Cisco 850 Series Integrated Services Routers for Small Offices

The Cisco® 850 Series of secure broadband and wireless routers is part of the Cisco Integrated Services Router portfolio. Designed for small offices, the routers provide secure WAN connectivity with optional integrated 802.11b/g WLANs in a single device. Easy setup allows the Cisco 850 Series to be deployed at small remote offices and small businesses, and remote management features enable IT managers and service providers to provide better support at remote sites.

Product Overview

Cisco 850 Series integrated services routers are fixed-configuration routers that support broadband cable and Asymmetric DSL (ADSL) over analog telephone lines connections in small offices (Figures 1 and 2). They provide the performance needed to run concurrent services, including firewall and encryption for VPNs and optional 802.11b/g for wireless networking. The Cisco Router and Security Device Manager (SDM) Web-based configuration tool simplifies setup and deployment (Figure 3), and centralized management capabilities give network managers visibility and control of router configurations at the remote site.

Cisco 850 Series integrated services routers offer:

- Secure connectivity with Stateful Inspection Firewall and IP Security (IPSec) VPN support for small offices
- 4-port 10/100 switch
- Secure WLAN 802.11b/g option with a single fixed antenna
- Easy setup, deployment, and remote management capabilities through Web-based tools and Cisco IOS® Software

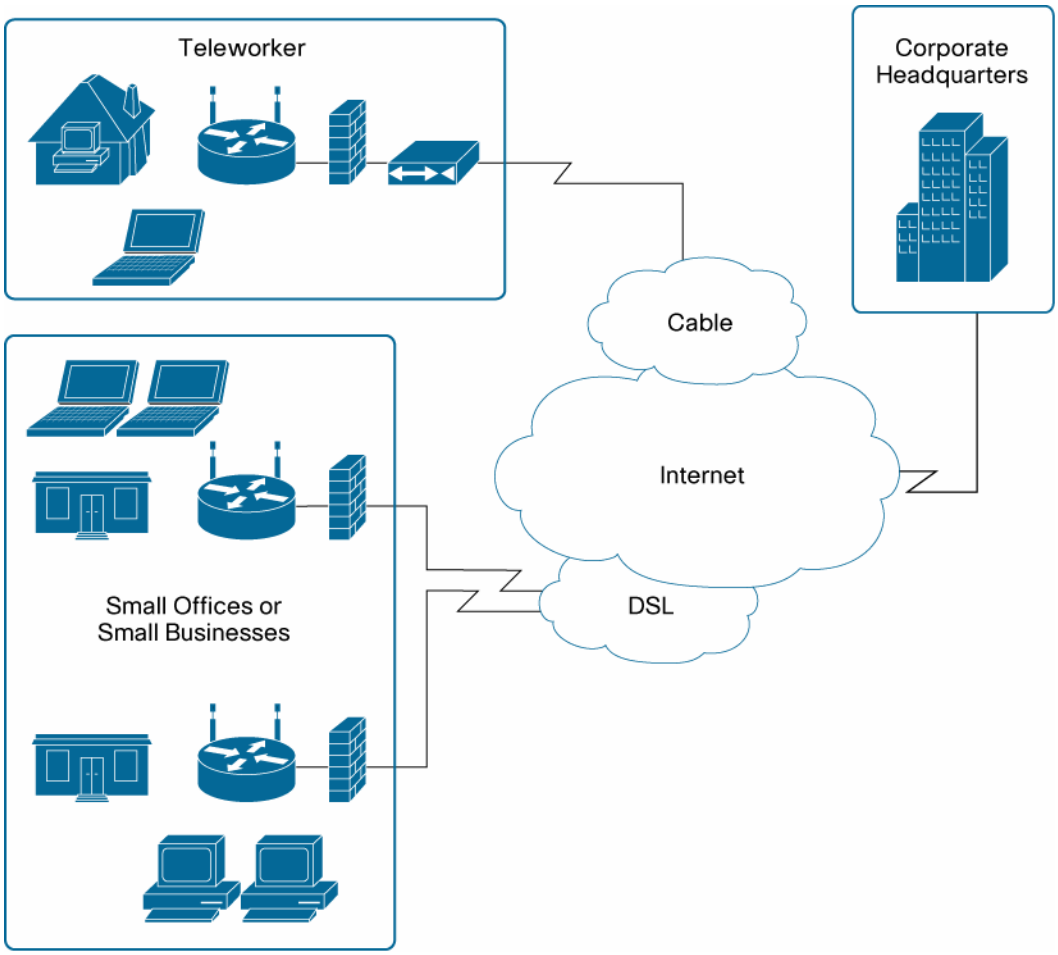
Figure 1. Cisco 851 Integrated Services Router

Table 1 lists the routers that currently make up the Cisco 850 Series.

Table 1. Cisco 850 Series Models

Models	WAN Interface	LAN Interfaces	802.11b/g
Cisco 851	10/100 Mbps Fast Ethernet	4-port 10/100 Mbps switch	No
Cisco 851W	10/100 Mbps Fast Ethernet	4-port 10/100 Mbps switch	Yes
Cisco 857	ADSL	4-port 10/100 Mbps switch	No
Cisco 857W	ADSL	4-port 10/100 Mbps switch	Yes

Figure 2. Deployment Scenarios



Applications

Cisco 850 Series routers are ideally suited for small office and remote office deployments. IT managers can centrally manage the remote site to quickly troubleshoot any network issues. Optional integrated secure WLAN connectivity simplifies the number of devices that need to be managed at the remote site.

The Cisco 850 Series is ideal for managed services-service providers and value-added resellers can use the series as a platform to offer differentiated security services and business-class WLANs for small business customers.

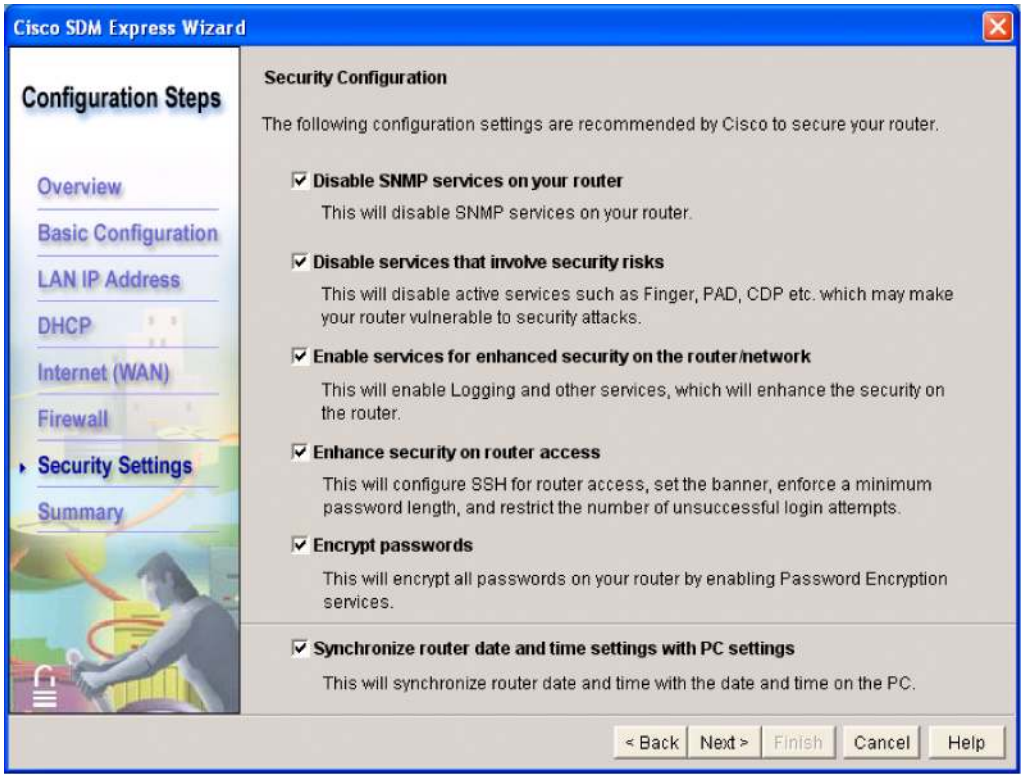
Features and Benefits

Table 2 lists the features and benefits that the Cisco 850 Series provides. For additional product details of the 850 Series ISR, go to the 800 Series Q&A site located at http://www.cisco.com/en/US/prod/collateral/routers/ps380/ps6200/prod_qas0900aecd8028a982.html.

Table 2. Features and Benefits of the Cisco 850 Series

Feature	Benefit
Stateful Inspection Firewall and IPSec VPN Support	Provides secure access when connecting to the Internet or connecting small offices to a central site
4-Port Mbps 10/100 Switch	High-speed LAN ports connect multiple devices to the small office network
Optional 802.11b/g WLANs	Offers a secure broadband router and access point for WLANs in a single device
Cisco SDM and Remote Management Features of Cisco IOS Software	• Cisco SDM helps resellers and customers to quickly and easily deploy, configure, and monitor a Cisco access router without knowledge of the Cisco IOS Software command-line interface (CLI) • Out-of-band management with an external modem through the auxiliary port allows IT managers to remotely manage routers at small office sites • Cisco Configuration Express Service supports factory-loaded configurations in high-volume deployments • Support for the Cisco CNS 2100 Series Intelligence Engine enables plug-and-play installations with centralized configuration management

Figure 3. Cisco SDM



Summary

Cisco 850 Series integrated service routers combine support for DSL or cable connections, secure connectivity with Stateful Firewall and VPN support, and optional 802.11b/g for secure WLANs. With easy setup for nontechnical users and central management capabilities, Cisco 850 Series

routers are suitable for deployment in small businesses or remote offices by value-added resellers, enterprise IT managers, or service providers.

Product Specifications

Tables 3 and 4 list software and hardware features of Cisco 850 Series routers.

Table 3. Software Features of the Cisco 850 Series

Feature	Description
Routing Protocols and General Router Features	• Routing Information Protocol (RIPv1 and RIPv2) • Layer 2 Tunneling Protocol (L2TP) • Network Address Translation (NAT) and Port Address Translation (PAT) • RFC 1483/2684 • Point-to-Point Protocol over ATM (PPPoA) (Cisco 857) • PPP over Ethernet (PPPoE) • 802.1d Spanning Tree Protocol • Dynamic Host Control Protocol (DHCP) server/relay/client • Access control lists (ACLs) • Generic routing encapsulation (GRE) • Dynamic DNS Support for Cisco IOS
Recommended Number of Users	10
DSL and ATM Features (DSL Model Only)	• ATM Unspecified Bit Rate (UBR), Constant Bit Rate (CBR), and Variable Bit Rate/non-real-time (VBR-nrt) • ATM Operation, Administration, and Maintenance (OAM) Support for F5 Continuity Check; segment and end-to-end loopback; and Interim Local Management Interface (ILMI) support • 8 virtual circuits
Security Features	• Stateful Inspection Firewall • Hardware-accelerated Triple Data Encryption Standard (3DES) for IPSec • Hardware-accelerated Advanced Encryption Standard (AES) for IPSec • IPSec 3DES termination/initiation • IPSec pass-through • 5 VPN Tunnels • Point-to-Point Tunneling Protocol (PPTP) pass-through • L2TP pass-through • Advanced Application Inspection and Control • E-mail Inspection Engine • No Service Password Recovery • HTTP Inspection Engine • System Logging-EAL4 Certification Enhancements
Quality of Service (QoS) Features	• Weighted Fair Queuing (WFQ) • Policy-based routing (PBR) • Per-VC queuing • Per-VC traffic shaping
Management Features	• Cisco SDM • Cisco Configuration Express • Cisco CNS 2100 Intelligence Engine support • DSL firmware update from Flash • Cisco Service Assurance Agent (SAA) • Telnet, Simple Network Management Protocol (SNMP), CLI, and HTTP management • Out-of-band management with external modem through virtual auxiliary port • RADIUS and TACACS+

Table 4. WLAN (Cisco 851W and 857W) Features of the Cisco 850 Series

Feature	Description
WLAN Hardware	• 802.11b/g • Automatic rate selection for 802.11b/g • External antenna (cannot be removed) • Indoor range: 1 Mbps @ 320 ft • WECA interoperability • Default antenna gain: 2.2 dBi
WLAN Software Features	• Maximize throughput or maximize range option • Software configurable transmit power • SSID Globalization
WLAN Security Features	• 802.1X • 802.11i • Wi-Fi Protected Access (WPA) & AES (WPA2) • EAP Authentication: Cisco LEAP, PEAP, EAP-TLS, EAP-FAST, EAP-SIM, EAP-MD5, EAP-TTLS • Static and dynamic Wired Equivalent Privacy (WEP) • Temporal Key Integrity Protocol (TKIP)/SSN Temporal Key Integrity Protocol/Simple Security Network encryption • MAC authentication/filter • User database for survivable local authentication using LEAP & EAP-FAST • Configurable limit to the number of wireless clients • Configurable RADIUS accounting for wireless clients • PSK (Pre Shared Keys) (WPA-SOHO)
SSIDs	10
Wireless VLANs	10
Encrypted Wireless VLANs	4
MBSSIDs	1

Table 5. Hardware Features of the Cisco 850 Series

Feature	Description
Default DRAM	64 MB
Maximum DRAM	64 MB
Default Flash Memory	20 MB
Maximum Flash Memory	20 MB
WAN	• Cisco 851: 100 MB Ethernet • Cisco 857: ADSL over analog telephone lines
LAN Switch	4-port 10/100BASE-T switch with autosensing MDI/MDX (Media Device In/Media Device Crossover) for auto-crossover
802.11b/g WLANs	Optional on both Cisco 851 and Cisco 857 models
Console Port	RJ-45
LEDs	PPP, VPN, ADSL, WLAN, LAN
External Power Supply	Universal 100 to 240 VAC
DSL Specifications	• ST-Micro DynaMiTe (formerly Alcatel Micro Electronics) ADSL Chipset (20190) • T1.413 ANSI ADSL DMT issue 2 • G.992.1 ITU G.DMT support • G.992.3 ITU G.hs ADSL type negotiation • G.992.3 (ADSL 2)/G.992.5(ADSL2+) • DSL Forum TR-067 The chipset does not provide interoperability with carrierless amplitude modulation/phase modulation (CAP)-based ADSL lines.
Wireless Specifications	
Data Rates Supported	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps

Feature	Description
Receive Sensitivity	• 802.11b ◦ -94dBm @ 1 Mbps ◦ -93dBm @ 2 Mbps ◦ 9-2dBm @ 5.5 Mbps ◦ -90dBm @ 11 Mbps • 802.11g ◦ -92dBm @ 6 Mbps ◦ -90dBm @ 9 Mbps ◦ -89dBm @ 12 Mbps ◦ -87dBm @ 18 Mbps ◦ -85dBm @ 24 Mbps ◦ -81dBm @ 36 Mbps ◦ -76dBm @ 48 Mbps ◦ -73dBm @ 54 Mbps
Maximum Conducted Transmit Power	**Note:** Maximum power setting subject to changes by channel & by region depending on regulations • 802.11b Average: 80mW (19dBm), Peak (FCC): 245mW (23.9dBm) • 802.11g Average: 50mW (17dBm)
Immunity	• IEC 61000-4-2:1995 Immunity to Electrostatic Discharges • IEC 61000-4-3:1995 Immunity to Radio Frequency Electromagnetic Fields • IEC 61000-4-4:1995 Immunity to Electrical Fast Transients • IEC 61000-4-5:1995 Immunity to Power Line Transients (Surges) • IEC 61000-4-6:1996 Immunity to Radio Frequency-Induced Conducted Disturbances • IEC 6100-4-8: 1003 Immunity to Power-Frequency Magnetic Fields (N/A for most Cisco equipment) • IEC 61000-4-11:1995 Immunity to Voltage Dips, Voltage Variations, and Short Voltage Interruptions
Physical Dimensions and Weight	• Dimensions with antenna connectors (H x W x D): 2.00 x 10.25 x 9.13 in. • (50.8 mm x 260.4 mm x 231.9 mm) • Dimensions without antenna connectors (H x W x D): 2.00 x 10.25 x 8.50 in. • (50.8 mm x 260.4 mm x 215.9.9 mm) • Weight: 2.10 lb (0.954 kg) (Antenna not included)
Power	• AC input voltage: 100 to 240 VAC • Frequency: 50 to 60 Hz • Maximum output power: 26W • Output voltages: 5 and 12V
Approvals and Compliance	• 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 • CS-03, 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
Certifications	

Feature	Description
Environmental Operating Range	• Nonoperating temperature: -4 to 149°F (-20 to 65°C) • Nonoperating humidity: 5 to 95 percent 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 percent relative humidity (noncondensing) • Operating altitude: 0 to 10,000 ft (0 to 3000m)

DSLAM Interoperability

Table 6 lists the Cisco supported DSLAMs (Digital Subscriber Line Access Multiplexer) for the Cisco 850.

Table 6. DSLAM Interoperability

DSLAM	ECI Hi-Focus	Alcatel 7300	Lucent Stinger
Chipset	ADSL POTS	ADSL POTS	ADSL POTS
	Analog Devices	Alcatel/ST	Globespan
857	X	X	X

ADSL2+ Support

Table 7 lists the ADSL2+ (Asymmetric Digital Subscriber Line 2+) support provided through Cisco IOS Software Release 12.4(4)T.

Table 7. ADSL2+ Support

DSLAM	Linecard	Linecard Chipset	DSLAM Firmware
Alcatel 7300	ADSL2+ POTS	BRCM	L7D6AA47.020
Lucent Stinger	ADSL2+ POTS	GSPN	9.7.1e64
Alcatel 7300	ADSL2+ ISDN	BRCM	L7D6AA47.020

Ordering Information

Table 8 lists ordering information for the Cisco 850 Series. To place an order, visit the Cisco Ordering Home Page.

Table 8. Ordering Information

Part Number	Product
CISCO851-K9	Cisco 851 Ethernet to Ethernet Router
CISCO851W-G-A-K9	Cisco 851 Ethernet to Ethernet Wireless Router; Americas
CISCO851W-G-E-K9	Cisco 851 Ethernet to Ethernet Wireless Router; Europe
CISCO851W-G-J-K9	Cisco 851 Ethernet to Ethernet Wireless Router; Japan
CISCO857-K9	Cisco 857 ADSL Router
CISCO857W-G-A-K9	Cisco 857 ADSL Wireless Router; U.S. and Americas
CISCO857W-G-E-K9	Cisco 857 ADSL Wireless Router; Europe

Note: For Cisco 850 Series wireless router part numbers, the following letters are associated with specifications meeting wireless regulations in the respective regions: A=Americas (FCC regulatory domain), E = Europe, J = Japan

To Download Software

To download Cisco IOS Software, visit the Cisco Software Center.

To download the latest Cisco SDM software, visit http://www.cisco.com/go/sdm.

Service and Support

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For More Information

For more information about Cisco 850 Series secure broadband and wireless routers, visit the 800 Series Q&A site at http://www.cisco.com/en/US/prod/collateral/routers/ps380/ps6200/prod_qas0900aecd8028a982.shtml or contact your local account representative.

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