundant AC power supply for PIX 535
PIX-535-PWR-DC	Redundant DC power supply for PIX 535

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 IOS Firewall Feature Set

The Cisco IOS Firewall Feature Set enriches Cisco IOS Software 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 IOS Firewall provides a complete, integrated virtual private network solution. Cisco IOS Firewall 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco IOS Firewall Feature Set	• For secure extranet and intranet perimeters and Internet connectivity for branch and remote offices • Secure remote access or data transfer via a Cisco IOS Software-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

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 Software-based VPN solution, including IPSec, QoS, and tunnelling for a wide range of Cisco router platforms

Specifications

Feature	Cisco IOS Firewall
Supported Network Interfaces	All network interfaces on supported platforms
Supported Platforms	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
Memory	Varies by platform and image
Simultaneous Sessions	No maximum: dependent on platform, network connection, and traffic

Competitive Products

- Lucent (Ascend): SecureAccess Firewall
- Nokia: IP400 Series
- Nortel: BaySecure Firewall-1

Distribution Part Numbers and Ordering Information

The Cisco IOS Firewall is available as a software image option for the Cisco 800, UBR900 series, 1600, 1720, 2500, 2600, 3600, 7100, 7200, 7500 series routers and for the Route Switch Module (RSM) for Catalyst 5000 series switches. Images available include the following:

Cisco IOS Firewall for 1600 Series Routers[1]

CD16-CH-12.1.1=	IP/Firewall Feature Pack
CD16-BHP-12.1.1=	IP/IPX/Firewall Plus Feature Pack
CD16-QHY-12.1.1=	IP/IPX/AT/IBM/Firewall Plus 56 Feature Pack
CD16-QHL-12.1.1=	IP/IPX/AT/IBM/Firewall Plus IPSec 56 Feature Pack

Cisco IOS Firewall 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 IOS Firewall for 2600 Series Routers

CD26-CH-12.0.7=	Cisco 2600 Series IOS IP/Firewall Feature Pack
CD26-CHL-12.0.7=	Cisco 2600 Series IOS IP/Firewall Plus IPSec 56 Feature Pack
CD26-CHK2-12.0.7=	IP/Firewall Plus IPSec 3DES
CD26-BHP-12.0.7=	Cisco 2600 Series IOS IP/IPX/AT/DEC/Firewall Plus Feature Pack
CD26-AHL-12.0.7=	Cisco 2600 Series IOS Enterprise/Firewall Plus IPSec 56 Feature Pack
CD26-AHK2-12.0.7=	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 IOS Firewall Feature Set site: http://www.cisco.com/go/csis

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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Secure Scanner	• The ability to measure and reduce their security exposure
	• A method to improve network security
	• A process to define and validate security policies

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
Hardware	Pentium II 450 MHz PC CD-ROM drive TCP/IP network interface Screen resolution of 800 x 600 or greater	Sun SPARC 10 Pentium II 450 MHz PC CD-ROM drive TCP/IP network interface Screen resolution of 800 x 600 or greater
Operating System	Windows NT 4.0 Workstation/Server Windows 2000 Professional/ Server Service Pack 5 or later	Solaris 2.6, 2.7, or 2.8 (for SPARC) Solaris 2.6, 2.7, or 2.8 (for Pentium)
Software	Internet Explorer 4.0 or later Netscape Navigator 2.0 or later	Netscape Navigator 2.0 or later
Disk Space	2 GB hard drive	2 GB hard drive
Memory	64 MB (96 MB recommended)	64 MB (96 MB recommended)
User Privileges	Local or domain administrator	Root

Competitive Products

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

Distribution Part Numbers and Ordering Information

Cisco Secure Scanner[1]

NS-201-NT-2500	Scanner 2.0.1 for NT (Up to 2500 Addresses)
NS-201-S-2500	Scanner 2.0.1 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 Policy Manager

Cisco Secure Policy Manager (CSPM) is a scalable, powerful policy-based security management system for Cisco firewalls, IPSec virtual private network (VPN) routers, and Intrusion Detection System (IDS) sensors. CSPM version 2.2 is the latest version of the Cisco security policy management product and does not require an upgrade part number for CSPM 2.0/2.1 users. With CSPM, Cisco customers can define, distribute, enforce, and audit network-wide security policies from a central location. CSPM streamlines the tasks of managing complicated network security elements, such as perimeter access control, IDS, Network Address Translation (NAT) and IPSec-based VPNs. As the management cornerstone of the Cisco end-to-end security product line, CSPM can dramatically simplify firewall, IDS, and VPN deployment in enterprise and service provider networks.

CSPM's simple graphical user interface (GUI) allows administrators to visually define high-level security policies for multiple Cisco firewalls and VPN routers. These policies can be distributed throughout the network from a central location, thus completely eliminating the costly time-consuming practice of manually implementing security configurations on a command-by-command and device-by-device basis. CSPM also provides basic system auditing functions, including real-time alarm notification and a Web-based reporting system.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Secure Policy Manager	• Security administration for multiple PIX firewalls within their corporate network • An easy way to define network security policies based on their business objectives • Security administration for VPNs including site-to-site VPNs • NT-based IDS configuration and monitoring platform • End-to-end security management • Abstract complexity of IOS and PIX CLI

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 500 Cisco PIX firewalls and Cisco routers

- Offers a distributed architecture to support PIX firewalls in Internet, intranet, and extranet environments

- Provides configuration of remote PIX firewalls

- Provides high-level policy configuration for IPSec environments

- Provides an easy mechanism to define and manage Network Address Translation (NAT) policies for Cisco 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

- Provides site-to-site VPN management

- Offers NT-based IDS configuration and monitoring

Specifications

Feature	Recommended Requirements for Cisco Secure Policy Manager
Operating System Support	Policy Manager client: Windows 98 or Windows NT 4.0 with Service Pack 6a Policy server: Windows NT 4.0 with Service Pack 6a
Web Browser Support	Microsoft Internet Explorer v4.01[1] or higher
Processor Speed (type)	400 MHz or faster (Pentium II)
Memory	128 MB RAM or greater
Hard Drive	4 GB free space available (for the application and database)
Video Display	1024 x 768 video adapter card capable of at least 64,000 colors
Devices Supported	PIX firewalls with software v4.2.4 or higher IOS 12.05t or higher

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[1]

SEC-POL-MGR-2.2-UR	Unrestricted CSPM license
SEC-POL-MGR-2.2-R	Restricted (LITE) CSPM license. Supports up to three PIX, IOS or IDS devices

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 Policy Manager Web site: http://www.cisco.com/go/csm

Cisco Secure Intrusion Detection System

Cisco Secure Intrusion Detection System (formerly NetRanger) delivers a family of high-performance, security surveillance solutions for both enterprise and service-provider networks. Designed to address the increased requirements for security visibility, denial-of-service (DoS) protection, antihacking detection, and e-commerce business defenses, Cisco Secure IDS leads the market in innovative security monitoring solutions. Cisco Secure IDS product line consists of sensing devices and a central management console. Sensors, which are high-speed security analysis devices, analyze packets traversing the network to determine if the traffic is authorized or malicious. If the data stream in a network exhibits unauthorized or suspicious activity, sensors can detect the policy violation in real time, terminate the offending session(s), and send alarms back to a central management console. The management console, called the Director, is a high-performance software-based management system that centrally monitors the activity of multiple sensors, provides a visual alarm display, and acts as a remote system configuration utility.

The current Cisco Secure IDS sensing portfolio includes the IDS 4210 Sensor appliance, IDS 4230 Sensor appliance, and Catalyst 6000 Intrusion Detection System Module (IDSM).

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Secure IDS Sensors	• 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 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
	• With the addition of the IDS Module card to its portfolio, Cisco continues to demonstrate investment protection in its switched infrastructure; the IDS Module enables customers to perform both security monitoring and switching functions within the same chassis

Key Features

• Market-leading technology

• Sophisticated attack detection and antihacking protection

• Transparent operation

• Pervasive platform support

• Scalable sensing performance

• Integrated solution with the Catalyst 6000 IDS Module

• Powerful management and monitoring

• Investment protection

• Active response

Specifications

Feature	IDS-4210	IDS-4230	IDS Module
Performance	45 Mbps	100 Mbps	100 Mbps
Processor	Celeron 566 MHz	Dual PIII-600 MHz	Custom Hardware
RAM	256 MB	512 MB	256 MB
Network Interface Card	Autosensing 10/100 BASE-T Ethernet	Autosensing 10/100 BASE-T Ethernet	PCI
Command and Control Interface	Autosensing 10/100 BASE-T Ethernet	Autosensing 10/100 BASE-T Ethernet	PCI

Competitive Products

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

Distribution Part Numbers and Ordering Information

CiscoSecure IDS[1]

IDS-4210	IDS 4210 sensor appliance supports up to 45 Mbps with single 10/100BASE-T Ethernet interface
IDS-4230-FE	IDS 4230 sensor appliance supports up to 100 Mbps with single 10/100BASE-T Ethernet interface
WS-X6381-IDS	Intrusion Detection Module for Catalyst 6000

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.)

Note **Export Considerations:** The CS IDS 4210, CS IDS 4230, and CS IDSM are subject to export controls. Please refer to the export compliance Web site at http://www.cisco.com/wwl/export/crypto/ for guidance. For specific export questions, please contact export@cisco.com.

For More Information

For CiscoSecure IDS, see: http://www.cisco.com/go/ids

CiscoSecure Access Control Server for Windows 2000 and NT

The Internet and the growth of all networks, public, private and extranets, place particular security challenges on how user access to your network is controlled, authorized, and accounted for. To support the growing population of users that connect to your network from all types of devices – VPNs and through firewalls, remote access via Dial, Cable or DSL broadband, Voice-over-IP and wireless solutions - Cisco introduces Cisco Secure Access Control Server for Windows 2000 and NT (ACS2000). Cisco Secure ACS2000 is a highly scalable, high performance Access Control Server that operates as a centralized RADIUS or TACACS+ server system and controls the authentication, authorization, and accounting of users accessing corporate resources through the network.

When to Sell

Sell This Product	When a Customer Needs These Features
CiscoSecure ACS for Windows NT	• Control who can login to the network via RADIUS • Centrally manage user privileges for the network • TACACS+ server for controlling administrative access/config to network

Key Features

- Easy to use, easy to install Web interface

- Extensive backend support for Windows 2000, Active Directory, LDAP, RDBMS, SQL, and ODBC-based interfaces

- Real-time monitoring and reporting services

- Vendor Specific Attribute (VSA) support for Cisco IOS, VPN 3000, and VPN 5000 product lines

- Enforce configurable, per-administrator policies for network configuration and command level authorization

- ACS2000 includes simultaneous TACACS+ and RADIUS support for VPN or dial support at the origin and termination of Internet Protocol Security (IPSec) and point-to-point tunnels (PPTP)

Specifications

Feature	CiscoSecure Access Control Server
Platform	IBM PC or compatible with Windows NT Server 4.0 and Service Pack 4 or later Pentium 350-MHz processor or faster Screen resolution of 256 colors at 800 x 600 lines
RAM	128 MB required
Disk Drive	150 MB of disk space
Software Requirements	NAS must run Cisco IOS Release 11.2 or higher, or a third-party device must be used that can be configured with TACACS+ or RADIUS
Platform Requirements	Cisco IOS Software 11.1 or higher on the NAS
Service Category	7

Competitive Products

• Funk: Steel Belted RADIUS

• Lucent/Avaya: Security Management Server (LSMS)

• Nortel: Preside RADIUS Server (OEM of Funk product)

Distribution Part Numbers and Ordering Information

CiscoSecure ACS[1]

CSNT-2.5	Cisco Secure ACS 2.5 for Windows 2000& NT
CSNT-2.5-UPG	Cisco Secure ACS 2.5 Upgrade from ACS 2.x
CSNT-2.5-P2	Cisco Secure ACS 2.5 for Windows 2000 & NT with 2 server license pack for backup server
CSNT-2.5-EXC	Operating System Exchange--ACS 2.x on UNIX to ACS 2.5
CON-SAS-CSNT	ACS Software Application Support

CiscoSecure SMARTnet Maintenance

CON-SNT-PKG7	CiscoSecure ACS 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

For CiscoSecure ACS, see: http://www.cisco.com/go/ciscosecure

Content Delivery Network Products

Content Delivery Network Products at a Glance

Product[1]	Features	Page
Cisco Content Engine 500 Series	Content services platform for Enterprise and Service Provider networks • Edge node device in a Content Delivery Network (CDN) system • Responsible for delivery of distributed content to the end-user • Offering caching, CDN services, and Employee Internet Management	5-2
Cisco Content Engine 7300 Series	Content services platform for large Service Provider networks • Offer premium hosting services • Caching capabilities to reduce WAN bandwidth and optimize Web site performance • On-demand content delivery and streaming media services	5-4
Cisco Content Distribution Manager 4600 Series	Content networking policy and management device • Central control over delivery of high-bandwidth content, live and video on demand over any IP network • Easy to use management capabilities through a Web-based graphical user interface • Preview and schedule replication of media to edge devices, managing bandwidth and content	5-6
Cisco Content Router 4400	Integrated global load balancing solution • Solves distributed server site selection problems • Uses DNS to redirect a client to the best site on the Internet based on network delay • Transparent redirection to the end user and works with any IP application • Extremely fast site-selection algorithm is optimized for high performance web-style transactions	5-8
Cisco CSS 11000 Series Content Services Switches	High-performance, intelligent platform for Web site and e-commerce optimization • Makes switching decisions based on the content requested, using URLs and cookies • Allows Service Providers and web hosters to deliver new managed services • Delivers advanced Web site security, including DoS protection and firewall load balancing	5-10
LocalDirector	Integrated hardware and software solution for load balancing across servers • Allows many servers to appear as one for high availability and easy scalability • Secure real-time embedded operating system • Scalable to meet needs of largest Web sites	5-12
Cisco DistributedDirector	Global Internet service scaling solution • Enables set of distributed servers to be seen as a single virtual server • Configurable as authoritative Domain Name Services (DNS) caching name server and/or HTTP Session Redirector on a per-domain basis	5-14
Cisco VPN 3000	Remote access Virtual Private Network platform • Has models for all size companies, from small to large enterprise organizations • Reduces communications expenditures • Enables users to easily add capacity and throughput	5-16
Cisco VPN 5000	• Up to 40,000 simultaneous IPSec (DES or 3DES), L2TP or PPP tunnels per platform • Up to 760 Mbps 3DES throughput • Broadest VPN Client platform support in the industry (Windows 95/98/NT/2000, Mac OS, Linux, and Solaris) • Tunnel mapping from IPSec or L2TP LNS into 802.1Q VLANs, IPSec tunnels, Frame Relay PVCs, and GRE tunnels • CLI or GUI management (including a provisioning system for integration with an OSS)	5-19

1. For additional CDN products, see the Cisco Catalyst 4840G on page 3-30 and the Cisco Catalyst 6000 Family on page 3-36.

Cisco Content Engine 500 Series

Cisco Content Engines (CE) are the edge node devices in the Content Delivery Network (CDN) system that are responsible for the delivery of distributed content to the end-user. As content services platforms, Cisco Content Engines offer a number of content services that solve critical problems faced by Service Providers and Enterprises including caching, CDN service, and Employee Internet Management.

Cisco Content Engine 500 Series is designed for Service Providers and Enterprises who are seeking to deliver scalable, high quality content on-demand in an intranet/extranet environment or provide reliable caching to regional offices or branch sites to improve WAN bandwidth usage and Internet access times.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco CE 590	• Accelerates content delivery in Service Provider PoPs and large enterprises
Cisco CE 560	• Increases WAN bandwidth performance at Enterprise regional offices or provides on-demand content delivery with Cisco Content Distribution Manager
Cisco CE 507	• Increases WAN bandwidth performance at Enterprise branch sites or provides on-demand content delivery with Cisco Content Distribution Manager.

Key Features

- Caching:
  - Accelerated content delivery
  - WAN bandwidth cost savings
  - Protection vs. uncontrollable bottlenecks
- CDN for Intranet/Extranet—Use in conjunction with Cisco Content Distribution Manager to enable rich media e-learning and corporate communications
- CDN for Service Provider—Use in conjunction with Cisco Content Distribution Managers and Content Routers to offer new premium hosting services such as on-demand content delivery and streaming media; also use to scale web sites

Specifications

Feature	Cisco Content Engine 590	Cisco Content Engine 560	Cisco Content Engine 507	Cisco Content Engine 507AV
Supported Interfaces	Two 10/100BASE-TX	Two 10/100BASE-TX	Two 10/100BASE-TX	Two 10/100BASE-TX
HTTP Performance	45+ Mbps	20 Mbps	T1/E1	T1/E1
SDRAM	1GB	512 MB	256 MB	256 MB
Max Storage	252 GB	144 GB	36 GB	18 GB
Internal Storage (Ultra2 SCSI)	Two 18 GB drives	Two 18 GB drives	One or two 18 GB drives	One 18 GB drives
Flash memory	16 GB	16 GB	16 GB	16 GB
Storage Array Support	Yes	Yes	No	No
Rack Units	1	1	1	1
Dimensions (HxWXD)	1.75 x 17.5 x 14.1 in.	1.75 x 17.5 x 14.1 in.	1.75 x 17.5 x 14.1 in.	1.75 x 17.5 x 14.1 in.
Weight	12.5 lb.	12.5 lb.	12.5 lb.	12.5 lb.
Power	AC/DC	AC	AC	AC

Options

Storage Array	Storage Array 6 (AC/DC)
Disks (Ultra2 SCSI)	6
Power Supplies	One or two (n+1) AC/DC power supplies
Cooling Fans	Three (n+1) cooling fans
SCSI LVD Interfaces	Two SCSI LVD interfaces
JBOD	Yes
Dimensions (HxWXD)	5.25 x 17.55 x 17 in.

Competitive Products

- CacheFlow: CacheFlow Client Accelerator (Server Accelerator for SP)
- Inktomi: Traffic Server™
- Network Appliance: NetCache™ Appliance

Distribution Part Number and Ordering Information

Hardware[1]

CE-590	Cisco Content Engine 590 AC Power, Cache software
CE-590-CDN	Cisco Content Engine 590 AC Power, CDN software
CE-560	Cisco Content Engine 560 AC Power, Cache software
CE-507	Cisco Content Engine 507 AC Power, Cache software
CE-507-CDN	Cisco Content Engine 507 AC Power, CDN software
CE-507AV-CDN	Cisco Content Engine 507 with analog video card, CDN software

Options

CE-DISK-18GB-507-X	(1) Extra 18 GB Ultra2 SCSI disk drive for Content Engine 507
SA6-SHF-6DISK-AC	Storage Array 6, AC
SA6-OPT-AC	Storage Array 6, AC option (only when purchased with a CE)

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 Content Engine Web site: http://www.cisco.com/go/ce500

Cisco Content Engine 7300 Series

Cisco Content Engines (CE) are the edge node devices in the Content Delivery Network (CDN) system that are responsible for the delivery of distributed content to the end-user. As content services platforms, Cisco Content Engines offer a number of content services that solve critical problems faced by Service Providers and Enterprises including caching, CDN service, and Employee Internet Management.

Cisco Content Engine 7300 Series is designed for large Service Providers who are looking to offer either caching services to reduce WAN bandwidth costs and increase performance of web sites and/or who are looking to offer new premium content delivery services such as on-demand content delivery and streaming media.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco CE 7320	• Large Service Providers deploying caching and CDN services

Key Features

- Caching:
  - Accelerated content delivery
  - WAN bandwidth savings
  - Protection vs. uncontrollable bottlenecks
- CDN:
  - Use in conjunction with Cisco Content Distribution Managers and Content Routers to offer new premium hosting services such as on-demand content delivery and streaming media
  - Scale web sites

Specifications

Feature	Cisco Content Engine 7320
Supported Interfaces	Two 1000BASE-SX and four 10/100BASE-TX
HTTP Performance	155+ Mbps
SDRAM	2 GB
Max Storage	396 GB
Internal Storage (Ultra2 SCSI)	Ten 18 GB drives
Flash memory	128 MB
Storage Array Support	Yes
Rack Units	7
Dimensions (HxWXD)	12.25 x 17.5 x 28 in.
Weight	115 lb.
Power	3 (n+1) AC

Options

Storage Array	Storage Array 12
Disks (Ultra2 SCSI)	12
Power Supplies	Two (n+1) AC power supplies
Cooling Fans	Three (n+1) cooling fans
SCSI LVD Interfaces	Two SCSI LVD interfaces
JBOD	Yes
Dimensions (HxWXD)	5.25 x 17.55 x 17 in.

Competitive Products

- CacheFlow: CacheFlow Server Accelerator
- Inktomi: Traffic Server
- Network Appliance: NetCache Appliance

Distribution Part Number and Ordering Information

Cisco Content Engine 7300[1]

CE-7320	Content Engine 7320 AC Power, Cache software
CE-7320-CDN	Content Engine 7320 AC Power, CDN software
Options	
SA12-SHF-12DISK-AC	Storage Array 12, AC power
SA12-OPT-AC	Storage Array 12, AC option (only when purchased with a CE)

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 Content Engine Web site: http://www.cisco.com/go/ce7300

Cisco Content Distribution Manager 4600 Series

The Cisco Content Distribution Manager (CDM) is a Content Delivery Network (CDN) device that configures network and device policy settings for edge node Content Engines (CE). Used to accelerate web content and save network bandwidth in a content networking architecture, the CDM can be easily integrated into existing network infrastructures. Deployed in an Enterprise or Service Provider Internet or extranet environment, the Cisco CDM and CEs provide transparent on-demand rich media streaming and static file delivery to standard PCs.

Cisco CDNs allow Service Providers and Enterprises to distribute rich media content closer to their target customers overcoming issues such as network bandwidth availability, distance or latency obstacles, origin server scalability, and congestion issues during peak usage periods. The CDN solution enables content delivery services for web hosting, streaming, e-commerce, e-learning, corporate communications, and mission critical e-business applications.

When to Sell

Sell This Product	When a Customer Needs These Features
CDM4630	• Small enterprise network trials, proof of concept and pilot programs
CDM4650	• Medium and large enterprise networks, supports 1000 Cisco Content Engines
CDM4670	• Service provider deployment, supports thousands of Cisco Content Engines

Key Features

- Complete CDN solution with Cisco Content Router and Cisco Content Engines

- Central control over delivery of high-bandwidth content, live and video on demand over any IP network

- Easy-to-use management capabilities through a Web-based graphical user interface; services include previewing and scheduling replication of media to edge devices, bandwidth and content management

- Automatically generates thumbnail reference images and sample Web pages for integration with corporate extranet, intranet, and Internet sites

- One URL per media file provides seamless integration into any Web site

- Integrates with standards for Web multimedia presentation, including HTML/DHTML, eXtensible Markup Language (XML) and SMIL

- Secure and fault-tolerant file transfer using Secure Socket Layer (SSL) encryption for secure media transfers

- Channel configuration for media distribution to any number of discrete audiences using "distribution lists"

- Host content for a variety of customers within a single CDN

- Ability to create multiple virtual CDNs addressing targeted media distribution

- Content registration in cache logs for billing capabilities

Specifications

Feature	Content Distribution Manager 4630	Content Distribution Manager 4650	Content Distribution Manager 4670
Sampling of Rich Media File Formats	MPEG RealVideo Windows Media QuickTime HTML, GIF, JPEG Adobe Acrobat Macromedia Shockwave CAD/CAM MRI	MPEG RealVideo Windows Media QuickTime HTML, GIF, JPEG Adobe Acrobat Macromedia Shockwave CAD/CAM MRI	N/A - file formats handled by the CEs
Supported Interfaces	Autosensing 10/100BASE-T	Autosensing 10/100BASE-T	Autosensing 10/100BASE-T
Recommended Network Size	Less than 100 CEs	Less than 1000 CEs	Less than 10,000 CEs
Processor Speed	600-MHz PIII	2x866 Xeon	2x866 Xeon
RAM	512 MB	1 GB	1 GB
Internal Storage	One 30 GB, 10K RPM, Ultra2 SCSI disk drive	140 GB RAID 5	36 GB[1]
Storage Array	Future	Future	Future
Rack Units	1	7	7
Dimensions (HxWXD)	1.72 x 17.5 x 14.1 in.	12.25 x 17.5 x 28 in.	12.25 x 17.5 x 28 in.
Power and Current Requirements	Universal input: 100-127V, 200-240V Frequency: 50-60 Hz Maximum power: 130W Current: 2A max	(n+1) AC / (n+1) DC AC: Universal input: 100-127V, 200-240V Frequency: 47 to 63 Hz Maximum power: 320W each: 3 (n+1) power supplies Current: 5A max each: 3 (n+1) power supplies DC: Universal input: -40 to -60 VDC Maximum power: 320W each: 3 (n+1) power supplies Current: 14A each: 3 (n+1) power supplies	Same as Cisco Content Distribution Manager 4650

1. Minimum storage required for DM service provider configurations

Competitive Products

- Cacheflow: Client and Server Accelerators
- Inktomi: Traffic Server
- Network Appliance: ContentDirector

Distribution Part Number and Ordering Information

Hardware[1]

CDM-4630	Cisco Content Distribution Manager 4630
CDM-4650	Cisco Content Distribution Manager 4650
CDM-4670	Cisco Content Distribution Manager 4670

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 Content Distribution and Management Web site: http://www.cisco.com/go/cdm

Cisco Content Router

The Cisco Content Router (CR) is a global load balancer designed to load balance up to 20 sites on the Internet in a Content Networking architecture so that it quickly and accurately routes a user's connection to the best site based on network delay, site availability, content availability, and derived bandwidth.

The typical deployment of the Content Router includes at least one CR4400, or a redundant pair, near the origin datacenter and a hardware device that includes the Content Routing Agent (CRA) at each of the mirrored sites. The agent can reside on a dedicated platform such as a Cisco 2600 router, on a content switch such as Cisco Local Director, or on a content-delivery node such as the Content Engine 500 series.

The CR is defined as the authoritative Domain Name System (DNS) server for the DNS name of a set of servers at multiple sites on the Internet. A user's application makes a DNS query for the IP address of one of the servers that is now routed by the content router, which starts the routing process. The client's DNS server sends a request to the content router, which tunnels the request to the CRA at each of the remote sites. The original DNS query is included in the time-delayed DNS request, each of the agents sends a DNS response packet with the IP address of a local content switch, load balancer, or server at the site. The first packet through the network wins the race and the client connects to the winning site. The CR/CRA can even 'bloat' packets to artificially enlarge the packet size so it more accurately derives network bandwidth.

Another insertion mechanism that works very well in large scale enterprises and access service providers is Edge-Intercept Insertion. This mechanism utilizes WCCPv2 to redirect the client-to-DNS requests to the CR. The CR can then establish a DNS response race directly back to the client, which makes accurate, DNS-based redirections with 'to-the-user' accuracy.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Content Router CR4400	• To solve Web site scalability issues and mirrored site problems by routing users to the best site for content • Supports other applications including audio and video streaming applications • Distributed datacenter environments • Access Provider environments leveraging WCCP and Edge-Intercept Insertion mechanisms.

Key Features

- Uses DNS to redirect a client to the best site on the Internet based on network delay

- Transparent redirection to the end user and works with any IP application

- Easy configuration through a Cisco IOS style command-line interface

- Redundant configurations, multiple CRs can be deployed at the origin site to provide fail-over and load scaling

- Can be deployed within an internal enterprise network using Web Cache Control Protocol Version 2 (WCCPv2) to redirect DNS requests to a Boomerang server located near the internal DNS server

Specifications

Feature	Cisco Content Router CR4400
Supported Interfaces	Two autosensing 10/100BASE-TX ports
SDRAM	256 MB
Flash Memory	8 MB
Internal Storage	9-GB, 7200-RPM, Ultra II SCSI LVD disk drive
Rack Units	1
Dimensions (HxWXD)	1.72 x 17.50 x 14.13 in.
Weight	12.5 lbs.
Power	AC

Competitive Products

The CR4400 uses a 3rd Generation Content Routing technology through its unique, scalable race-based system. The majority of the competition is still working on 1st Generation Round-Trip Response Time (RTT) measurements as well as RTT Caching Systems. These technologies either severely delay site selection causing poor user experience, or they use customers as 'guinea pigs' and might purposely send them to an arbitrarily selected location with no thought to proximity.

Distribution Part Number and Ordering Information

Cisco Content Router[1]

CR-4400   Cisco Content Router 4400

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 Content Router Web site: http://www.cisco.com/go/cr

Cisco CSS 11000 Series Content Services Switches

The Cisco CSS 11000 series content services switches optimize Web response time and content availability for high-end Web and e-commerce sites. Designed to front-end Web server farms or cache clusters, CSS 11000 series switches determine the best Web server or cache to handle the content request at that moment based on the content being requested, availability and location of content, and network and server load—all at wire speed. Cisco offers three 11000 series platforms—the carrier-class, chassis-based CSS 11800; the standalone CSS 11150 for small-to-medium Web sites; and the compact CSS 11050 for small Web sites and PoPs.

Featuring Cisco Web Network Services (Web NS) software, the Cisco CSS 11000 series enables Web and application Service Providers, Web content providers, and Enterprises engaged in e-business to build global Web networks optimized for e-commerce transactions and Web content delivery. With its patented content switching technology, the Cisco CSS 11000 series gives businesses maximum control in ensuring availability of their Web sites, securing Web site resources without compromising performance, and allocating Web site resources efficiently.

When to Sell

Sell This Product	When a Customer Needs These Features
CSS 11800	• High-density, high-performance content switching for large server farms or cache clusters • A platform for delivering new, value-added managed services • Global load balancing for large distributed Web sites
CSS 11150	• Compact content switching platform for up to 16 Web servers or caches • Cost-effective firewall load balancing • Cache redirection for transparent or reverse proxy caching
CSS 11050	• Compact content switching platform for up to 8 Web servers or caches • Cost-effective solution for Points of Presence (PoPs)

Key Features

- High-speed Web content delivery via best site and server selection based on full URL, cookie, and resource availability information

- Site-level security with wire-speed denial-of-service (DoS) prevention; firewall load-balancing provides scalable security for backend databases and applications

- Up to 400 percent improvement in Web cache efficiency for transparent, proxy, and reverse proxy caching configurations

- Supports all TCP- and UDP-based Web protocols, wire-speed Network Address Translation (NAT), and integrated IP routing

- Optimizes both content requests and delivery for HTTP, passive File Transfer Protocol (FTP), and streaming media protocols

- Enables advanced service-level agreements (SLAs), and a variety of new fee-based services

- Offers active-active and active-passive redundancy configurations

Specifications

Feature	CSS 11800	CSS 11150	CSS 11050
Fixed Ports	None	12 10/100BASE-TX ports 16 10/100BASE-TX ports 12 10/100BASE-TX and 4 100BASE-FX ports 12 10/100BASE-TX and 2 1000BASE-SX ports	8 10/100BASE-TX ports 8 10/100BASE-TX and 1 1000BASE-SX port
Modular Slots	Eight slots for I/O modules	None	None
Available Modules	8 RJ-45 100BASE-TX ports 6 RJ-45 10/100BASE-TX and 2 SC duplex 100BASE-FX ports 6 RJ-45 10/100BASE-TX and 2 SC duplex 100BASE-FX ports 6 RJ-45 10/100BASE-TX and 2 SC duplex 100BASE-FX ports	None	None
Available System Modules	Redundant System Control Module (SCM) Switch fabric module	None	None
Backplane	20.0 Gbps (base) 20.0 Gbps 1:1 redundant (optional)	5.0 Gbps	5.0 Gbps
Stackable	No	No	No
Dimensions (HxWxD)	25.25 x 17.0 x 12.5 in.	2.62 x 17.0 x 15.0 in.	2.62 x 17.0 x 15.0 in.

Competitive Products

- Alteon: ACEdirector and 700 Series
- F5 Networks: Big/IP and LAN switch Partners
- Foundry Networks: ServerIron
- Radware: Web Server Director (WSD)
- Resonate: Central Dispatch and Global Dispatch

Distribution Part Numbers and Ordering Information

Cisco CSS 11800[1]

CSS-11801-AC	CSS 11801, (1) SFM2, (1) SCM, (1) IDM-HD, (1) AC
CSS8-IOM-8FE	8 RJ-45 100BASE-TX ports
CSS8-IOM-6/2FE	6 RJ-45 10/100BASE-TX ports and 2 SC duplex 100BASE-FX ports
CSS8-IOM-4GE/8	Up to 4 full duplex 1000BASE-SX ports with 8 MB flow cache
CSS8-IOM-4GE/16	Up to 4 full duplex 1000BASE-SX ports with 16 MB flow cache
CSS8-SCM	Redundant System Control Module (SCM)
CSS8-SFM2	Switch fabric module
CSS8-GBIC-SX	1000BASE-SX gigabit interface converter
CSS8-IDM-MEM-FD	Integrated Disk Module with Flash Disk

Cisco CSS 11150

CSS-11151-AC	12 10/100BASE-TX ports
CSS-11152-AC	16 10/100BASE-TX ports
CSS-11153-AC	12 10/100BASE-TX ports and 4 100BASE-FX ports
CSS-11154-AC	12 10/100BASE-TX ports and 2 1000BASE-SX ports

Cisco CSS 11150

CSS-11051-AC	8 10/100BASE-TX ports
CSS-11052-AC	8 10/100BASE-TX ports and 1 1000BASE-SX port

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 CSS 11000 series Web site: www.cisco.com/go/11000

Cisco LocalDirector

The Cisco LocalDirector series offers a high-availability, integrated hardware and software solution that intelligently balances the load of user traffic across multiple Transmission Control Protocol/Internet Protocol (TCP/IP) application servers. Cisco LocalDirector tracks network sessions and server load conditions in real time, directing each session to the most appropriate server. All physical servers appear as one virtual server, requiring only a single IP address and a single Universal Resource Locator (URL) for an entire server farm.

Cisco LocalDirector, a component of a content delivery network, accelerates content delivery by routing client requests to the best Web server and the Web site of origin. LocalDirector supports critical content-routing protocols such as Dynamic Feedback Protocol (DFP) and the Boomerang Control Protocol (BCP), which ensure seamless content delivery network integration and reduced deployment costs. Layer 5-7 content load balancing guarantees the correct client is routed to an optimized content location. By distributing user requests across a cluster of servers, Cisco LocalDirector optimizes responsiveness and system capacity, ensures scalability, and dramatically reduces the cost of providing large-scale Internet, database, and application services.

When to Sell

Sell This Product	When a Customer Needs These Features
LocalDirector	• Load balancing across multiple TCP/IP application servers • High availability Internet services such as e-commerce, Web content, and e-mail • High availability Intranet services for employees, customers, and suppliers

Key Features

- Content load balancing and redirection allow Layer 5-7 content load balancing, which guarantees the correct client is routed to an optimized content location

- Simple setup in 10 commands for typical configurations, with little disruption to existing network configuration and no changes to network addresses; includes intuitive configuration with Web-based GUI

- High performance hardware supports up to 16 Fast EtherChannel 10/100 interfaces (LD 430 model) and reduces hardware costs by allowing up to 15 direct server connections

- Hot standby configuration replication reduces administrative start up costs by automatically transferring a primary Cisco LocalDirector configuration to a secondary Cisco LocalDirector

- Transparent addition and removal of servers with no disruption to user service, making it easy to scale up or down

- Hot standby and stateful fail-over mechanisms ensure high availability by eliminating all points of failure for the data center

- SSL, Cookie Sticky, and Redirect Sticky ensure completion of complex transactions in proxy server environments and shopping cart situations

Specifications

Feature	LocalDirector 416	LocalDirector 430
Supported Interfaces	3-port 10/100 Ethernet	Up to 16 10/100 Ethernet or 4 Gigabit Ethernet
Processor Speed (type)	400 MHz (Pentium II)	600 MHz (Pentium II)
RAM	32 MB	384 MB
Throughput	90 MB	400 MB with Fast Ethernet
Dimensions (HxWXD)	5.21 x 16.82 x 17.5 in	5.21 x 16.82 x 17.5 in
Service Category	10	15

Competitive Products

- F5 Labs: Big IP
- Foundry Networks: ServerIron Switch
- Nortel Networks/ Alteon: Ace Director
- Radware: Web Server Director
- Resonate, Inc.: Central Dispatch

Distribution Part Numbers and Ordering Information

LocalDirector[1]

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

Cisco DistributedDirector[1]

DistributedDirector provides dynamic, transparent, and scalable Internet traffic load distribution between multiple geographically dispersed servers.

DistributedDirector is a global Internet service scaling solution that utilizes 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Distributed Director	• Load distribution across geographically/topologically dispersed TCP/IP servers • High availability for dispersed mission-critical applications • Data center redundancy and failover

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 Software 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.

Cisco DistributedDirector

Specifications

Feature	DistributedDirector 2501/2502	DistributedDirector 4700M
Supported Interfaces	D2501: 1-port Ethernet DD2502: 1-port Token Ring	DDD4700ME: 1-port Ethernet DD4700MFE: 1-port Fast Ethernet DD4700MTR: 1-port Token Ring DD4700MFDM: 1-port dual-attached multimode FDDI
Processor (type)	20-MHz (68030 processor)	133-MHz (IDT Orion RISC processor)
Flash Memory	8 MB	16 MB
DRAM	8 MB	32 MB
Dimensions (HxWxD)	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

• 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 VPN 3000 Series

The Cisco VPN 3000 Concentrator Series is a family of purpose-built, remote access Virtual Private Network (VPN) platforms and client software that incorporates high availability, high performance and scalability with the most advanced encryption and authentication techniques available today. With the Cisco VPN 3000 Concentrator Series, customers can take advantage of the latest VPN technology to vastly reduce their communications expenditures. These components include Scalable Encryption Processing (SEP) modules that enable users to easily add capacity and throughput.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco VPN 3005 Concentrator	• Designed for small- to medium-sized organizations with bandwidth requirements up to full-duplex T1/E1 (4 Mbps maximum performance) and up to 100 simultaneous remote access sessions • Encryption processing is performed in software • Does not have built-in upgrade capability or redundancy
Cisco VPN 3015 Concentrator	• Designed for small- to medium-sized organizations with bandwidth requirements up to full-duplex T1/E1 (4 Mbps maximum performance) and up to 100 simultaneous remote access sessions • Encryption processing is performed in software • Field-upgradable to the Cisco VPN 3030 and 3060 models and redundancy
Cisco VPN 3030 Concentrator	• Designed for medium- to large-sized organizations with bandwidth requirements from fullT1/E1 through T3/E3 (50 Mbps maximum performance) and up to 1500 simultaneous remote access sessions • Specialized SEP modules perform hardware-based acceleration • Field-upgradeable to the Cisco VPN 3060 • Redundant and non-redundant configurations available
Cisco VPN 3060 Concentrator	• Designed for large organizations demanding the highest level of performance and reliability, with high-bandwidth requirements from fractional T3 through full T3/E3 or greater (100 Mbps maximum performance) and up to 5000 simultaneous remote access sessions. • Specialized SEP modules perform hardware-based acceleration • Redundant and non-redundant configurations available
Cisco VPN 3080 Concentrator	• Optimized to support large enterprise organizations that demand the highest level of performance combined with support for up to 10,000 simultaneous remote access sessions • Specialized SEP modules perform hardware-based acceleration • Available in a fully redundant configuration only
Cisco VPN 3000 Client	• Establishes secure, end-to-end encrypted tunnels to the Cisco VPN 3000 Concentrator
Cisco VPN 3000 Monitor	• Software application for centralized monitoring, alert, and data collection on one or more Cisco VPN 3000 Concentrators

Key Features

• Includes unlimited Windows 98 and NT client distribution (client is included with the product at no additional cost)

• Supports standard authentication methods including RADIUS, SDI Tokens, and Digital Certificates

• Interoperates with Cisco PIX Firewall products

• Includes award winning, simple-to-use, Web-based management and policy push technology

• Supports high quality features such as VRRP and redundant SEPS and power supplies

Specifications

Feature	VPN 3005	VPN 3015	VPN 3030	VPN 3060	VPN 3080
Simultaneous Users	100	100	1500	5000	10,000
Encryption Throughput	4 Mbps	4 Mbps	50 Mbps	100 Mbps	100 Mbps
Encryption Method	Software	Software	Hardware	Hardware	Hardware
Encryption (SEP) Module	0	0	1	2	4
Redundant SEP	No	No	Optional	Optional	Yes
Expansion Slots	0	4	3	2	N/A
Upgradeable	No	Yes	Yes	N/A	N/A
Memory	32 MB (fixed)	128 MB	128 MB	256 MB	256 MB
T1 WAN Module	Fixed option	Optional	Optional	Optional	Optional
Hardware Configuration	1U, Fixed	2U, Scalable	2U, Scalable	2U, Scalable	2U
Power Supply	Single	Single, with a dual option	Single, with a dual option	Single, with a dual option	Dual
Client License	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Dimensions (HxWXD)	1.75 x 17.5 x 11.5 in.	3.5 x 17.5 x 14.5 in.	3.5 x 17.5 x 14.5 in.	3.5 x 17.5 x 14.5 in.	3.5 x 17.5 x 14.5 in.
Service Category	4	8	Redundant: 13 Nonredundant: 11	Redundant: 14	

Competitive Products

• Nortel: Contivity products

Distribution Part Number and Ordering Information

Cisco VPN 3000 Series Products[1]
CVPN3000-MONAPP   PN 3005, 3015, 3030, 3060, 3080 Concentrators Monitor App
Cisco VPN 3000 Series Upgrades
CVPN1530-UPG-RED   Cisco VPN 3015 To 3030 (Redundant) Upgrade Kit
CVPN1560-UPG-NR   Cisco VPN 3015 To 3060 (Non-Redundant) Upgrade Kit
CVPN1560-UPG-RED   Cisco VPN 3015 To 3060 (Redundant) Upgrade Kit
CVPN1580-UPG-RED   Cisco VPN 3015 To 3080 (Redundant) Upgrade Kit
CVPN3030-UPG-RED   Cisco VPN 3030 To 3080 (Redundant) Upgrade Kit
CVPN3060-UPG-NR   Cisco VPN 3030 To 3060 (Non-Redundant) Upgrade Kit
CVPN3080-UPG-R/R   Cisco VPN 3030 (Redundant) to 3080 (Redundant) Upgrade Kit
CVPN3080-UPG-RED   Cisco VPN 3030 To 3080 (Redundant) Upgrade Kit
CVPN3060-UPG-RED   Cisco VPN 3030 To 3060 (Redundant) Upgrade Kit
CVPN6060-UPG-RED   Cisco VPN 3060 To 3060 (Redundant) Upgrade Kit
CVPN6080-UPG-RED   Cisco VPN 3060 To 3080 (Redundant) Upgrade Kit
CVPN3060-UPG-R/R   Cisco VPN 3030 (Redundant) to 3060 (Redundant) Upgrade Kit
CVPN6080-UPG-R/R   Cisco VPN 3060 (Redundant) to 3080 (Redundant) Upgrade Kit
Cisco VPN 3000 Series Accessories
CVPN3000-PWR=   Cisco VPN 3000 Concentrator Power Supply
Cisco VPN 3000 Concentrator
CVPN3005-E/FE-BUN   CVPN3005-E/FE hw set, sw, client, & US power cord
CVPN3015-NR-BUN   CVPN3015-NR non-redundant hw set, sw, client, & US power cord
CVPN3030-NR-BUN   CVPN3030-NR non-redundant hw set, sw, client, & US power cord
CVPN3030-RED-BUN   CVPN3030-RED redundant hw set, sw, client, & US power cord
CVPN3060-NR-BUN   CVPN3060-NR non-redundant hw set, sw, client, & US power cord
CVPN3060-RED-BUN   CVPN3060-RED redundant hw set, sw, client, & US power cord
CVPN3080-RED-BUN   CVPN3080-RED redundant hw set, sw, client, & US power cord

Cisco VPN 3000 Series Basic Maintenance

CON-SNT-PKG4	SMARTnet Maintenance for Cisco CVPN3005-E/FE-BUN
CON-SNT-PKG8	SMARTnet Maintenance for Cisco CVPN3015-NR-BUN
CON-SNT-PKG11	SMARTnet Maintenance for Cisco CVPN3030-NR-BUN
CON-SNT-PKG13	SMARTnet Maintenance for Cisco CVPN3030-RED-BUN
CON-SNT-PKG14	SMARTnet Maintenance for Cisco CVPN3060-RED-BUN

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 VPN 3000 Series site: http://www.cisco.com/go/vpn3000

Cisco VPN 5000 Series

Cisco VPN 5000 Series Concentrators
enable Service Providers to easily deploy
managed VPN services. The Cisco VPN
5000 concentrators are purpose-built VPN
concentrator platforms and associated
VPN client software that incorporate the
most advanced high-performance
encryption and authentication techniques
available. The Cisco VPN 5000 concentrators series is the most feature-rich
carrier-class VPN product line on the market, with support for the most demanding
multiplatform, multiprotocol environments.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco VPN 5001	• Up to 1,500 simultaneous site-to-site or client-to-site IPSec (DES or 3DES) tunnels • Up to 40 Mbps 3DES throughput • VPN Clients for Windows 95/98/NT/2000, Mac OS, Linux, or Solaris platforms • CLI or GUI management interfaces • RADIUS PAP/CHAP, RSA SecurID, Axent Defender or X.509 Digital Certificates for authentication • VPNs that support IP, IPX or Appletalk across site-to-site tunnels • VPNs that support IP or IPX across client-to-site tunnels • VPNs that can take advantage of routing updates (RIP, RIP2, or OSPF) across site-to-site tunnels
Cisco VPN 5002	• Up to 10,000 simultaneous site-to-site or client-to-site IPSec (DES or 3DES) tunnels • Up to 256 different Customer Contexts (Virtual Routers, VPNs, RADIUS) • Up to 190 Mbps 3DES throughput • VPN Clients for Windows 95/98/NT/2000, Mac OS, Linux, or Solaris platforms • RADIUS PAP/CHAP, RSA SecurID, Axent Defender or X.509 Digital Certificates for authentication • VPNs that need tunnel mapping between IPSec and/or L2TP LNS into 802.1Q VLANs, Frame Relay PVCs, GRE tunnels, or other IPSec tunnels
Cisco VPN 5008	• Up to 40,000 simultaneous site-to-site or client-to-site IPSec (DES or 3DES) tunnels • Up to 256 different Customer Contexts (Virtual Routers, VPNs, RADIUS) • Up to 760 Mbps 3DES throughput • VPN Clients for Windows 95/98/NT/2000, Mac OS, Linux, or Solaris platforms • RADIUS PAP/CHAP, RSA SecurID, Axent Defender or X.509 Digital Certificates for authentication • VPNs that need tunnel mapping between IPSec and/or L2TP LNS into 802.1Q VLANs, Frame Relay PVCs, GRE tunnels, or other IPSec tunnels

Competitive Products

- CoSine: IPSX 9000

- Lucent (SpringTide): IPSS 5000

- Nokia: CC 5010

- Nortel Shasta: BSN 5000

Specifications

Feature	VPN 5001	VPN 5002	VPN 5008
Simultaneous VPNs	1,500	10,000	40,000
Encryption Throughput	40 Mbps	190 Mbps	760 Mbps
Encryption Method	Hardware	Hardware	Hardware
Encryption Engines	2	4	16
Key Generation Engines	1	2	8
Chassis ESP Card Slots	N/A (Fixed Config)	2	8
Memory (per ESP Card)	64 MB	256 MB	256 MB
ESP Card I/O Options	2 x 10/100 FE	10/100 FE DS3 HSSI OC3/STM1 POS	10/100 FE DS3 HSSI OC3/STM1 POS
Power Supplies	1	1	Dual Hot-Swap
Client License	Free Unlimited	Free Unlimited	Free Unlimited
Dimensions (HxWXD)	1.8 x 12.1 x 15 in.	6.25 x 17.5 x 16.25 in.	22.3 x 17.1 x 16.0 in.

Distribution Part Number and Ordering Information

Cisco VPN 5000 Series Products[1]

CVPN5001-AC	Cisco VPN 5001 Concentrator, 2 10/100, Universal AC Power
CVPN5002-AC	Cisco VPN 5002 Concentrator 2 Slot Chassis, AC Power
CVPN5002-DC	Cisco VPN 5002 Concentrator 2 Slot Chassis, DC Power
CVPN5008-AC	Cisco VPN 5008 Concentrator 8 Slot Chassis, Dual AC Power
CVPN5008-DC	Cisco VPN 5008 Concentrator 8 Slot Chassis, Dual DC Power
ESP-DS3-3DES	CVPN5000 Edge Services Processor, DS3 and 3DES
ESP-HSSI-3DES	CVPN5000 Edge Services Processor, HSSI and 3DES
ESP-FE-3DES	CVPN5000 Edge Services Processor 10/100 and 3DES
PWR-CVPN5008-AC=	CVPN5008 single AC Power Supply, Spare
PWR-CVPN5008-DC=	CVPN5008 single DC Power Supply, Spare
ESP-DS3-3DES=	CVPN5000 Edge Services Processor, DS3 and 3DES Spare
ESP-HSSI-3DES=	CVPN5000 Edge Services Processor, HSSI and 3DES Spare
ESP-FE-3DES=	CVPN5000 Edge Services Processor 10/100 and 3DES Spare
CVPN5001-SW	Cisco VPN 5001 System, Client, and Management Software
CVPN5002-SW	Cisco VPN 5002 System, Client, and Management Software
CVPN5008-SW	Cisco VPN 5008 System, Client, and Management Software
CVPN5000-SW=	Cisco VPN 5000 System, Client, and Management Software Spare CD
CVPN5000-FP	CVPN5000 Face Plate
PWR-CVPN5001-AC	CVPN5001 Universal AC PS Spare
ACS-CVPN5001-RM=	Cisco VPN 5001 Concentrator Rack Mount Spare
ACS-CVPN5002-RM=	Cisco VPN 5002 Concentrator Rack Mount Spare
ACS-CVPN5008-RM=	Cisco VPN 5008 Concentrator Rack Mount Spare
ACS-CVPN5008-FILTER=	Cisco VPN 5008 Filter 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 VPN 5000 Series site: http://www.cisco.com/go/vpn5000

Additional Products

See the Cisco IP/TV Web site: http://www.cisco.com/go/iptv

See the Cisco Video Solutions Web site: http://www.cisco.com/go/ipvc

Network Management Products

Network Management Products at a Glance

Product	Features	Page
CiscoWorks2000 Routed WAN Management Solution	A comprehensive set of applications for managing the router elements of a multiservice wide-area network. This bundle includes Access Control List Manager, Internetwork Performance Monitor, CiscoView, TrafficDirector, and Resource Manager Essentials	6-5
CiscoWorks2000 LAN Management Solution	Provides key applications needed to manage Catalyst-based campus networks. This bundle includes Campus Manager, CiscoView, TrafficDirector, Content Flow Monitor, and Resource Manager Essentials	6-7
CiscoWorks2000 Service Management Solution	Used to establish and validate service level agreements (SLA) for Cisco-based networks; leveraging embedded Cisco IOS technologies, the Service Management Solution's remotely deployable Cisco Management Engine (ME1110) collects SLA metrics, providing SLA conformance reports through an intuitive browser interface	6-9
CiscoWorks2000 Device Fault Manager	Provides real-time fault analysis for Cisco devices. Through a variety of data collection and analysis techniques, DFM generates "intelligent Cisco traps," which can be forwarded to other multi-device, multi-vendor event management systems installed in the network, sent to e-mail/pager gateways, or displayed in the DFM alarm window	6-11
CiscoWorks2000 User Registration Tool (URT)	Identifies users within the network and creates user registration policy bindings that help support mobility and tracking: • Ensures that users are associated with their authorized subnet/VLAN • Addresses the challenges associated with campus user mobility	6-13
CiscoWorks2000 Voice Manager (CVM)	Web-based voice management and reporting solution providing • Enhanced configuration and provisioning of voice ports and administration of dial plans on voice-enabled Cisco routers for VoIP, VoFR, and VoATM networks • Powerful reporting tool that allows users to easily analyze voice traffic based on configurable time intervals	6-15
CiscoWorks for Windows	A comprehensive suite of integrated network management tools for smaller networks: • Optional bundling with an event management and topology mapping application • Based on the SNMP industry standard	6-17
CiscoWorks Blue	A suite of products designed to simplify management of a consolidated SNA and IP network: • Enables router monitoring and reporting from UNIX, mainframe, and the Web • End-to-end visibility and control of SNA sessions through a mixed SNA/IP network	6-19
Cisco Netsys SLM Suite	Netsys Service-Level Management Suite (Cisco NSM) provides an integrated end-to-end network management solution combined with service-level management: • Consists of two core modules: the enhanced Connectivity Service Manager and Performance Service Manager	6-21
Cisco Netsys Baseliner	Netsys Baseliner for Windows NT displays, debugs, and validates your network configuration: • Tests configurations and changes offline before committing them to the live network • Allows you to visually navigate your network and gain an understanding of how it works	6-23
Cisco SwitchProbe Series	A family of standalone RMON probes for monitoring segments, rings, or links in an enterprise network: • Uses RMON agent technology to monitor network traffic at all seven layers • Enables users to analyze network traffic patterns, troubleshoot protocol-related problems, set up proactive alarms, and perform trend analysis for long-term planning	6-24
Cisco Element Management Framework (EMF)	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: • Flexible, modular model allows service providers to install the mix of element managers they need to support their dynamic businesses • Enables rapid development and deployment of new element managers, permitting service providers to more rapidly introduce and manage new services	6-27

Product	Features	Page
Cisco Info Center (CIC)	Service-level monitoring and diagnostics tool that provides network fault and performance monitoring, trouble isolation, and real-time service-level management for large networks: • Helps operators focus on important network events, offering a combination of alarm reduction rules, filtering, customizable alarm viewing, and partitioning • 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	6-29
Cisco Provisioning Center (CPC)	Service activation system that provisions Layer 2/Layer 3 (L2/L3) across Cisco Systems end-to-end networking technologies: • 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 • 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	6-31
Cisco QoS Policy Manager (QPM)	Enables centralized administration and automated deployment of bandwidth reservation and prioritization policies for critical network applications • Differentiates services to Web applications, voice traffic, and business-critical applications • Supports basic COPS implementations	6-33
Cisco Universal Gateway Manager (UGM)	Comprehensive suite of management tools • Next-generation GUI based element manager for the Cisco AS5000 series of Universal Gateways • Provides FCAPS capability for dial networks • Enables network deployment, maintenance, and troubleshooting	6-35

Network Management Products at a Glance

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:

- 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

Cisco Network Management Products

The CiscoWorks2000 product line offers a set of solutions to assist in managing the enterprise network. Solutions focus on three key areas: wide area network, local area network, and service level management. The CiscoWorks2000 solutions offer the flexibility to deploy end-to-end network management when and where it is needed. The solutions are built on a CiscoWorks2000 web based management server that provides common services for the integration of management applications. These services result in a framework for sharing of data and system process integration, thereby improving overall system administration.

- CiscoWorks2000 Routed WAN Management Solution combines new and existing Cisco applications (CiscoView, Internet Performance Monitor [IPM], Access Control List Manager [ACL], TrafficDirector [TD], and Resource Manager Essentials [RME]) to provide a full set of tools for monitoring the routed WAN elements in a network.
- CiscoWorks2000 LAN Management Solution combines several Cisco management applications (Campus Manager [CM], Content Flow Monitor [CFM], Resource Manager Essentials [RME], TrafficDirector [TD], and CiscoView) to provide strong Catalyst and Layer 2 and 3 switched network management, as well as path trace, user tracking, device inventory management, configuration tools, and device software updating.
- CiscoWorks2000 Service Management Solution combines Service Level Manager (SLM) and the CiscoWorks2000 server software with a new Management Engine 1110 (ME1110) service metric/SMA hardware collector. Together, these products allow administrators to deploy and manage service level agreements.
- CiscoWorks2000 Device Fault Manager (DFM) can be added to RWAN or LMS environments to provide real-time, detailed fault analysis for Cisco devices at both the device and VLAN level.
- CiscoWorks2000 User Registration Tool (URT) 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 for 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 the Cisco SwitchProbe family.

CiscoWorks2000 Routed WAN Management Solution

CISCOWORKS2000
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). 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. It also offers a "load-n-launch" interface with third-party solutions.

This product can be used to create a management intranet framework for integrating other browser-based management tools.

When to Sell

Sell This Product	When a Customer Needs These Features
Routed WAN Management Solution	• Optimize router 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
	• Graphically displays a devices operational status with tools to monitor its activity or change its configurations

Key Features

• Access Control List Manager—Provides a wizard- and template-based approach to simplifying the setup, management and optimization of Cisco IOS Software-based IP and IPX traffic filtering and device access control

• TrafficDirector—A comprehensive network traffic monitoring and troubleshooting application

• Internetwork Performance Monitor—A network response time and availability monitoring application

• Resource Manager Essentials—A powerful suite of Web-based network management solutions for managing routers, switches and access servers

• CiscoView—A new Web version of Cisco's graphical device management application

Specifications

Feature[1]	Routed WAN Management Solution Requirements
Server	Pentium III Class; Ultra SPARC 60 Class
	Windows NT; Windows 2000, Solaris 2.6, 2.7
	Note: IPM supports Windows NT and Solaris only
Client	Pentium III Class, SPARC or Ultra 10, HP-UX workstation, IBM RS/6000
	Windows 95, 98, NT, 2000; Solaris 2.6, 2.7; HP-UX 11.0; AIX 4.3.3
	Explorer 5.0, 5.01; Netscape 4.61, 4.7
Supported Devices	Most Cisco IOS Software routers, access servers, hubs, and switches
Supported Cisco IOS Software Versions	Generally supports Cisco IOS Software Versions 10.3 and above;
	Catalyst Supervisor code 2.1 and above
	Note: Some CW2000 applications require certain versions of these releases in order to operate; please see the specific application documentation and release notes for more information.

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 installation guides and release notes available on-line at:
    http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/index.htm

Distribution Part Numbers and Ordering Information

Cisco Routed WAN Management Solution[1]

CWRW+DFM-SOL-C1	Promotional Bundle for Solaris: This reduced price is available to new customers purchasing both the Routed WAN Management Solution and Device Fault Manager. Includes full RWAN and DFM products
CWRW+DFM-NT-C1	Promotional Bundle for Windows NT: This reduced price is available to new customers purchasing both the Routed WAN Management Solution and Device Fault Manager. Includes full RWAN and DFM products
CWRW-1.0-SOL	For Solaris: CiscoWorks2000 Routed WAN Management Solution includes CiscoView 5.x, RME 3.x, TrafficDirector 5.x, ACL Manager 1.x, and IPM 2.x
CWRW-1.0-NT	For Windows NT: CiscoWorks2000 Routed WAN Management Solution includes CiscoView 5.x, RME 3.x, TrafficDirector 5.x, ACL Manager 1.x, and IPM 2.x
CWRW-1.0-SOL-P1	Cross-bundle Promotion for Solaris: This reduced price part number is available to customers who have purchased LMS, SMS or other qualifying CiscoWorks2000 bundled product.
CWRW-1.0-NT-P1	Cross-bundle Promotion for Windows NT: This reduced price part number is available to customers who have purchased LMS, SMS or other qualifying CiscoWorks2000 bundled product.

1. For the latest part number, maintenance releases, 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: www.cisco.com/go/rwan

CiscoWorks2000 LAN Management Solution

The CiscoWorks2000 LAN Management Solution features a Web-based browser accessible set of applications for managing Cisco routers and Catalyst and LightStream switches. This solution provides extensive switched network discovery and display, configuration, data path tracing, RMON/RMON2 traffic, and LAN/WAN performance management capabilities on a device and network-wide basis.

CISCOWORKS2000
Campus Bundle

When to Sell

Sell This Product	When a Customer Needs These Features
LAN Management Solution	• A new Web-based set of tools for managing Cisco's award winning Catalyst and LightStream switches • Time saving user tracking and path trace analysis tools with support of IP phones • Automated process of inventorying network devices, updating device software, and managing 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

Key Features

• Campus Manager—A fully browser-enabled version of Cisco's popular CWSI tools that offers Web-based path analysis, easier management of VLAN, ATM and LANE services, Catalyst switch topology tools, and user tacking capabilities

• Content Flow Monitor—A tool for optimizing access server traffic load distribution

• Resource Manager Essentials—A powerful suite of Web-based network management solutions for managing routers, switches, and access servers

• TrafficDirector—A comprehensive network traffic monitoring and troubleshooting application

• CiscoView—A new Web version of Cisco's graphical device management application

Specifications

Feature[1]	Description
Server	Pentium III Class; Ultra SPARC 60 Class
	Windows NT; Windows 2000, Solaris 2.6, 2.7
Client	Pentium III Class, SPARC or Ultra 10, HP-UX workstation, IBM RS/6000
	Windows 95, 98, NT, 2000; Solaris 2.6, 2.7; HP-UX 11.0; AIX 4.3.3
	Explorer 5.0, 5.01; Netscape 4.61, 4.7
Supported Cisco Devices	Most Cisco IOS Software routers, access servers, hubs, and switches
Supported Cisco IOS Software Versions	Generally Cisco IOS Software Versions 10.3 and higher
	Catalyst Supervisor code 2.1 through 4.1
	Note: Some CW2000 applications require certain versions of these releases in order to operate, please see the specific application documentation and release notes for more information.

1. This table contains general system requirements for the CiscoWorks2000 management server and its client components. System requirements will increase depending on how individual LMS applications are installed. For more detailed system requirements and recommendations for tuning the management system for performance, refer to individual LMS application installation guides and release notes available on-line at: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/index.htm

Distribution Part Numbers and Ordering Information

LAN Management Solution[1]

CWLMS+DFM-NT-C1	Promotional Bundle for Windows NT: This reduced price is available to new customers purchasing both the LAN Management Solution and Device Fault Manager. Includes full LMS and DFM products.
CWLMS+DFM-SOL-C1	Promotional Bundle for Solaris: This reduced price is available to new customers purchasing both the LAN Management Solution and Device Fault Manager. Includes full LMS and DFM products.
CWLMS-1.0-NT	For Windows NT4.0 LAN Management Solution; includes Campus Manager 3.x. Content Flow Monitor 1.x, Traffic Director 5.8.x, RME 3.x, and CiscoView 5.x
CWLMS-1.0-SOL	For Solaris LAN Management Solution; includes Campus Manager 3.x. Content Flow Monitor 1.x, Traffic Director 5.8.x, RME 3.x, and CiscoView 5.x
CWLMS-1.0-NT-P1	Cross-bundle Promotion for Windows NT; This reduced price part number is available to customers who have purchased RWAN, SMS, or other qualifying CiscoWorks2000 bundled product
CWLMS-1.0-SOL-P1	Cross-bundle Promotion for Solaris; This part number is available to customers who have purchased RWAN, SMS, or other qualifying CiscoWorks2000 bundled product

LAN Management Solution Upgrades

CWLMS-1.0 NT-UPG	Upgrade to LMS for NT from CWSI 2.2+ and RME 2.x
CWLMS-1.0-SOL-UPG	Upgrade to LMS for SOL from CWSI 2.2+ and RME 2.x

1. For the latest part number, maintenance release, 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.)

Note   For customers running AIX or HPUX operating systems, a subset of the LAN Management Solutions applications is available in the CiscoWorks2000 for AIX/HPUX.

For More Information

See the LAN Management Solution Web site: www.cisco.com/go/lms

CiscoWorks2000 Service Management Solution

The CiscoWorks2000 Service Management Solution enables IT managers to establish and validate service level agreements (SLA) for their Cisco-based networks. Leveraging embedded Cisco IOS technologies, the Service Management Solution's remotely deployable Cisco Management Engine (ME1110) collects SLA metrics, providing SLA conformance reports through an intuitive internet browser user interface.

When to Sell

Sell This Product	When a Customer Needs These Features
Service Management Solution	• Administrators who need to define service-level contracts and the service-level agreements associated, and to create detailed business and technical reports • Provides a simpler way to interact with embedded Cisco IOS Technologies to obtain Layer 3 and Layer 4 service metric data through synthetic testing and monitoring of service performance • Users who want to build end-to-end service level monitoring solution using complementary service management applications provided by third parties, which are integrated via the XML APIs of CiscoWorks2000 SLM • Service provider wanting to differentiate their offering

Key Features

• Service Level Manager—defines and monitors service level agreements based on:

  – Latency—using UDP and ICMP, with the ability to set the ToS value and payload size for network latency tests

  – Network service—determines DNS resolve times and HTTP response times (for the HTTP service the network manager can see the time taken to perform the DNS lookup, TCP connection, and page download)

  – Voice-over-IP—forward and return jitter can be measured between two points in the network with the ability to change the number of packets, payload, ToS value, and inter-packet gap

• Inventor Manager—provides a central database for storing Cisco device information, including address, location, firmware, available slots, software versions, and memory resources

• CiscoView—a new Web version of Cisco's graphical device management application

• ME1110 hardware—a network management hardware appliance that installs in the network and acts as the interface between CW2000 SLM server and the network elements where the SA Agent is configured for service conformance testing

Specifications

Feature[1]	Description
Server Hardware	System: Sun SPARC Ultra 20 or higher Wintel PC 450 MHz or higher
Server Software	Solaris 2.6 Microsoft Windows NT 4.0 server or NT 4.0 workstation with Service Pack 5 or 6a
Client	Browser client requirements are: • Internet Explorer 5.01 or later with Java Virtual Machine (JVM) 5.00.3182 or later • Navigator 4.6.1 or 4.7

1. This table contains general system requirements for the CiscoWorks2000 management server and its client components. For detailed system requirements and recommendations for tuning the management system for performance, refer to individual installation guides and release notes available on-line at: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/index.htm

Distribution Part Numbers and Ordering Information

CiscoWorks2000 Service Management Solution[1]

CWSMS-1.0	Service Management Solution 1.0; includes SW and HW (1-ME1110 HW, SLM, CiscoView, and CW2000 Management Server SW
CWSMS-1.0-P1	Cross bundle promotion. This part number is available to customers who have purchased RWAN, LMS or other qualifying CiscoWorks2000 bundled product. Contains full SMS product (HW+SW)
CWME1110-HW	Standalone Mgmt Engine 1110, HW ONLY. Hardware only offering for adding additional collectors to SMS environments. 1-RU rack mountable, 110/220v.

1. For the latest part number, maintenance releases, 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 CiscoWorks2000 Service Management Solution Web site: www.cisco.com/go/cwsms

CiscoWorks2000 Device Fault Manager

CiscoWorks2000 Device Fault Manager (DFM) provides real-time, detailed fault analysis, designed specifically for Cisco devices. This focus on Cisco devices enables DFM to monitor Cisco-based networks for a variety of fault conditions, analyze these conditions, and notify the user via "intelligent Cisco traps" when a problem has occurred that requires attention. The Cisco traps can be forwarded to other multi-device, multi-vendor event management systems installed in the network, set to e-mail/pager gateways or displayed in the DFM alarm window.

When to Sell

Sell This Product	When a Customer Needs These Features
CiscoWorks2000 Device Fault Manager	• Ability to actively monitor Cisco-based networks for a variety of fault conditions at both the device and VLAN level • Designed to work "out of box" with support for the most common Cisco routers, switches, access servers, and hubs already built in • Does not require users to write rules or set polling threshold values • Interoperable with other Fault Management systems via intelligent traps • Integration with the CiscoWorks2000 product line as an add-on

Key Features

• Actively monitors a wide range of problems at both the device and VLAN levels via Internet Control Message Protocol (ICMP) polling, Simple Network Management Protocol (SNMP) Management Information Base (MIB) interrogation, and SNMP trap reception, only tracking conditions known to help cause higher level problems in that particular device

• Integration with CiscoWorks2000 Desktop and Server leveraging security roles, backup management services and automatic import of Cisco devices from Resource Manager Essentials

• Integration with Enterprise Management Systems enabling intelligent Cisco traps to be displayed properly in their respective event systems

• Analyzes both Layer 2 and Layer 3 devices, monitoring them individually and recognizing which ports are members of specific VLANs

• Incremental device support updates which do not require any rules to be written by the user for DFM to analyze and report upon faults in your Cisco network capability - available through the Cisco Software Center

Specifications

Feature[1]	CiscoWorks2000 Device Fault Manager
Server	450MHz Intel Pentium; SPARC Ultra 10
	Windows NT; Windows 2000
Client	450Mhz Intel Pentium III, SPARC Ultra 10, HP-UX workstation, IBM RS/6000
	Windows 95, 98, NT, 2000; Solaris 2.5.1, 2.6, 2.7; HP-UX 10.2, 11.0; AIX 4.3.3
	Explorer 5.0, 5.01; Netscape 4.61, 4.7

1. This table contains general system requirements for the CiscoWorks2000 management server and its client components. For detailed system requirements and recommendations for tuning the management system for performance, refer to individual installation guides and release notes available on-line at: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/index.htm

Distribution Part Numbers and Ordering Information

CiscoWorks Device Fault Manager [1]

CWDFM-1.0-NT-ADD	CiscoWorks2000 Device Fault Manager 1.x for NT. Requires existing LMS or RWAN installation
CWDFM-1.0-SOL-ADD	CiscoWorks2000 Device Fault Manager 1.x for Solaris. Requires existing LMS or RWAN installation
CWLMS+DFM-NT-C1	Promotional bundle including both LMS 1.x and Device Fault Manager 1.x for NT
CWLMS+DFM-SOL-C1	Promotional bundle including both LMS 1.x and Device Fault Manager 1.x for Solaris
CWRW+DFM-NT-C1	Promotional bundle including both RWAN 1.x and Device Fault Manager 1.x for NT
CWRW-DFM-SOL-C1	Promotional bundle including both RWAN 1.x and Device Fault Manager 1.x for Solaris

1. For the latest part number, maintenance releases, 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 CiscoWorks2000 Device Fault Manager Web site: http://www.cisco.com/dfm

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. 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.

When to Sell

Sell This Product	When a Customer Needs These Features
User Registration Tool	• 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

Key Features

- Automated switch port configuration and dynamic VLAN domain assignment for users logging into the network

- Integration with Microsoft NT and Netware NDS

- Fully redundant architecture, which is essential for ensuring continuous 24 x 7 successful login and switch port reconfiguration

- Fully scalable for large networks

- Broad range of Catalyst switches supported

- Complements other CiscoWorks2000 solutions and supports data import

Specifications

User Registration Tool[1]	Description
Supported Cisco Products	Any Catalyst switch supporting dynamic ports
Client Software Requirements	DHCP-enabled Windows 95, 98, NT, 2000, and ME clients
Microsoft Server Requirements	Microsoft Windows NT or 2000 servers
Novell NDS Server Requirements	Novell NetWare 5.0 running the IP stack with the Z.E.N. Works Starter pack
DHCP Server Requirements	Microsoft DHCP server or Cisco Network Registrar DHCP server

1. This table contains general system requirements for the CiscoWorks2000 management server and its client components. For detailed system requirements and recommendations for tuning the management system for performance, refer to individual installation guides and release notes available on-line at: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/index.htm

Distribution Part Numbers and Ordering Information

User Registration Tool[1]

URT-1.2-WIN-NT	User Registration Tool Version 1.2 for NT
URT-1.2-WIN-NT-UPG	User Registration Tool Upgrade to 1.2 from URT 1.0 and 1.1 for NT

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: www.cisco.com/go/urt

CiscoWorks2000 Voice Manager

CiscoWorks2000 Voice Manager (CVM) is a Web-based voice management and reporting solution. The application provides enhanced capabilities to configure and provision voice ports, and create and modify dial plans on voice-enabled Cisco routers for VoIP, VoFR, and VoATM network deployments. Additionally, CVM has a powerful reporting tool that allows users to easily analyze voice traffic based on configurable time intervals.

When to Sell

Sell This Product	When a Customer Needs These Features
CiscoWorks2000 Voice Manager	• An inexpensive means to support rapid voice network deployment, considerably reducing the time spent in provisioning services • Foundation management for Cisco voice platforms • A Web-based solution for testing, configuring, and monitoring VoX cards and networks • Flexible reporting of voice related time and usage data • Management of Cisco 1700, 2600, 3600, and MC3810 series devices, the AS5300 series universal access server, and 7200 and 7500 series routers • Time-saving bulk configuration and dial up plan configuration checking

Key Features

- Voice port management—New tools for managing FXO, FXS, E&M, and ISDN configurations in single or batch mode

- Dial plan management—Create and manage local and VoIP, VoFR, and VoATM network dial plans

- New reports—Provide valuable call time and usage summaries and basic accounting information; advanced reports are provided in partnership with Telemate.net, a leading developer of information management tools

- Multiple platform support—The CVM browser client runs on Windows 95, Windows 98, Windows NT, or UNIX platforms

- CiscoWorks2000 integration—Provides a common platform for running CVM alongside different applications that manage other router and switch functions

- Improved performance and scalability—Scales to support multiple voice-enabled Cisco routers across small or large enterprises

- Quality of service—Tools for provisioning voice ports

Specifications

Feature[1]	CiscoWorks2000 Voice Manager 2.0
Server	Pentium III Class; Ultra SPARC 60 Class Windows NT
Client	Pentium III Class, SPARC or Ultra 10 Windows 95, 98, NT; Solaris 2.6, 2.7 Explorer 5.0, 5.01; Netscape 4.61, 4.7
Supported Cisco IOS Software Versions	Cisco IOS Releases: • VoIP: 12.0.7T • VoFR/ VoATM: 12.0.7.XK, 12.1.2T (when available). NOTE: 12.1.1 T is NOT supported.

1. This table contains general system requirements for the CiscoWorks2000 management server and its client components. For detailed system requirements and recommendations for tuning the management system for performance, refer to individual installation guides and release notes available on-line at: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/cw2000/index.htm

Distribution Part Numbers and Ordering Information

CiscoWorks Voice Manager[1]

|	
CWVM-2.0-NT	CiscoWorks2000 Voice Manager 2.0 for NT, Includes SW and Doc
CWVM-2.0-NT-UPG	Upgrade from Cisco Voice Manager 1.0/1.1 to CVM 2.0 on NT
CWVM-2.0-NT-P1	Cross-bundle Promotion; This part number is available to customers who have purchased RWAN, LMS, SMS, or other qualifying CiscoWorks2000 bundled product. It includes a full copy of CVM

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 CiscoWorks2000 Voice Manager Web site: www.cisco.com/go/cvm

CiscoWorks for Windows

CiscoWorks for 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 the included WhatsUp Gold from Ipswitch, you can also monitor printer, workstations, servers and important network services.
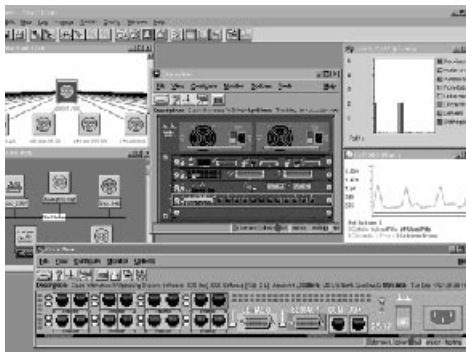
When to Sell

Sell This Product	When a Customer Needs These Features
CiscoWorks for Windows	• 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

Key Features

CiscoWorks for Windows provides the following features when used in conjunction with WhatsUp Gold from Ipswitch (included in the CiscoWorks for Windows 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 e-mail notification of user-defined events

CiscoWorks for Windows Components

CiscoWorks for Windows includes 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 Cisco IOS Software command-line languages or syntax

Specifications

Feature	CiscoWorks for Windows
Hardware Requirements	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
Software Requirements	Windows 95, Windows 98, Windows NT 4.0, or Windows 2000 Netscape 4.61 or Internet Explorer 5.0 for displaying online help Note: Patch available for download from CCO

Distribution Part Numbers and Ordering Information

CiscoWorks for Windows[1]

CWW-5.0	CiscoWorks for Windows, V5.0
CWW-5.0-UPG	CiscoWorks for Windows, V5.0 Upgrade from CiscoWorks for Windows v4.x

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 CiscoWorks for Windows Web site: www.cisco.com/go/cwin

CiscoWorks Blue[1]

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,

When to Sell

Sell This Product	When a Customer Needs These Features
CiscoWorks Blue Internetwork Status Monitor	• 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

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 TCP/IP information in the routed network

• Protocol-level statistics for RSRB, DLSw, and APPN

• Launch capability for other tools like Tivoli NetView, CiscoView, and CiscoWorks2000

• Web browser enabled

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

Specifications

Feature	CiscoWorks Blue Internetwork Status Monitor	CiscoWorks Blue Maps	CiscoWorks Blue SNA View
Platform Compatibility	Tivoli NetView for OS/390 IBM NetView for MVS SOLVE: Netmaster for TCP/IP SOLVE: Netmaster	Solaris HP-UX AIX	Solaris HP-UX AIX
Supported Cisco Products	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
Software Requirements	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 4.3.1 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 5.1 (Tivoli NetView) (optional) VTAM 4.1 or above	AIX Version 4.2.1 or 4.3.1 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 5.1 (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: www.cisco.com/go/cwblue

Cisco Netsys SLM Suite [1]

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.

When to Sell

Sell This Product	When a Customer Needs These Features
Netsys Connectivity Service Manager V.4.1	• Manage and optimize your network's connectivity, security, and reliability—end to end
Netsys Performance Service Manager V.4.1	• End-to-end performance analysis for problem solving, capacity planning, and service-level management

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
Platform Compatibility	Integration with CiscoWorks and CiscoView	Not required
Supported Cisco Products	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: IP, IPX, SNA, AppleTalk, VINES, DECnet 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) Device Support: All Cisco IOS Software-based routers, Catalyst 5000 and 5500 switching products	Same as Connectivity Service Manager plus: 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
Software Requirements	SunOS 4.1.3/4.1.4, Solaris 2.5/2.6, Solaris-J IBM-AIX 4.1.5, HP-UX 10.x CWSI V.1.3 switch support Java-enabled Web browser	Netsys Connectivity Service Manager

Competitive Products

These products have no direct competitors.

For More Information

See the Cisco Netsys SLM Web site: www.cisco.com/go/nslms4

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.

When to Sell

Sell This Product	When a Customer Needs These Features
NetSys Baseliner	• Avoid costly network configuration problems by safely testing configurations offline before committing them to the live network • Network configuration troubleshooting

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

Specifications

Feature	Netsys Baseliner V.4.1
Platform Compatibility	Not required
Supported Cisco Products	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: IP, IPX, SNA, AppleTalk, VINES, DECnet Routing protocols: RIP, IGRP, EIGRP, OSPF, IPX-RIP, SRB, RSRB, DLSw+, BGP, IS-IS (IP) Device support: All Cisco IOS Software-based routers
Software Requirements	Windows NT workstation and server Java-enabled Web browser
Service Number	11

Distribution Part Numbers and Ordering Information

Cisco Netsys Connectivity Tools[1]

BASE-4.0-UNL-NT	Netsys Baseliner 4.0. Unlimited Routers, Win 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.)

For More Information

See the Cisco Netsys Baseliner Web site: www.cisco.com/go/baseliner

Cisco SwitchProbe Series

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
Ethernet SwitchProbes	• Monitoring Catalyst Ethernet switch ports
Fast Ethernet SwitchProbes	• Monitoring Catalyst Fast Ethernet switch ports and Fast Ethernet links, Half Duplex for SPAN and Full Duplex for Catalyst interswitch and server links
Gigabit Ethernet SwitchProbes	• Monitoring Catalyst Gigabit Ethernet switch ports and Gigabit Ethernet network core, enterprise backbone, and server links
Token Ring SwitchProbes	• Monitoring Catalyst Token Ring switch ports
WAN Probes	• Monitoring fractional, full, or channelized T1 and E1 WAN links
T3 WAN Probes	• Monitoring T3 (HSSI) or DS-3/E3 Frame-based WAN links
FDDI SwitchProbes	• Monitoring FDDI rings (single or dual)
ATM Probes	• Monitoring DS-3/E3 or OC-3 ATM links
LAN/WAN SwitchProbes	• Monitoring half-duplex Fast Ethernet switch ports and T1/E1 WAN or DS-3 Frame WAN links

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 (TFTP)

• 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

Specifications

Feature	SwitchProbe
Management	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.
Ports	One serial console port (RS-232-C Type) One remote port (RS-232-C Type)
Interfaces	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 V.35, 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 Tap) E3 ATM interface—DB15 connector (supports connection to E3 Tap) DS-3 Frame interface—DB15 connector (supports connection to DS-3 Tap) E3 Frame interface—DB15 connector (supports connection to E3 Tap) OC-3 ATM interface—OC-3 multimode fiber twin connector
Separately Priced Software Options	Application Response Time (ART) Monitor Option—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 Option—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 Option—Provides detailed traffic statistics on Cisco NetFlow-enabled routers and Catalyst switches with a NetFlow Feature Card (NFFC) Resource Monitor Option—Provides remote monitoring of LAN and WAN system resources via distributed polling and threshold monitoring WAN Decompression Option—Enables Multiport T1/E1 WAN probes to monitor a WAN link comprised of compressed data. The option supports the STAC (hi/fn) and Van Jacobson compression algorithms, and HDLC, Frame Relay and PPP encapsulation types. VLAN Monitor Option—Enables the user to drill drown to obtain host and conversation information on a per-VLAN basis Content Response Time (CRT) Monitor Option—Provides the capability to recognize, classify, and measure the responsiveness of Internet-enabled application traffic for e-business, e-commerce, and ASP environments

Distribution Part Numbers and Ordering Information

SwitchProbes[1]

WS-PB6-1ETH-32	SwitchProbe, 1-port Ethernet, 32 MB
WS-PB6-2ETH-32	SwitchProbe, 2-port Ethernet, 32 MB
WS-PB8-4ETH-128	SwitchProbe, 4-port Ethernet, 128 MB
WS-PB8-8ETH-128	SwitchProbe, 8-port Ethernet, 128 MB
WS-PB6-1TR-32	SwitchProbe, 1-port Token Ring, 32 MB
WS-PB8-SFDDIET-128	SwitchProbe, FDDI (SAS) and Ethernet, 128 MB
WS-PB8-DFDDIET-128	SwitchProbe, FDDI (DAS) and Ethernet, 128 MB
WS-PB8-1FEHDTX-128	SwitchProbe, 1-port Fast Ethernet, HDX, 100BaseTX, 128 MB
WS-PB8-2FEHDTX-128	SwitchProbe, 2-port Fast Ethernet, HDX, 100BaseTX, 128 MB
WS-PB8-1FEFDTX-128	SwitchProbe, 1-port Fast Ethernet, FDX, 100BaseTX, 128 MB
WS-PB8-4FE-TX-128	SwitchProbe, 4-port Fast Ethernet, 100BaseTX, 128 MB
WS-PB8-1FEHDFX-128	SwitchProbe, 1-port Fast Ethernet, HDX, 100BaseFX, 128 MB
WS-PB8-2FEHDFX-128	SwitchProbe, 2-port Fast Ethernet, HDX, 100BaseFX, 128 MB
WS-PB8-1FEFDFX-128	SwitchProbe, 1-port Fast Ethernet, FDX, 100BaseFX, 128 MB
WS-PB8-4FE-FX-128	SwitchProbe, 4-port Fast Ethernet, 100BaseFX, 128 MB
WS-PB8-2GESX-M-128	SwitchProbe, 2-port Gigabit Ethernet, 1000BaseSX, Multi-Mode, 128 MB
WS-PB8-2GELX-M-128	SwitchProbe, 2-port Gigabit Ethernet, 1000BaseLX, Multi-Mode, 128 MB
WS-PB8-2GELX-S-128	SwitchProbe, 2-port Gigabit Ethernet, 1000BaseLX, Single-Mode, 128 MB
WS-PB6-1WANETH-32	SwitchProbe, 1-port T1/E1 WAN and Ethernet, 32 MB
WS-PB8-2WANETH-128	SwitchProbe, 2-port T1/E1 WAN and Ethernet, 128 MB
WS-PB8-4WANETH-128	SwitchProbe, 4-port T1/E1 WAN and Ethernet, 128 MB
WS-PB6-1WANTR-32	SwitchProbe, 1-port T1/E1 WAN and Token Ring, 32 MB

Cisco SwitchProbe Series

WS-PB8-2T1DETH-128	SwitchProbe, 2-port T1/D WAN and Ethernet, 128 MB
WS-PB8-4T1DETH-128	SwitchProbe, 4-port T1/D WAN and Ethernet, 128 MB
WS-PB8-2E1DETH-128	SwitchProbe, 2-port E1/D WAN and Ethernet, 128 MB
WS-PB8-4E1DETH-128	SwitchProbe, 4-port E1/D WAN and Ethernet, 128 MB
WS-PB8-2CHT1ET-128	SwitchProbe, 2-port channelized T1/D WAN and Ethernet, 128 MB
WS-PB8-2CHE1ET-128	SwitchProbe, 2-port channelized E1/D WAN and Ethernet, 128 MB
WS-PB8-HSSIETH-128	SwitchProbe, HSSI and Ethernet, 128 MB
WS-PB8-DS3FRM-128	SwitchProbe, DS-3 Frame WAN and Ethernet, 128 MB
WS-PB8-E3FRM-128	SwitchProbe, E3 Frame WAN and Ethernet, 128 MB
WS-PB8-ATM3ETH-128	SwitchProbe, ATM (OC-3) and Ethernet, 128 MB
WS-PB8-ATMDSET-128	SwitchProbe, ATM (DS-3) and Ethernet, 128 MB
WS-PB8-E3ATM-128	SwitchProbe, ATM (E3) and Ethernet, 128 MB
WS-PB9-001-ET-128	SwitchProbe, 1-port 100BaseTX, HDX & 1-port T1/E1 WAN, 128 MB
WS-PB9-002-ET-128	SwitchProbe, 1-port 100BaseTX, HDX & 2-port T1/E1 WAN, 128 MB
WS-PB9-003-ET-128	SwitchProbe, 1-port 100BaseTX, HDX & 3-port T1/E1 WAN, 128 MB
WS-PB9-011-ET-128	SwitchProbe, 1-port 100BaseTX, HDX & 1-port DS-3 Frame WAN, 128 MB

SwitchProbe Software 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-FEFDTAP-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-WDC	WAN decompression option
WS-PB-VLAN	VLAN monitor option
WS-PB-CRT	Content Response Time (CRT) 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.)

For More Information

See the Cisco SwitchProbe Web site: www.cisco.com/go/switchprobe

Cisco Element Management Framework (EMF)[1]

Cisco Element Management Framework (CEMF) is 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, so service providers can easily 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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Element Management Framework	• 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.

Key Features

- Cisco Element Management Framework (CEMF):
  - Manageability—highly scalable framework supports carrier-class element managers across Cisco's service-provider product lines
  - Scalability—small pilot or trial networks can be deployed and then expanded as the network and management requirements grow
  - Integration—open system designed to integrate with third-party product and proprietary operational support systems
  - Extensibility—new management applications can be developed quickly using configuration and developers toolkits
- Cisco EMF Event Manager:
  - Provides concise, tailored scoreboards of element status and powerful filtering and normalization of events from different sources; can be used on its own or as a preprocessor for Cisco Information Center (CIC)
- CEMF Event Manager:
  - An 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 enables users to capture events that may not be proactively indicated by the network
  - Creates a model of the network and checks for more than 100 common, yet difficult-to-isolate, configuration problems

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

Specifications

Feature	Cisco Element Management Framework (CEMF)
Platform Compatibility	Event Manager needs CEMF
Supported Cisco Products	Cisco DSL Manager (CDM): Cisco 6400 Service Connection Manager (SCM)
Software Requirements	Sun Solaris 2.6 Event Manager requires CEMF

For More Information

See more information about Network and Element Management at:
www.cisco.com/go/neman

See more specific information on Cisco EFM and the Cisco Event Manager at:
www.cisco.com/go/emf

Cisco Info Center[1]

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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Info Center	• 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.

Key Features

- Simplified operations—Integrates alarms and events from multiple technologies and vendors into a single environment

- Scalable and highly distributable 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

- Enhanced service offering—Supports Web and Java-based service-level monitoring applications developed by service providers

- Powerful administrative interface—Highly customizable to suit a network manager's specific viewing requirements

- Robust trap mechanism—Facilitates guaranteed trap delivery to ensure receipt and processing of every trap

- Highly customizable event correlation engine—Empowers operators to interpret data, and event-triggered actions can be configured to respond to certain behaviors automatically

- Information overload—Can consolidate, de-duplicate, partition, and correlate information so core fault data is easy to interpret

- Multivendor networks—Can receive multiple data streams, independent of the underlying network element technology, providing a comprehensive centralized fault management center

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

Specifications

Feature	Cisco Info Center
Platform Compatibility	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.

For More Information

See the Cisco Info Center Web site: www.cisco.com/go/cic

Cisco Provisioning Center[1]

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.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Provisioning Center	• 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 Rela.y, ATM, Internet access, data-link switching (DSL), IP-virtual private network (VPN), quality of service (QoS) and other network services.

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

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

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

For More Information

See the Cisco Provisioning Center Web site: www.cisco.com/go/cpc

Cisco QoS Policy Manager

Cisco QoS Policy Manager (QPM), is a GUI-based software package that enables network administrators to reserve or prioritize bandwidth for critical applications through centralized policy control and automated policy deployment. An integral part of Cisco Content Networking, an intelligent network architecture that dynamically recognizes Internet business applications, QPM provides differentiated services to Web-based applications, voice traffic, Web hosting, and business-critical applications. QPM also features a QoS COPS module.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco QoS Policy Manager	• Specify policies that establish differentiated traffic classes for applications • Create powerful rules-based policies that combine static and dynamic port applications and host system traffic filters • Utilize QoS Policy Manager's services, including congestion management, congestion avoidance, and traffic-shaping • Efficiently translate policies to specific QoS configuration commands, ensuring policy consistency across policy domains • Validate policies prior to deploying them to the network • Quickly and reliably distribute policies to LAN and WAN policy domains • Generate Web-based reports on QoS policies deployed in the network

Key Features

- Centralized policy control—Provides an end-to-end interface to devices that eliminates for need for device-by-device configuration and modification, and greatly simplifies the deployment of QoS for LAN and WAN routing and switching equipment

- Differentiated service for application traffic—Simplifies configuration of traffic classification, bandwidth reservation, and QoS enforcement policies used to achieve service-level differentiation in Cisco devices

- Enhanced application-level classification—Supports the integrated packet inspection engine (NBAR) within Cisco IOS Software that extends IP packet classification to include content-based application signaling, Web URLs, and dynamic protocols

- Voice QoS Configuration—Rapid configuration of advanced voice QoS features provides absolute priority to voice traffic

- Guaranteed network service—Configuration of Resource Reservation Protocol (RSVP) signaling across the enterprise network for throughput and latency guarantees needed by voice, video, audio, and other real-time applications

- Policy domain configuration—Intelligent interface grouping allows you to selectively enable QoS mechanisms for LAN or WAN policy domains

- Comprehensive QoS feature support—Extensive congestion management, congestion avoidance, and traffic shaping services leveraging QoS features in Cisco IOS Software and device mechanisms

Specifications

Feature	Cisco QoS Policy Manager
Hardware Requirements	Pentium 266 MHz processor or better recommended Works on a single or multiple processor machines 32 MB RAM (64 MB or more recommended) 40 MB or more hard disk space CD-ROM drive for installation

Operating System Requirements	For complete QoS Policy Manager:
	• Windows NT Workstation or Server with Service Pack 4 or higher
	• TCP/IP and Microsoft Networking must be running
	For Client only version:
	• Any of these operating systems running TCP/IP and Microsoft Networking:
	    – Windows 95 with the Year 2000 upgrade
	    – Windows 98
	    – Windows NT Workstation or Server with Service Pack 4 or Higher

Browser Version	Netscape Navigator Version 4.0 or higher or Microsoft Internet Explorer Version 4.0 or higher
Supported Cisco Devices	Cisco 2500, 2600, 3600, 4000, 4500, 4700, 7100, 7200, and 7500 series routers, the Catalyst 5000 and 6000 switch family, the router switch module (RSM) for the Catalyst 5000, the Cisco 8510 and 8540, and LocalDirector V.3.1.1
Supported Cisco IOS® Software Versions	Cisco IOS Software releases: 11.1cc, 11.2, 11.3, 12.0, 12.0(5), 12.0(5)T, 12.0(5)XE, and 12.0(7)T

Distribution Part Numbers and Ordering Information

Cisco QoS Policy Manager[1]

CWQPM-2.0-NT	Cisco QoS Policy Manager 2.0 for Windows NT; includes OPM-PRO & OPM-COPS 2.0

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.)

For More Information

See the Cisco QoS Policy Manager Web site: www.cisco.com/go/qpm

Cisco Universal Gateway Manager (UGM)[1]

The Cisco Universal Gateway Manager (UGM) is a next-generation element management system offering robust, scalable, carrier-class capabilities for the Cisco AS5000 series of Universal Gateways. Providing comprehensive FCAPS (fault, configuration, accounting/inventory, performance, security) capabilities, the UGM enables operators to effectively configure, manage, and maintain dial access networks. The Cisco UGM facilitates the rapid deployment of new services and provides quick and effective network diagnostics to meet the rigorous demands of today's fast-moving marketplace.

When to Sell

Sell This Product	When a Customer Needs These Features
Cisco Universal Gateway Manager (UGM)	• To provide maintenance and diagnostics for AS5000 networks • For collection and display of AS5000 alarms • When IOS, DSP and configuration files need to be managed and upgraded on the network element • For collection and display of performance statistics • To provide a map view of AS5000 access network

Key Features

• Next-generation GUI based element manager for the Cisco AS5000 series of Universal Gateways

• Provides FCAPS capability for dial networks

• Supports multi-user access

• Enables discovery, configuration, and maintenance of network devices

• Based on Cisco Element Management Framework (CEMF)

• Comprehensive suite of management tools

• Enables network deployment, maintenance, and troubleshooting

Specifications

Feature	Cisco Universal Gateway Manager (UGM)
Platform Compatibility	CEMF 3.0.4
Requirements	Server: Sun Ultra 60 CPU: 2X360 MHz or faster OS: Solaris 2.6 Memory: 1 GB RAM Disk: 2x9 GB Swap Space: 2 GB Monitor: 17-in. color or better Graphics card: 24-bit
Supported Cisco Devices	Cisco AS5350 Cisco AS5400 Cisco AS5800

For More Information

See the Cisco Universal Gateway Manager Web site: www.cisco.com/go/ugm

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