Data Sheet

Cisco SOHO 90 Series Secure Broadband Routers

Affordable, secure, easy-to-use broadband access for small offices

Cisco® SOHO 90 Series secure broadband routers provide secure connectivity to small and remote offices with up to five users and teleworkers. The Cisco SOHO 90 Series router supports integrated security features of Cisco IOS® Software such as stateful-inspection firewall protection, strong encryption for virtual private networks (VPNs), easy setup for nontechnical users with a Web-based setup tool, and advanced management capabilities to lower operational costs.

The Cisco SOHO 90 Series is comprised of the Cisco SOHO 91 Ethernet Broadband Router, the Cisco SOHO 96 ADSL over ISDN Broadband Router, and the Cisco SOHO 97 ADSL Broadband Router. The Cisco SOHO 91 router has an Ethernet WAN port for use with an external DSL or cable modem. An asymmetric digital subscriber line (ADSL) modem is integrated into the Cisco SOHO 96 and SOHO 97 routers, with the Cisco SOHO 96 ADSL over ISDN router supports remote management via a built-in ISDN port, and the Cisco SOHO 97 router supporting ADSL over POTS. All three models offer a four-port 10/100 Ethernet LAN switch for connecting multiple PCs or network devices in a small-office network.

Figure 1:
Cisco SOHO 90 Series Secure Broadband Routers

Secure Internet Access

Cisco SOHO 90 Series routers, recommended for up to five users, allow all users in a small office to share a secure broadband connection with an integrated stateful-inspection firewall. Corporate teleworkers or small office users can also take advantage of Cisco SOHO 90 Series routers for VPN connections to the corporate network. The routers can set up secure Triple Data Encryption Standard (3DES) encrypted connections using Cisco IOS Software or users can initiate VPN tunnels from PC-based VPN clients on the LAN.

Easy Setup and Deployment

Cisco SOHO 90 Series routers include the Cisco Router Web SetUp Tool (CRWS), a Web-based configuration tool that allows users to quickly self-install the router. Because the tool CRWS is Web-based, no additional software is required on the PC for configuration. Users simply point a browser to the router and follow a few easy steps to quickly get the router up and running. Additionally, the Cisco Configuration Express service allows enterprise or service provider customers who order products direct from Cisco to have preconfigured Cisco SOHO 90 Series routers shipped from the manufacturer directly to the end users.

Advanced Management Features for Low Cost of Ownership

To simplify management and reduce ongoing operational costs, Cisco SOHO 90 Series routers take advantage of many local and remote debug and troubleshooting features in Cisco IOS Software. The routers support centralized management and configuration updates with the Cisco CNS 2100 Intelligence Engine management appliance, further reducing operational costs.

Cisco SOHO 90 Series routers provide the right combination of integrated security features, a four-port 10/100 Ethernet LAN switch, and advanced management features to secure broadband connections for small-office and home-office users. Cisco SOHO 90 Series routers use the same Cisco IOS Software that is used in large service provider and enterprise networks, allowing small office users to take advantage of the proven reliability of Cisco IOS Software. The SOHO 96 router has an integrated ISDN S/T port for out-of-band management.

Features and Benefits

Table 1 Key Product Features and Benefits of the Cisco SOHO 90 Series

Features	Benefits
Shared broadband access	• Allows multiple users to share connections with a single IP address
Secure Internet Access	
Stateful packet inspection firewall (Cisco IOS Firewall Feature Set)	• Offers internal users secure, per-application dynamic access control (stateful inspection) for all traffic across perimeters • Defends and protects router resources against denial-of-service (DOS) attacks • Checks packet headers and drops suspicious packets • Protects against unidentified, malicious Java applets • Details transactions for reporting on a per-application, per-feature basis
Network security features with Cisco IOS Software, including access control lists (ACLs), dynamic and static network and port address translation (NAT/PAT), Lock & Key, dynamic ACLs, and router and route authentication	• Provides perimeter network security to prevent unauthorized network access
Software-based IP Security (IPSec) 3DES encryption	• Enables VPN tunnels to terminate in the router allowing all users connected to the router a secure connection from the remote site to a corporate network
Multiuser IPSec pass-through	• Supports teleworkers or multiple agents using VPN client software on their PCs, allowing IPSec tunnels to pass through the router when VPN PC software clients are used
Multiuser Point-to-Point Tunneling Protocol (PPTP) pass-through	• Support for PPTP tunnels, encrypted or unencrypted, initiated from the PC
IPSec NAT pass-through	• Allows IPSec tunnels to be established from PC VPN clients in a LAN environment that uses NAT to optimize use of IP addresses
Full-function NAT (one-to-many and many-to-many)	• Allows several applications and devices, including NetMeeting and H.323 phones, to be used transparently from a LAN that deploys NAT

Table 1 Key Product Features and Benefits of the Cisco SOHO 90 Series

Features	Benefits
Static-NAT-based DMZ, defining a static mapping between a public IP address/ port and a host on the LAN	• Allows access to applications (such as Web and Simple Network Management Protocol [SMTP] servers) on the LAN from the WAN via a pinhole on the NAT firewall
Quality of Service (QoS)	
Asynchronous Transfer Mode (ATM) QoS (for Cisco SOHO 96 and SOHO 97 routers), including ATM traffic universal broadband router (UBR), nonreal-time variable bit rate (VBRnrt), and constant bit rate (CBR) with per-VC queuing and traffic shaping	• Helps ensures QoS with ability to send traffic over the appropriate virtual circuit to provide ATM-level shaping and help ensure that no head-of-line blocking can happen between circuits of different or equal traffic classes
Easy Setup and Deployment	
Plug and play with default settings and Web-based setup tool	• Allows nontechnical users to easily set up the router and customize advanced features
CRWS	• Allows nontechnical users to complete installation by simply by pointing a browser at the router and providing user information
Cisco Configuration Express	• Lowers cost of deployment by shipping preconfigured units directly to end users without staging or storing
Advanced Management Features for Low Cost of Ownership	
Router status page in CRWS tool	• Provides a Web-based visual representation of router configuration and feature status (firewall activated, VPN tunnel up, for example)
Cisco IOS Software interactive debug and remote management features	• Enables remote management and monitoring via SNMP, Telnet, or HTTP and local management via console port to diagnose network problems in detail
Cisco IOS Software command line interface (CLI)	• Allows customers to use existing knowledge of the Cisco IOS Software CLI for easier installation and manageability without additional training
Cisco IOS Software technology	• Offers technology that is used throughout the backbone of the Internet and in most enterprise networks
Cisco CNS 2100 Series Intelligence Engine	• Provides for centralized Cisco IOS Software configuration update; remote sites are configured to contact this centrally located device for configuration updates
Supported by Cisco VPN Solution Center, CiscoWorks VMS, and Cisco Secure Policy Manager	• Allows for scalable deployments of security policies management
Secure Shell (SSH) Protocol	• Provides a secure, encrypted connection to a router, similar to an inbound Telnet session
Out-of-band management through the Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) S/T port (Cisco SOHO 96 router only)	• Allows service providers to remotely manage and troubleshoot the router should the DSL line fail

Table 2 Cisco SOHO 90 Series Hardware Specifications

Hardware Specifications	Cisco SOHO 91, SOHO 96, and SOHO 97 Routers
Processor	Motorola RISC
Default DRAM[1] memory	32 MB
Maximum DRAM memory	32 MB
Default Flash[1] memory	8 MB
Maximum Flash memory	8 MB
WAN	• 10Base-T Ethernet (Cisco SOHO 91) • ADSL over ISDN (Cisco SOHO 96) • ADSL over basic telephone service (Cisco SOHO 97)
LAN	Four-port 10/100-Base-T with autosensing MDI/MDX for sensing cable type (straight-through or crossover)
RJ-45 (Cisco SOHO 96)	ISDN BRI S/T port which can be configured for out-of-band management (Cisco SOHO 96 only)
LEDs	10
External power supply	Universal 100-240 VAC

1. DRAM and Flash memory must be obtained from Cisco Systems

Table 3 Memory Requirements and Software Feature Sets for Cisco SOHO 91, SOHO 96, and SOHO 97 Routers

Cisco SOHO 90 Series IOS Software Images	Cisco SOHO 90 Series Memory Requirements	
	Flash	DRAM
IP Firewall/IPSec 3DES	8 MB	32 MB

Table 4 Protocols and Features Supported by Cisco SOHO 90 Series Routers

	Cisco SOHO 90 Series Routers
Routing/Bridging	
Point-to-Point Protocol over Ethernet (PPPoE), including TCP MSS adjust	X
PPP over ATM (PPPoA); Cisco SOHO 96 and SOHO 97 only	X
RFC 2684 routed and bridged (formerly RFC 1483)	X
Transparent bridging	X
IP routing	X
Routing Information Protocol (RIP), RIPv2	X

Table 4 Protocols and Features Supported by Cisco SOHO 90 Series Routers (Continued)

	Cisco SOHO 90 Series Routers
QoS	
ATM QoS (Cisco SOHO 96 and SOHO 97 only)—ATM traffic UBR, VBRnrt, and CBR with per-VC queuing and traffic shaping	X
Per-VC queuing and shaping (8PVCs)	(Cisco SOHO 96 and SOHO 97 only)
Security	
Route and router authentication	X
Password Authentication Protocol (PAP), Challenge Handshake Authentication Protocol (CHAP), Local Password	X
Generic routing encapsulation (GRE) tunneling	X
IP basic and extended access lists	X
Stateful inspection firewall	X
IPSec 56-bit encryption	X
IPSec 3DES encryption	X
Multiuser IPSec pass-through (TCP and unencapsulated)	X
Multiuser PPTP pass-through	X
Terminal Access Controller Access Control System Plus (TACACS+)	(Cisco SOHO 91 only)
Standards-based encryption (STAC) compression	X
Ease of Use and Deployment	
CRWS	X
Cisco Configuration Express	X
Management	
Out-of-band Management via ISDN port SOHO 96 only	X
SNMP, Telnet, console port	X
Syslog	X
SNTP client and server [SNMP]	X
Trivial File Transfer Protocol (TFTP) client and server	X
Service assurance agent for service monitoring	X
ATM fault management Operation, Administration and Maintenance (OAM) (F5)—Segment continuity check, segment and end-to-end loopback and Interim Local Management Interface (ILMI) support	(Cisco SOHO 96 and SOHO 97 only)
Dying Gasp	(Cisco SOHO 96 and SOHO 97 only)
Address Conservation and Allocation	
NAT many to one (PAT)	X
NAT many to many (multi-NAT)	X
IP Control Protocol (IPCP) address negotiation and subnet delivery	X
Dynamic Host Control Protocol (DHCP) client address negotiation	X
DHCP client and server	X
DHCP relay	X
DHCP client host name (option 12) for certain cable services	(Cisco SOHO 91 only)

Table 5 Cisco SOHO Series—DSLAM Interoperability

DSLAM	Chipset	Interoperability Status	Comments
Alcatel ASAM 1000	AME	Yes	-
Alcatel 7300	AME	Yes	-
Lucent Stinger	AME	Yes	-
ECI	ADI 918	Yes	UR-2 compliant
ECI	ADI 930	Yes	UR-2 compliant
Siemens ExpressLink 2.0	TI	Yes	UR-2 compliant
Siemens ExpressLink 2.1	TI	Yes	UR-2 compliant

Regulatory and Standards Compliance

Cisco SOHO 90 Series routers are available for worldwide deployment.

Safety

- UL 1950/CSA 950-95, Third Edition
- IEC 950: Second Edition with Amendments 1, 2, 3, and 4
- EN60950: 1992 with Amendments 1, 2, 3, and 4
- CSO3, Canadian Telecom requirements
- FCC Part 68 U.S. Telecom Requirements
- AS/NZS 3260:1996 with Amendments 1, 2, 3, and 4
- ETSI 300-047
- TS 001 with Amendment 1
- EMI
- AS/NRZ 3548: 1992 Class B
- CFR 47 Part 15 Class B
- EN60555-2 Class B
- EN55022 Class B
- VCCI Class II
- ICES-003, Issue 2, Class B, April 1997S
- IEC 1000-3-2

Immunity

- IEC 1000-4-2 (EN61000-4-2)
- IEC 1000-4-3 (ENV50140)
- IEC 1000-4-4 (EN61000-4-4)

Cisco SOHO 97 ADSL Specifications

ST-Micro (formerly Alcatel Micro) DynaMiTe ADSL Chipset

- T1.413 ANSI ADSL DMT issue 2
- G.992.1 ITU G.DMT support
- G.992.2 ITU G.Lite support
- G.992.3 ITU G.hs ADSL type negotiation
- TR-048

The chipset does not provide interoperability with carrierless amplitude modulation/phase modulation (CAP)-based ADSL lines.

Cisco SOHO 96 ADSL Specifications

ST-Micro (formerly Alcatel Micro) DynaMiTe ADSL Chipset

- ETSI 101-388 v1.2.1 ADSL over ISDN
- Annex B ITU ADSL over ISDN support (Planned)
- UR-2 Specification (Deutsche Telekom)

The chipset does not provide interoperability with carrierless amplitude modulation/phase modulation (CAP)-based ADSL lines.

ISDN Specifications (Cisco SOHO 96)

- Two B channels plus one D channel: 2 x 64 Kbps (precompressed)
- Interoperable Switched 56: 2 x 56 Kbps (precompressed)
- Single-point and multipoint configurations
- Compatible with data or voice B-channel ISDN switch types
- CTR3 (ETSI, NET3)
- VN3/4/5 (France)

Physical Specifications

- Dimensions (H x W x D): 2.0 x 9.7 x 8.5 in. (5.1 x 24.6 x 21.6 cm)
- Weight: 1.48/1.5 lb (0.67/0.68 kg)

Environmental Operating Ranges

- Nonoperating temperature: -4 to 149 F (-20 to 65 C)
- Nonoperating humidity: 5 to 95%, relative humidity (noncondensing)
- Nonoperating altitude: 0 to 15,000 ft (0 to 4,570 m)
- Operating temperature: 32 to 104 F (0 to 40 C)
- Operating humidity: 10 to 85%, relative humidity (noncondensing)
- Operating altitude: 0 to 10,000 ft (0 to 3,000 m)

Power Ratings

- AC input voltage: 100 to 250 VAC, 50 to 60 Hz
- Power consumption: 6 to 10W (idle-maximum consumption)
- Power supply rating: 15

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