

Cisco **SOHO 90** Series Secure Broadband Routers

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

The Cisco SOHO 90 Series Secure Broadband Routers provide secure connectivity to small 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 non-technical users with a Web-based setup tool, and advanced management capabilities to lower operational costs.

Cisco SOHO 90 Series Secure Broadband Routers are comprised of the Cisco SOHO 91 Ethernet 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. The Cisco SOHO 97 router has an integrated ADSL WAN port. Both models offer a four-port 10/100 Ethernet LAN switch for connecting multiple PCs or network devices in a small office network.

Secure Internet Access

The 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 the 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 Set Up and Deployment

The Cisco SOHO 90 Series routers include the Cisco Router Web Set up tool (CRWS), a Web-based configuration tool that allows users to quickly self-install the router. Because 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 SOHO 90 Series routers shipped from the manufacturer directly to the end-users.

Figure 1
SOHO 90 Series Secure
Broadband Routers





Advanced Management Features for Low Cost of Ownership

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

The Cisco SOHO 90 Series routers provide the right combination of integrated security features, a four-port 10/100 Ethernet LAN switch, advanced management features to secure broadband connections for small office and home office users. The 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.

Features and Benefits

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

Key Features	Benefit
Shared broadband access	<ul style="list-style-type: none">• Allows multiple users to share connections with a single IP address
Secure Internet Access	
Stateful packet inspection firewall (Cisco IOS Firewall Feature Set)	<ul style="list-style-type: none">• 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 attacks (DOS)• Checks packet headers, dropping 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, dynamic and static NAT/PAT, Lock and Key, dynamic ACLs, router and route authentication	<ul style="list-style-type: none">• Provides perimeter network security to prevent unauthorized network access
Software-based IP security (IPSec) 3DES encryption	<ul style="list-style-type: none">• 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
Multuser IPSec pass-through	<ul style="list-style-type: none">• 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
Multuser PPTP pass-through	<ul style="list-style-type: none">• Support for PPTP tunnels, encrypted or unencrypted, initiated from the PC.
IPSec NAT Pass-through	<ul style="list-style-type: none">• Allows IPSec tunnels to be established from PC VPN clients in a LAN environment that uses NAT to optimize use of IP addresses



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Key Features	Benefit
Full function NAT (one-to-many and many-to-many)	<ul style="list-style-type: none"> Allows a wide variety of applications/devices including NetMeeting, H.323 phones etc. to be used transparently from a LAN that deploys NAT
Static-NAT-based DMZ—defines a static mapping between a public IP address/port and a host on the LAN	<ul style="list-style-type: none"> Allows access to applications (such as Web servers, SMTP servers etc.) on the LAN from the WAN via a pinhole on the NAT firewall
Quality of Service (QoS)	
ATM QoS (for Cisco SOHO 97)—ATM Traffic UBR, VBRnrt, and CBR with per-VC Queuing and Traffic Shaping	<ul style="list-style-type: none"> Helps ensures QoS 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
Easy Set Up and Deployment	
Plug and play with default settings and web based setup tool	<ul style="list-style-type: none"> Non-technical users can easily set up the router and customize advanced features
Cisco Router Web Setup Tool	<ul style="list-style-type: none"> Allows non-technical users to complete installation by simply by pointing a browser at the router and providing user information
Cisco Configuration Express	<ul style="list-style-type: none"> Lower cost of deployment due to shipping pre-configured units directly to end-users without staging/storing
Advanced Management Features for Low Cost of Ownership	
Router Status Page in Cisco Router Web Setup tool	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 CLI	<ul style="list-style-type: none"> Allows customers to use existing knowledge of Cisco IOS Software CLI for easier installation and manageability without additional training
Cisco IOS Software technology	<ul style="list-style-type: none"> Offers technology that is used throughout the backbone of the Internet and in most enterprise networks
Cisco Intelligent Engine IE 2100	<ul style="list-style-type: none"> Provides for centralized Cisco IOS configuration update; remote sites are configured to contact this centrally located device for configuration updates
Supported by Cisco VPN Solution Center, Cisco VMS and Cisco Secure Policy Manager	<ul style="list-style-type: none"> Allows for scalable deployments of security policies management
Secure Shell (SSH) Protocol	<ul style="list-style-type: none"> Provides a secure, encrypted connection to a router similar to an inbound telnet session



Table 2 Cisco SOHO 90 Series Hardware Specifications

Hardware Specifications	Cisco SOHO 91 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 POTS (Cisco SOHO 97)
LAN	4-port 10/100-Base-T with auto-sensing MDI/MDX for sensing cable type (straight-through or cross-over)
Console port (can also be configured for out-of-band management)	RJ-45
LEDs	10
External Power Supply	Universal 100-240 VAC

1. DRAM and Flash must be obtained from Cisco Systems

Table 3 Memory Requirements and Software Feature Sets for Cisco SOHO 91 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

Routing/Bridging
PPPoE (including TCP MSS adjust)
PPPoA (Cisco SOHO 97 only)
RFC 2684 routed and bridged (formerly RFC 1483)
Transparent Bridging
IP routing
RIP, RIPv2
QoS
ATM QoS (Cisco SOHO 97 only)—ATM traffic UBR, VBRnrt, and CBR with per-VC queuing and traffic shaping
Per VC queuing and shaping (Cisco SOHO 97 only)
10 Permanent Virtual Circuits (PVC)



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

Security
Route and router authentication
PAP, CHAP, Local Password
GRE Tunneling
IP basic and extended access lists
Stateful inspection firewall
IPSec 56-Bit encryption
IPSec 3DES encryption
Multi-user IPSec pass-through (TCP and unencapsulated)
Multi-user PPTP pass-through
TACACS+ (Cisco SOHO 91 only)
STAC Compression
Ease of Use and Deployment
Cisco Router Web Setup Tool
Configuration Express
Management
SNMP, Telnet, Console Port
Syslog
SNTP Client and Server
TFTP Client and Server
SA agent for service monitoring
ATM Fault management OAM (F5)—Segment continuity check and segment and end-to-end loopback and ILMI support (Cisco SOHO 97 only)
Dying Gasp (Cisco SOHO 97 only)
Address Conservation / Allocation
NAT Many to One (PAT)
NAT Many to Many (Multi-NAT)
IPCP Address Negotiation and subnet delivery
DHCP Client Address Negotiation
DHCP Client and Server
DHCP Relay
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	
Cisco 6x60/6015	ADI	Yes	Need external attenuator
Lucent Stinger	AME	Yes	
ECI	ADI 918	Yes	
ECI	ADI 930	Yes	

Regulatory and Standards Compliance

The 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 US 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)

SOHO 97 ADSL Specifications

ST-Micro (formerly Alcatel Micro Electronics) 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.

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 4570m)
- 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 3000m)
- 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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