

Cisco 1700 Series Modular Access Routers

Cisco 1700 Series Modular Access Routers: Solutions for E-Business

The Cisco 1700 Series of modular access routers are designed and priced to provide a cost-effective integrated e-Business platform for small and medium-sized businesses and enterprise small branch offices. They deliver high-speed network access, comprehensive security features, and multiservice data/voice/video/fax integration to meet the most demanding e-Business requirements. Within the Cisco 1700 Series, Cisco 1720 routers provide flexible, high-performance data access, and Cisco 1751 routers are optimized for both voice and data traffic, providing a simple and cost-effective path to multiservice networking today or in the future.

The E-Business Competitive Advantage

Today's businesses are recognizing that e-Business success relies on more than simply using e-mail or putting up a Web site. Companies that want to streamline operations and reduce costs while gaining the competitive advantages of the Internet need to integrate e-Business methods into their everyday business practices by adopting applications such as supply-chain management, Web-based transaction processing, and unified messaging. These kinds of e-Business tools improve communications between employees, customers, and suppliers; increase productivity and efficiency; and enhance customer satisfaction to make businesses more competitive. The effectiveness of e-Business solutions depends on the performance and capabilities of the access solution.

To fully realize all the competitive advantages of e-Business, companies need a flexible and affordable access solution that supports a full range of technologies and applications. The Cisco 1700 Series Modular Access Routers are optimized to provide comprehensive e-Business features such as virtual private networks (VPNs), security firewalls, and multiservice integration of data, voice, video, and fax. The routers deliver high-speed WAN connectivity for communications over the Internet and between remote office sites.



The 1700 Series E-Business Features

The Cisco 1700 Series supports the capabilities that businesses need today and provides the flexibility and feature set to adapt and grow as business requirements evolve. For a comprehensive list of Cisco 1700 Series Features, please see Table 1.

Table 1 Cisco 1720 and Cisco 1751 Features

Features	Cisco 1720	Cisco 1751	Cisco 1751-V
WAN/LAN Access			
Frame Relay	X	X	X
Leased Line	X	X	X
Broadband DSL	X	X	X
IEEE 802.1Q VLAN Support		X	X
ISDN	X	X	X
Dual Ethernet with Ethernet WIC	X	X	X
Dual BRI	X	X	X
Security			
Firewall (Stateful)	X	X	X
Hardware-Assisted VPN Encryption (Optional)	X	X	X
IPSec 3DES Encryption	X	X	X
Multiservice Capability			
Multiservice Support: Voice over IP (VoIP)/Voice over Frame Relay (VoFR)		X	X
Analog Voice		X	X
Digital Voice		X	X
Simplified Network Management and Deployment			
Integrated Network Device (Firewall, VPN, Router, Voice All-in-One Solution)	X	X	X
Cisco ConfigMaker (GUI-Based Configuration Tool)	X	X	X
CiscoWorks Windows	X	X	X
CiscoWorks2000	X	X	X
Physical Design			
Auxiliary Port (Async-up to 115.2 Kbps)	X	X	X
Internal Expansion Slot	X	X	X
Number of Network Card Slots	2 WIC	2 VIC/WIC 1 VIC	2 VIC/WIC 1 VIC
Memory (Default)	8 MB Flash/ 32 MB DRAM	16 MB Flash/ 32 MB DRAM	32 MB Flash/ 64 MB DRAM
Memory (Maximum) Flash/DRAM	16 MB Flash/ 48 MB DRAM	16 MB Flash/ 96 MB DRAM	32 MB Flash/ 128 MB DRAM

To cost-effectively support e-Business requirements, the Cisco 1700 Series delivers:

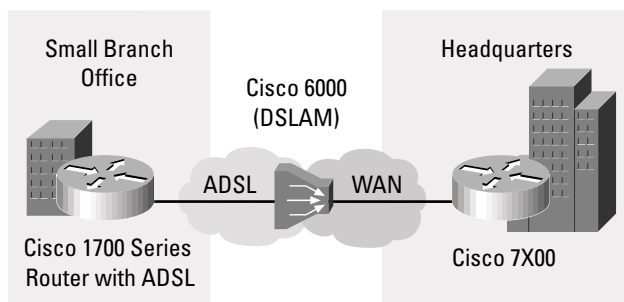
- High-speed network access
- Comprehensive security features
- Multiservice data/voice/video/fax integration (Cisco 1751 only)

High-Speed Network Access

The Cisco 1700 Series routers support a wide variety of WAN technologies to meet the Internet and remote-office connectivity needs of today's e-Businesses. These include broadband digital subscriber line (DSL), Integrated Services Digital Network (ISDN), asynchronous serial and synchronous serial such as T1/E1 leased lines, Frame Relay, Switched 56, X.25, and Switched Multimegabit Data Service (SMDS).

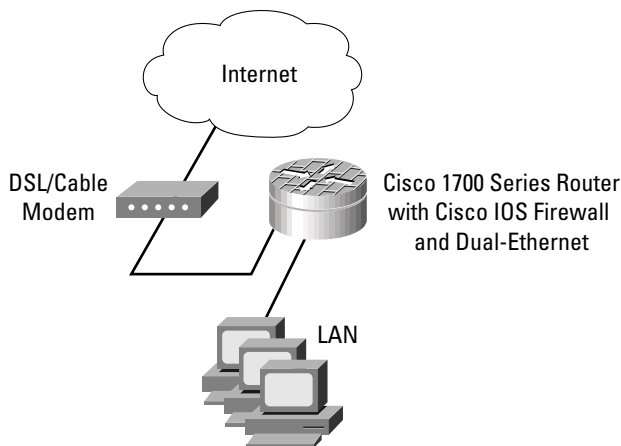
By supporting broadband DSL, the Cisco 1700 Series allows small and medium-sized businesses and enterprise small branch offices to take advantage of this secure, cost-effective, high-speed access solution (Figure 1). The Cisco 1700 Series gives DSL users business-quality voice (including VoIP) and industry-leading security, reliability, and quality of service (QoS) through Cisco IOS® Software. The routers' second WAN link can be used for WAN backup or load balancing between service providers.

Figure 1 The Cisco 1700 Series router, equipped with the ADSL WAN interface card (WIC), enables e-Businesses and small branch offices to reap the benefits of DSL.



When equipped with an optional Ethernet WIC, the Cisco 1700 Series supports dual Ethernet configuration, enabling deployment with an external broadband modem (such as DSL, cable modem, or wireless modem)—often supplied by a service provider as a demarcation point (Figure 2).

Figure 2 The Cisco 1700 Series Deployed with an Ethernet WIC and an External DSL or Cable Modem



Comprehensive Security

To successfully participate in e-Business, companies must deploy robust network security measures. E-Business applications often involve storing and transmitting sensitive data, such as customer credit information, and this data can be an attractive target for hackers and other malicious agents. To keep networks secure and protect sensitive information, businesses deploy a range of security technologies, including firewalls, VPNs, and intrusion detection systems (IDSs).

Cisco IOS Software is the industry's widely accepted technology for the Internet and private networks. Based on Cisco IOS security technology, the Cisco 1700 Series routers provide powerful, integrated firewall, VPN, and IDS capabilities. As new security technologies are developed, they often can be simply uploaded to a Cisco 1700 Series router—there is no need for costly hardware replacements.

Firewall

Just as physical businesses require security measures for protection against theft of physical assets, an e-business requires tools to maintain the security and confidentiality of its intellectual property. Firewalls provide this protection by preventing unauthorized users from accessing confidential corporate data.

The Cisco 1700 Series routers offer integrated security features, including firewall functionality as an optional Cisco IOS Software feature. By deploying firewall functionality, customers need not purchase or manage multiple devices, which simplifies network management and reduces capital costs.

Cisco IOS Software firewall security features include access control lists (ACLs), user authentication, authorization, and accounting (such as Password Authentication Protocol/Challenge Handshake Authentication Protocol [PAP/CHAP], TACACS+, and RADIUS). These security features provide the optimal level of firewall protection to e-Business customers.

Virtual Private Networks

The Cisco 1700 Series is part of the end-to-end Cisco virtual private network (VPN) solution. VPNs create secure tunnel connections via the Internet to connect geographically dispersed offices, business partners, and remote users while providing security, traffic prioritization, management, and reliability equal to that of private networks. VPNs significantly reduce WAN costs and can be set up and torn down rapidly to provide secure extranet links to customers, business partners, and remote employees.

By supporting industry standards such as Internet Protocol Security (IPSec), Layer 2 Tunneling Protocol (L2TP), data encryption standard (DES), and 3DES, Cisco 1700 Series routers deliver robust VPN solutions to ensure data privacy, integrity, and authenticity.

The optional VPN Hardware Encryption Module for Cisco 1700 Series routers further optimizes VPN encryption performance. By offloading encryption tasks from the route processor, the VPN module frees it to handle other operations. The module accelerates the rate at which encryption occurs, speeding the process of transmitting secure data. This can be a critical factor when using 3DES encryption.

Intrusion Detection

Preventing unauthorized users from entering the corporate network is an essential role of any security system. A network-based IDS provides around-the-clock network surveillance, analyzing packets and data streams and searching for signs of unauthorized activity. Once it identifies unauthorized activity, the IDS can generate alarms to alert network managers for immediate response and corrective action.

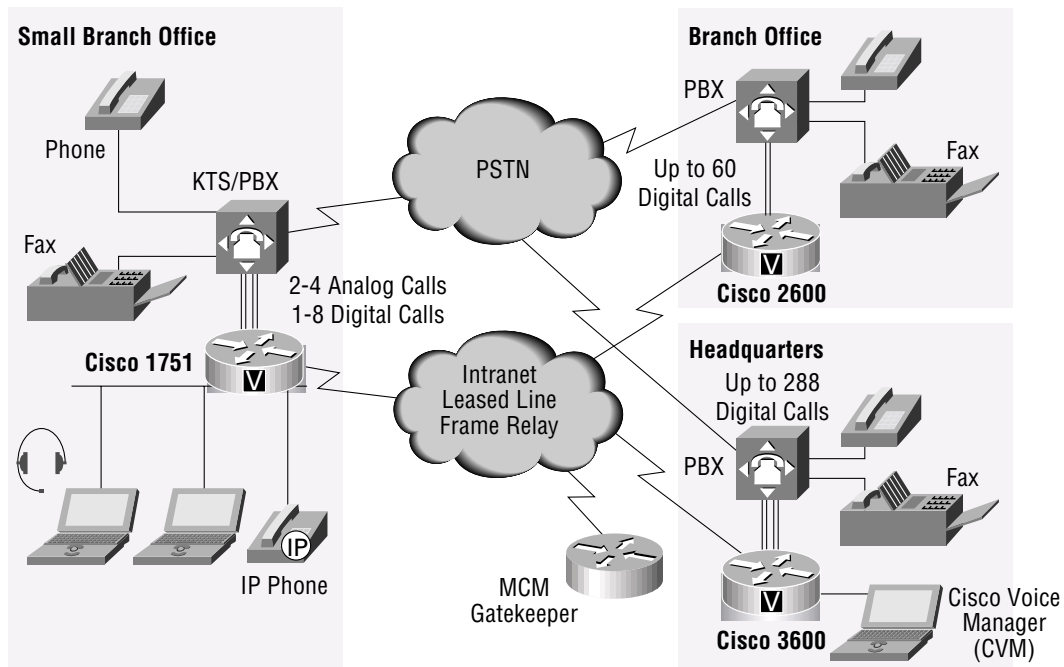
Through Cisco IOS Software, Cisco 1700 Series routers can provide customers with an integrated IDS solution. With this feature deployed, e-Businesses can benefit from continuous security monitoring to detect unauthorized activity that may occur over the Internet or other unsecured networks.

Multiservice Data/Voice/Video/Fax Integration

The Cisco 1751 provides a cost-effective way to extend multiservice networks to branch offices. Using the sophisticated QoS features of Cisco IOS Software, the Cisco 1751 allows voice traffic to be digitized, encapsulated in data packets, and prioritized over other data traffic. Data/voice/video/fax integration using IP protocols over the Internet enables administrators to reduce long-distance toll charges between offices and support voice-enabled desktop applications such as integrated messaging and packet video.

The Cisco 1751 supports analog and digital voice communications while working with the existing telephone infrastructure—such as phones, fax machines, key telephone systems (KTSs), and private branch exchanges (PBXs)—thus minimizing capital costs by reducing the need for additional equipment expenditure. See Figure 3.

Figure 3 Multiservice Data/Voice/Fax Integration



Cisco 1700 Series E-Business Benefits

The Cisco 1700 Series delivers the following benefits to help e-Businesses gain competitive advantage:

- Low cost of ownership through integration of multiple network functions
- Ease of installation and management
- Flexibility and modularity to adapt easily to changing LAN and WAN access requirements
- Protection for current investments, even as demands for new services emerge

Low Cost of Ownership—The Cisco 1700 Series is designed and priced to add maximum value to e-Business networks. In order to reduce overall solution costs, the Cisco 1720 and Cisco 1751 routers are configured with enough default memory to deploy feature rich Cisco IOS technology. By integrating multiple functions such as access router, firewall, encryption, ISDN Network Termination 1 (NT1), and data service unit/channel service unit (CSU/CSU) into a single device, the Cisco 1700 Series helps reduce deployment and management time and costs. In addition, the series supports remote configuration, monitoring, and troubleshooting simplifying ongoing support of enterprise small branch offices from a central site.

Ease of Installation and Management—Cisco 1700 Series routers support a range of network installation and management tools:

- *Cisco ConfigMaker*—This Microsoft Windows-based wizard is designed to configure a small network of Cisco routers, switches, hubs, and other network devices. This tool makes it easy to configure value-add security features such as the Cisco IOS Firewall Feature Set; establish VPN policies, including QoS; and configure the Dynamic Host Configuration Protocol (DHCP) server.
- *CiscoView*—This graphical user interface (GUI)-based device management software application for UNIX and Windows platforms provides dynamic status, statistics, and comprehensive configuration information.

- *Cisco Works 2000*—This industry-leading, Web-based network management suite simplifies tasks such as network inventory management and device change, rapid software image deployment, and troubleshooting from a central location.
- *Cisco Secure Policy Manager*—This Windows NT-based application allows users to define, configure, distribute, enforce, and audit network-wide security policies, simplifying Cisco IOS firewalls, VPNs, and IDS deployments.
- *VPN Solution Center 2.0*—This VPN management tool for service providers delivers IPSec and Multiprotocol Label Switching (MPLS) VPNs, giving providers the capability to plan, provision, operate, and bill for VPN services.
- *QoS Policy Manager*—This tool offers the ability to define QoS policies across multiple devices, easing the task of creating and configuring QoS policies for users and applications.
- *Cisco Voice Manager*—This application enables configuration and provisioning of voice ports, and creation and modification of dial plans on voice-enabled Cisco routers for VoIP, VoFR, and VoATM network deployments.

Flexibility—The modular Cisco 1700 Series easily adapts to fit the needs of companies evolving to e-Businesses. Interchangeable WAN interface cards (WICs) and voice interface cards (VICs) enable easy additions or changes in WAN technologies without a forklift upgrade of an entire platform. The wide range of available WIC and VIC solutions gives customers choice when implementing WAN and voice technologies, enabling them to begin with a solution that meets current needs and expand functionality as business demands grow. WAN technologies supported include broadband DSL, ISDN, leased line, and Frame Relay. Voice technologies supported are VoIP, VoFR, and VoATM.

The Cisco 1700 Series supports dual Ethernet capability when deployed with an optional Ethernet WIC, giving users the flexibility to use broadband modems or create secure demilitarized zone (DMZ) LANs.

Investment Protection—The combination of the Cisco 1700 RISC architecture, Cisco IOS Software, modular interface slots, and an internal expansion slot provide solid investment protection for easy migration to Internet-based applications today and in the future.

The ability to use the same field-upgradable WICs and VICs across the Cisco 1700, 2600, and 3600 access router platforms reduces requirements for spare parts inventory and support training. In addition, the integrated, autosensing 10/100 Fast Ethernet port enables easy migration to high-speed local networks. For a complete description of platform features and benefits see Table 2.

Table 2 Key Features and Benefits of the Cisco 1700 Series

Feature	Benefits
Flexibility	
Full Cisco IOS Software support, including multiprotocol routing (IP, IPX, AppleTalk, IBM/SNA) and bridging	<ul style="list-style-type: none"> • Provides the industry's most robust, scalable, and feature-rich internetworking software support using the de facto standard networking software for the Internet and private WANs • Part of the Cisco end-to-end network solution
Integrated Voice and Data Networking	
Cisco 1751 router chassis accepts both WAN and voice interface cards	<ul style="list-style-type: none"> • Reduces long-distance toll charges by allowing the data network to carry interoffice voice and fax traffic • Works with existing handsets, key units, and PBXs, eliminating the need for a costly phone-equipment upgrade • Adds flexibility and investment protection
Modular Architecture	
WAN interface cards are shared with Cisco 1600, 1700, 2600, and 3600 series routers	<ul style="list-style-type: none"> • Reduce cost of maintaining inventory • Lower training costs for support personnel • Protect investments through re-use on various platforms
Autosensing 10/100 Fast Ethernet	<ul style="list-style-type: none"> • Simplifies migration to Fast Ethernet performance in the office

Feature	Benefits
Expansion slot on motherboard	<ul style="list-style-type: none"> • Allows expandability to support hardware-assisted encryption at T1/E1 speeds • Allows support for future technologies
Dual DSP Slots (Cisco 1751 Only)	<ul style="list-style-type: none"> • Allow expandability to support additional voice channels with future high-density voice cards
Security	
The Cisco IOS® Firewall Feature Set	<ul style="list-style-type: none"> • Allows users to access the Internet with secure, per-application-based, dynamic access control, while preventing unauthorized Internet users from accessing the internal LAN • Includes context-based access control for dynamic firewall filtering, denial-of-service detection and prevention, Java blocking, real-time alerts, intrusion detection system (IDS), and encryption
IPSec DES and 3DES	<ul style="list-style-type: none"> • Enable creation of VPNs by providing industry-standard data privacy, integrity, and authenticity as data traverses the Internet or a shared public network • Supports up to 168-bit encryption (3DES)
Hardware-based encryption using optional VPN module	<ul style="list-style-type: none"> • Supports wire-speed encryption up to T1/E1 speeds
Device Authentication and Key Management	
IKE, X.509v3 digital certification, and support for certificate enrollment protocol (CEP) with certification authorities such as Verisign and Entrust	<ul style="list-style-type: none"> • Ensure proper identity and authenticity of devices and data • Enable scalability to very large IPSec networks through automated key management
User Authentication	
PAP/CHAP, RADIUS, TACACS+	<ul style="list-style-type: none"> • Support all leading user identity verification schemes
VPN Tunneling	
IPSec, GRE, L2TP, L2F	<ul style="list-style-type: none"> • Offer choice of standards-based tunneling methods to create VPNs for IP and non-IP traffic • Allow standards-based IPSec or L2TP client to interoperate with Cisco IOS tunneling technologies • Fully interoperable with public certificate authorities and IPSec standards-based products • Part of the scalable Cisco end-to-end VPN solution portfolio
Management	
IEEE 802.1Q VLAN support (Cisco 1751 only)	<ul style="list-style-type: none"> • VLANs enable efficient traffic separation, provide better bandwidth utilization, and alleviate scaling issues by logically segmenting the physical LAN infrastructure into different subnets
Cisco 1700 Series routers are manageable via SNMP (CiscoView, CiscoWorks2000), Telnet, and console port	<ul style="list-style-type: none"> • Allow central monitoring, configuration, and diagnostics for all functions integrated in the Cisco 1751 router, reducing management time and costs
Ease of Use and Installation	
Cisco ConfigMaker, SETUP configuration utility, AutoInstall, color-coded ports/cables, and LED status indicators	<ul style="list-style-type: none"> • Simplify and reduce deployment time and costs with graphical LAN/VPN policy configurator; command-line, context-sensitive configuration questions; and straightforward cabling • LEDs allows quick diagnostics and troubleshooting
Network Address Translation (NAT) and Easy IP	<ul style="list-style-type: none"> • Simplify deployment and reduce Internet access costs
QoS	
CAR, Policy Routing, WFQ, PQ/CBWFQ, GTS, RSVP, DSCP	<ul style="list-style-type: none"> • Allocate WAN bandwidth to priority applications for improved performance

Feature

Benefits

Reliability and Scalability

Cisco IOS Software, dial-on-demand routing, dual-bank Flash memory, scalable routing protocols such as OSPF, EIGRP, and HSRP

- Improve network reliability and enables scalability to large networks

Broadband Connectivity Options

ADSL and cable connectivity deliver business-class broadband access

- Leverage broadband access technologies such as cable and DSL to increase WAN connectivity speeds and reduce WAN access costs

Device Integration

Integrated router, voice gateway, firewall, encryption, VPN tunnel server, DSU/CSU, and NT1 in a single device

- Reduce costs and simplifies management

Cisco IOS Technology

Cisco IOS® software is an innovative and feature-rich network systems software that gives networks intelligence and agility. It allows the effective deployment of new applications and services quickly and without disruption—applications and services that enable your customer's business to generate revenue, reduce costs, and improve customer service.

Service and Support

Leading-edge technology deserves leading-edge support. Service and support for the Cisco 1700 Series is available on a one-time or annual contract basis. Support options range from help desk assistance to proactive, onsite consultation. Support contracts include:

- Major Cisco IOS Software updates in protocol, security, bandwidth, and feature improvements
- Full access rights to Cisco.com for technical assistance, e-commerce, and product information
- 24/7 access to the industry's largest dedicated technical support staff

A support contract maximizes the value of your technology investment throughout its life cycle, ensuring optimum performance and availability.

How to Order

To order a Cisco 1700 Series Modular Access Router for your e-Business solutions, contact your local Cisco reseller. To find the one nearest you, visit the Cisco Reseller Locator at <http://www.cisco.com/public/partnerlocator.shtml>.



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