
Cisco 826, 827H, 827-4V, and 828 ADSL and G.SHDSL Routers

Product Overview

The Cisco 820 Series of business-class DSL routers provide business-class functionality for small businesses and corporate teleworkers through the power of Cisco IOS technology. They enable service providers and resellers to increase service revenue by supporting features for stateful firewalls and VPNs, integrated toll-quality voice, and differentiated classes of service. These value-added features, along with the manageability and proven reliability of Cisco IOS technology, provide the mission-critical networking that businesses require.

Part of the award-winning Cisco 800 series, the Cisco 826, 827H, and 828 DSL routers provide ADSL or G.SHDSL access with business class features. With the software-upgradable platform of the Cisco 820 series, service providers and resellers can increase revenue by offering DSL services today and provide value-added services as customer technology needs grow. The Cisco 827H and Cisco 827-4V support ADSL over POTS (Plain Old Telephone Service) lines while the Cisco 826 supports asymmetric digital subscriber line (ADSL) over ISDN for regions that have a substantial install base of ISDN customers. The Cisco 827H and Cisco 826 are data only models while the Cisco 827-4V supports Voice over IP and Voice over ATM. The Cisco 828 is a data only model supporting G.SHDSL which is standards based symmetrical DSL technology.

The 820 series routers are ideal for up to 20 users in a small office or as an enterprise telecommuting solution, supporting scalable, secure, quality, and proven business solutions such as:

- Business-class security with support for stateful firewalls and IPSec VPNs
- Toll quality voice (Cisco 827-4V)
- Differentiated Classes of Service through Quality of Service features
- Support for Service Level Agreements

Because the Cisco 820 series routers are based on Cisco IOS technology, service providers and resellers can leverage their training and investments in Cisco IOS software to reduce their overall costs of doing business. With key management and troubleshooting features, service providers and resellers can cost-effectively deploy and manage the Cisco 820 routers at the business customers' premises, thanks to the following advantages:

- Cisco IOS manageability, including interactive diagnostics/debug features
- Familiar Cisco IOS command-line interface (CLI)
- Proven reliability

Key Features and Benefits

Table 18-178: Features and Benefits for Cisco 820 DSL Routers

Feature	Benefit
Business Class Security	
PAP, CHAP, MS-CHAP, and ACLs	Protect network from unauthorized access
Route and Router Authentication	Accepts routing table updates from only known routers, which ensures no corrupt information from unknown sources is received
NAT/PAT	Hides internal IP addresses from external networks Prevents certain attacks from outside networks on internal hosts
SSH1	Provides strong encryption for telnet sessions

Feature	Benefit
Stateful Inspection Firewall with Cisco IOS Firewall Feature Set	<p>Offers internal users secure, per-application dynamic access control (stateful inspection) for all traffic across perimeters</p> <p>Defends and protects against denial-of-service attacks</p> <p>Checks packet headers, dropping suspicious packets</p> <p>Protects against unidentified, malicious Java applets</p> <p>Provides Real Time alerts</p> <p>Details transactions for reporting on a per-application, per-feature basis</p>
VPNs with IPSec DES & 3DES Encryption	<p>Ensures confidential data integrity and authenticity of origin by using standards-based encryption</p> <p>Provides encryption for all users on the LAN without configuring individual PCs with client software.</p> <p>Cisco Easy VPN simplifies the set up of remote sites in VPN networks.</p>
Integrated Toll Quality Voice/Data (Cisco 827-4V Only)	
Four Analog Telephone (FXS) Interfaces	Provides toll quality, award winning derived voice over IP and software-upgradeable to Voice over ATM/AAL2 (CYQ3 '00).
Standards-Based H.323 (H.225) signalling	Allows an ecosystem of third party vendors to develop applications for a complete solution; allows rapid low-cost deployment of Voice over IP
DSPs and Voice Compression Codecs G.711, G.729, G.723.1	Provides hardware based compressed voice to fit significantly more voice lines over a single copper pair without breaking to the end-to-end delay budget.
Differentiated Classes of Service	
Quality of Service (QoS)/ Low Latency Queuing (LLQ)	<p>Ensures consistent response times for multiple applications by allocating bandwidth intelligently</p> <p>Allows for classification of applications and gives the most important applications priority use of the WAN line</p>
ATM traffic UBR, VBRnrt, VBRrt and CBR with per VC queuing and traffic shaping	Ensures QoS guarantees for real-time traffic, with ability to send traffic over the appropriate Virtual Circuit to provide ATM level shaping and ensure that no head of line blocking can happen between circuits of different or equal traffic-classes.
SA Agent	Provides a way to measure statistics used in analyzing Service Level Agreements (SLAs)
Choice of Encapsulation	
PPP over Ethernet, PPP over ATM and RFC 1483	Ensures compatibility with existing network
Lower Cost of Operations	
Cisco IOS interactive debug features	Allows service providers to remotely or locally diagnose network problems in detail (e.g. via telnet or terminal connection into the router)
Cisco IOS CLI	Allows customers to leverage existing knowledge of Cisco IOS CLI for easier installation and manageability without additional training
Simplified Set Up, Installation, and Management	
Cisco Router Web Set Up tool	Allows non technical users without knowledge of Cisco IOS software to set up the router with a web browser.
NAT/PAT	<p>Lets businesses and service providers conserve valuable IP address space</p> <p>Reduces time and costs by reducing IP address management</p>
Cisco IOS Easy IP	Enables true mobility-client IP addresses to be transparently configured via the Cisco IOS Dynamic Host Control Protocol (DHCP) server each time a client powers up
Color-coded Ports and Cables and Quick Start Reference Guide	<p>Helps users make proper connections</p> <p>Provides easy-to-follow installation instructions</p> <p>Requires no Service Provider truck roll</p>
Remote & Local Management	Remote management and monitoring via SNMP, Telnet or HTTP and local management via console port
Proven Reliability	
Cisco IOS Technology	Offers technology that is used throughout the backbone of the Internet and in most enterprise networks.
Safe Investment	

Feature	Benefit
Upgradable Memory	Allows customers to add features as networking needs expand
Advanced Processor and Memory Architecture	Ensure the platform can support processor-intensive applications
World-class Support	Helps customers keep their Cisco 800 series routers running all the time

Specifications

Hardware

Table 18-179: Technical Specifications for Cisco 826, 827H & 827-4V

Description	Cisco 827H	Cisco 826	Cisco 827-4V	Cisco 828
Processor	MMC 855T RISC	MMC 855T RISC	MMC 855T RISC	MMC 855T RISC
Speed	50 MHz	50 MHz	50 MHz	50 MHz
Default DRAM1 Memory	32 MB	32 MB	24 MB	16 MB
Maximum DRAM Memory	32 MB	32 MB	32 MB	32 MB
Default Flash2 Memory	8 MB	8 MB	8 MB	8 MB
Maximum Flash Memory	16 MB	16 MB	16 MB	16 MB
Analog Telephone Ports	-	-	4	-
REN	-	-	5 REN/ port	-
Ethernet	4 port 10 Mbps Hub	1 port 10 Mbps	10 Mbps	4 port 10 Mbps Hub
Console	RJ-45	RJ-45	RJ-45	RJ-45
LEDs	7	7	11	10
Support for Kensington-Style Physical Lock	Yes	Yes	Yes	Yes
Stackable	Yes	Yes	Yes	Yes
Crossover Hub Switch (To PC - To HUB)	Yes	Yes	Yes	Yes
Power Supply	Universal 100 – 240VAC	Universal 100 – 240VAC	Universal 100 – 240VAC	Universal 100 – 240VAC

Software

Table 18-180: Memory Requirements for Cisco 826, 827H, and 828 IOS Feature Sets

Cisco IOS Feature Sets	Memory Requirements	
	Flash	DRAM
IP	8 MB	16 MB
IP Plus	8 MB	20 MB
IP Firewall	8 MB	24 MB
IP Firewall Plus IPSec 3DES	8 MB	24 MB

Table 18-181: Memory Requirements for Cisco 827-4V IOS Feature Sets

Cisco 827-4V IOS Feature Sets	Cisco 827-4V Memory Requirements	
	Flash	DRAM
IP	8 MB	16 MB

Cisco 827-4V IOS Feature Sets	Cisco 827-4V Memory Requirements	
IP Firewall Plus IPSec 56	8 MB	16 MB
IP Firewall Plus IPSec 3DES	8 MB	24 MB
IP/IPX Firewall Plus IPSec 3DES	8 MB	24 MB
IP Voice	8 MB	24 MB
IP/IPX Voice Plus	8 MB	24 MB
IP Firewall Voice Plus IPSec 56	8 MB	24 MB
IP Firewall Voice Plus IPSec 3DES	8 MB	24 MB

All software part descriptions and part numbers for Cisco products can be accessed using the online Cisco Pricing Tool at http://www.cisco.com/cgi-bin/order/pricing_root.pl

Ordering Information

Product Part Numbers

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