

## Cisco 520 Secure Router for Cisco Smart Business Communications System

### A Flexible, Easy-to-Manage Router to Secure Your Small Business

More than ever, you need to secure your network to keep your business assets safe from threats. You depend on your network to keep you connected to the people you do business with every day, from customers to suppliers and business partners. Yet when you have a small networking staff, it can be difficult to manage your network and make sure it is well protected from security breaches. To be successful, you need a complete network solution that delivers the security and rich features you need, yet is affordable and easy to use.

The Cisco® 520 Secure Router combines Internet access, advanced security, virtual private network (VPN) access, and optional wireless networking, all in a single easy-to-use device. Designed for seamless integration with the Cisco Smart Business Communications System—a complete set of advanced voice, data, security, and wireless networking products designed specifically for small businesses—the Cisco 520 Secure Router brings together multiple technologies to help you improve network security and simplify network management.

### Product Overview

The Cisco 500 Series Secure Routers deliver:

- High performance broadband access for small offices and teleworkers
- Highly secure remote access and site-to-site connectivity with IP Security (IPsec) VPN, Secure Sockets Layer (SSL) VPN, and dynamic multipoint VPN (DMVPN)
- Built-in threat defense, including:
  - Stateful packet inspection (SPI) firewall to help minimize web and email threats
  - Intrusion prevention system (IPS), providing protection from attacks, worms, and viruses by detecting and stopping these threats before they can affect the network
  - Cisco IOS® Content Filtering to restrict access to undesirable websites and help guard against malware and phishing attacks
- Highly secure 802.11b/g wireless networking option to connect mobile employees in the workplace
- Support for static routing and dynamic routing protocols to easily adapt to diverse network environments
- Quality of service (QoS) for crisp voice and video communications
- 4-port 10/100 managed switch with VLAN support to interconnect workplace devices such as computers, servers, and printers
- Simple deployment, management, and troubleshooting with Cisco Configuration Assistant

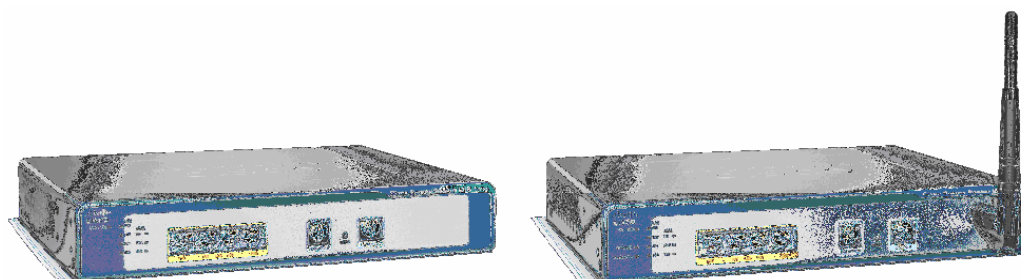
Table 1 lists the current Cisco 500 Series Secure Router models.

**Table 1.** Cisco 500 Series Secure Router Models

Model Number	Part Number	WAN Interface	802.11b/g Wireless
Cisco SR520	SR520-FE-K9	10/100 Mbps Fast Ethernet	No
	SR520-ADSL-K9	Asymmetric DSL (ADSL) over basic telephone service	No
	SR520-ADSLI-K9	ADSL over ISDN (Annex B)	No
Cisco SR520W	SR520W-FE-K9	10/100 Mbps Fast Ethernet	Yes
	SR520W-ADSL-K9	ADSL over basic telephone service	Yes
	SR520W-ADSLI-K9	ADSL over ISDN (Annex B)	Yes

Figure 1 shows a Cisco 520 Secure Router with and without wireless connectivity.

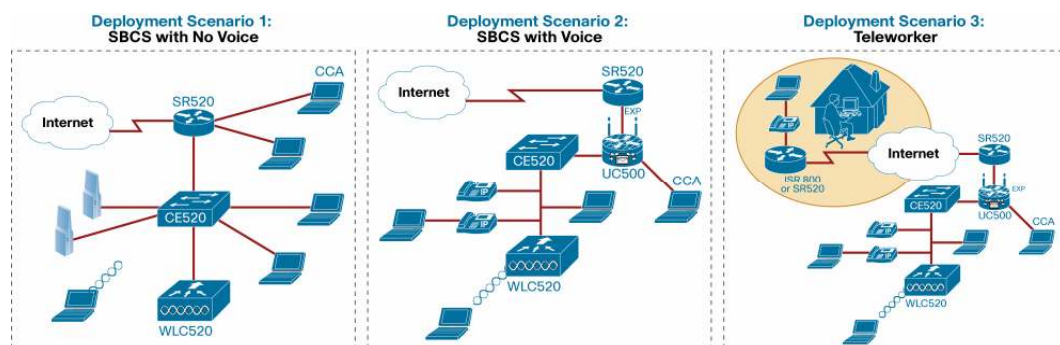
**Figure 1.** Cisco 520 Secure Routers



## Applications

Part of the Cisco Smart Business Communications System, the Cisco 520 Secure Router is ideal for securely connecting small offices to the Internet or to other company offices. Figure 2 illustrates several different deployment scenarios.

**Figure 2.** Deployment Scenarios for the Cisco 520 Secure Router



This solution can help you accomplish the following:

- Securely connect your small office:** The Cisco 520 Secure Router is ideal for securely connecting your employees with customers, business partners, and suppliers. Built-in advanced security and encryption lets you do business over the Internet with confidence and peace of mind. For example, online stores can safely perform transactions with credit cards and debit cards.

- **Move beyond your traditional phone system:** The Cisco 520 Secure Router works hand in hand with other Cisco Smart Business Communications System products, such as the Cisco Unified Communications 500 Series, to transform your business by securely bringing together all of your communications—phone calls, messaging, data, and wireless networking—onto a single network. Your employees can be more productive, and you can save money by managing and paying for just one network.
- **Upgrade your business communications:** If your business is already using the Cisco Smart Business Communications System, you can strengthen security by adding the Cisco 520 Secure Router. Intrusion prevention and Cisco IOS Content Filtering can add to your peace of mind, and intelligent network QoS lets you prioritize voice and data network traffic to improve network performance.
- **Safely connect traveling employees or teleworkers:** The Cisco 520 Secure Router is perfect for travelers or teleworkers who need secure VPN access to office applications and files. QoS features in the Cisco 520 Secure Router help maintain the integrity of voice communications from home offices.

### Features and Benefits

The Cisco 520 Secure Router provides:

- **Built-in advanced security:** The Cisco 520 Secure Router includes advanced security features to help protect your business, including a firewall that inspects traffic at the application layer to help protect the network from unauthorized users, an inline intrusion prevention system that provides deep-packet inspection to effectively prevent a wide range of network attacks; built-in encryption using Triple Data Encryption Standard (3DES) and Advanced Encryption Standard (AES) that lets remote employees connect to the network securely using IPsec VPN, SSL VPN, or DMVPN; and Cisco IOS Content Filtering to add another layer of defense against malware and phishing attacks.
- **Increased performance to run concurrent services:** The Cisco 520 Secure Router delivers broadband performance while simultaneously running services such as firewall, intrusion prevention, VPN encryption, and wireless networking. Managing a single, all-in-one router is easier and less expensive than managing multiple network devices.

- **Optional secure wireless networking:** All Cisco 500 Series Secure Router models are available with built-in 802.11b/g wireless access points to enable your employees to access the network when away from their desks. Encryption and compliance with wireless network security standards protect your network traffic every step of the way.
- **Built-in managed switch:** An integrated 4-port 10/100 managed switch can connect computers, printers, and servers in your office. One port on the switch can serve as a network edge (DMZ) to add an additional layer of security to your network. The switch also supports VLANs to let you securely separate traffic on your office network.
- **Simplified deployment and management:** Cisco Configuration Assistant makes it easy to configure, install, and manage the Cisco 520 Secure Router. It can also generate status reports, synchronize passwords, and upgrade software across all of your Cisco network devices, reducing the time your staff devotes to network maintenance. Cisco Configuration Assistant is available for download free of charge at <http://www.cisco.com/go/configassist>.
- **Quality of service:** The Cisco 520 Secure Router features the QoS intelligence you need to prioritize networking traffic and support crisp delivery of rich voice and video applications.
- **Multiple connectivity options:** The Cisco 520 Secure Router offers a number of options for WAN connectivity, including Fast Ethernet, ADSL over basic telephone service, and ADSL over ISDN, enabling you to connect your offices with the technology that best meets your needs.
- **Seamless integration with the Cisco Smart Business Communications System:** The Cisco 520 Secure Router was designed as an integral part of this complete system of advanced voice, data, security, and wireless networking for small business.

### Product Specifications

Table 2 gives specifications for the Cisco 520 Secure Router. Table 3 lists the Cisco IOS Software features available with the wireless option, and Table 4 gives hardware specifications for the routers.

**Table 2.** Cisco 520 Secure Router Specifications

Feature	Description
<b>Routing protocols and general router features</b>	<ul style="list-style-type: none"> <li>• Routing Information Protocol (RIP) versions 1 and 2</li> <li>• Open Shortest Path First (OSPF) Protocol</li> <li>• Cisco Express Forwarding</li> <li>• Port Address Translation (PAT)</li> <li>• RFC 1483/2684</li> <li>• Point-to-Point Protocol over ATM (PPPoA) (DSL models only)</li> <li>• Point-to-Point Protocol over Ethernet (PPPoE)</li> <li>• 802.1d Spanning Tree Protocol</li> <li>• Dynamic Host Configuration Protocol (DHCP) server/relay/client</li> <li>• Dynamic Domain Name System (DNS)</li> </ul>
<b>Recommended number of users</b>	Up to 50
<b>IPv6 features</b>	<ul style="list-style-type: none"> <li>• IPv6 addressing architecture</li> <li>• IPv6 name resolution</li> <li>• IPv6 statistics</li> <li>• IPv6 translation-transport packets between IPv6-only and IPv4-only endpoints</li> <li>• Internet Control Message Protocol (ICMP) v6</li> <li>• IPv6 DHCP</li> </ul>
<b>DSL and ATM features (DSL models only)</b>	<ul style="list-style-type: none"> <li>• ATM Variable Bit Rate/real time (VBR-rt)</li> <li>• ATM Unspecified Bit Rate (UBR), Constant Bit Rate (CBR), and Variable Bit Rate/non-real time (VBR-nrt)</li> <li>• ATM Operation, Administration, and Maintenance (OAM) support for F5 continuity check; segment and end-to-end loopback; and Interim Local Management Interface (ILMI) support</li> <li>• 10 virtual circuits</li> </ul>
<b>Security features</b>	<p>Secure connectivity:</p> <ul style="list-style-type: none"> <li>• 10 SSL VPN tunnels</li> <li>• 20 IPsec VPN tunnels</li> <li>• Hardware-accelerated 3DES and AES</li> <li>• Dynamic multipoint VPN (DMVPN)</li> <li>• IPsec pass-through</li> <li>• Point-to-Point Tunneling Protocol (PPTP) pass-through</li> <li>• Stateful packet inspection firewall</li> <li>• Intrusion prevention system</li> <li>• Advanced application inspection and control</li> <li>• Cisco IOS Content Filtering</li> <li>• Network Address Translation (NAT) transparency</li> <li>• 802.1</li> <li>• Secure HTTP (HTTPS), FTP, and Telnet authentication proxies</li> <li>• No service password recovery</li> <li>• Access control lists (ACLs)</li> </ul>
<b>QoS features</b>	<ul style="list-style-type: none"> <li>• Weighted fair queuing (WFQ)</li> <li>• Class-based WFQ (CBWFQ)</li> <li>• Low-latency queuing (LLQ)</li> <li>• Class-based QoS MIB</li> <li>• Prefragment before encryption</li> <li>• TX ring adjustment</li> <li>• Virtual circuit (VC) bundling</li> <li>• Policy-based routing (PBR)</li> <li>• Per-VC queuing</li> <li>• Per-VC traffic shaping</li> </ul>
<b>Management features</b>	<ul style="list-style-type: none"> <li>• Cisco Configuration Assistant</li> <li>• Management of LAN switch ports</li> <li>• Telnet, Simple Network Management Protocol (SNMP v3), command-line interface, and HTTP management</li> <li>• RADIUS and TACACS+</li> </ul>
<b>VLAN support</b>	Support for 4 VLANs


**Table 3.** Cisco IOS Software Features on Cisco 520 Secure Router: WLAN Features (Available with Wireless Option)

Feature	Description
<b>WLAN hardware features</b>	<ul style="list-style-type: none"> <li>• 802.11b/g</li> <li>• Automatic rate selection for 802.11b/g</li> <li>• Indoor range: 1 Mbps at 320 ft</li> <li>• Wireless Ethernet Compatibility Alliance (WECA) interoperability</li> <li>• Default antenna gain: 2.2 dBi</li> </ul>
<b>WLAN software features</b>	<ul style="list-style-type: none"> <li>• Maximize throughput or maximize range option</li> <li>• Universal Client Mode (allows radio to connect router to external WLAN network)</li> <li>• Wi-Fi Multimedia (WMM) certification</li> <li>• Service Set Identification (SSID) globalization</li> </ul>
<b>WLAN security features</b>	<ul style="list-style-type: none"> <li>• 802.1</li> <li>• 802.11i</li> <li>• Wi-Fi Protected Access (WPA) and AES (WPA2)</li> <li>• Extensible Authentication Protocol (EAP) authentication: Cisco LEAP, Protected EAP (PEAP), EAP Transport Layer Security (EAP-TLS), EAP Flexible Authentication via Secure Tunneling (EAP-FAST), EAP Subscriber Identity Module (EAP-SIM), EAP Message Digest Algorithm 5 (EAP-MD5), EAP Tunneled Transport Layer Security (EAP-TTLS)</li> <li>• Static and dynamic Wired Equivalent Privacy (WEP)</li> <li>• Temporal Key Integrity Protocol (TKIP)/Simple Security Network (SSN) encryption</li> <li>• MAC authentication/filter</li> <li>• User database for survivable local authentication using Cisco LEAP and EAP-FAST</li> <li>• Configurable limit to the number of wireless clients</li> <li>• Configurable RADIUS accounting for wireless clients</li> <li>• PSK (Pre-Shared Keys) (WPA-SOHO)</li> </ul>
<b>SSIDs</b>	10
<b>Wireless VLANs</b>	10
<b>Encrypted wireless VLANs</b>	4
<b>MBSSIDs</b>	2

**Table 4.** Cisco 520 Secure Router Hardware

Feature	Description
<b>Default DRAM</b>	128 MB
<b>Maximum DRAM</b>	128 MB
<b>Default flash memory</b>	36 MB
<b>Maximum flash memory</b>	36 MB
<b>LAN switch</b>	Managed 4-port 10/100BASE-T with autosensing medium dependent interface (MDI)/MDI crossover (MDI-X) for auto-crossover
<b>Console port</b>	RJ-45
<b>LEDs</b>	PPP, VPN, ADSL, WLAN, LAN
<b>External power supply</b>	Universal 100 to 240V AC

<b>DSL specifications</b>	<ul style="list-style-type: none"> <li>• ST-Microelectronics 20190 chipset</li> <li>• Supports ADSL over basic telephone service with Annex A and Annex B ITU G.992.1 (ADSL), G.992.3 (ADSL2), and G.992.5 (ADSL2+)</li> <li>• G.994.1 ITU G.hs</li> <li>• Complies with T1.413 ANSI ADSL DMT issue 2</li> <li>• DSL Forum TR-067</li> <li>• The chipset does not provide interoperability with carrierless amplitude modulation/phase modulation (CAP)-based ADSL lines.</li> <li>• Annex A and Annex B are supported starting with Cisco IOS Software Release 12.4(4)T.</li> <li>• The ADSL2 standard (ITU G.992.3) adds new features and functions targeted at improving ADSL performance and interoperability. In addition, the standard adds support for new applications, services, and deployment scenarios. Among the changes are improvements in data rate and reach performance, rate adaptation, improved diagnostics, and power enhancements. The conventional ADSL standard (ITU G.992.1) provides downstream data rates of up to 8 Mbps and upstream data rates of up to 0.8 Mbps, and ADSL2 provides higher downstream rates of up to 12 Mbps and upstream data rates of up to 1 Mbps.</li> <li>• The ADSL2+ standard (ITU G.992.5) doubles the bandwidth used for downstream data transmission, effectively doubling the maximum downstream data rates and achieving downstream data rates of up to 24 Mbps and upstream data rates of up to 1.5 Mbps.</li> </ul>
<b>Wireless Specifications</b>	
<b>Data rates supported</b>	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
<b>Receive sensitivity</b>	<ul style="list-style-type: none"> <li>• 802.11b <ul style="list-style-type: none"> <li>◦ -94 dBm @ 1 Mbps</li> <li>◦ -93 dBm @ 2 Mbps</li> <li>◦ -92 dBm @ 5.5 Mbps</li> <li>◦ -90 dBm @ 11 Mbps</li> </ul> </li> <li>• 802.11g <ul style="list-style-type: none"> <li>◦ -92 dBm @ 6 Mbps</li> <li>◦ -90 dBm @ 9 Mbps</li> <li>◦ -89 dBm @ 12 Mbps</li> <li>◦ -87 dBm @ 18 Mbps</li> <li>◦ -85 dBm @ 24 Mbps</li> <li>◦ -81 dBm @ 36 Mbps</li> <li>◦ -76 dBm @ 48 Mbps</li> <li>◦ -73 dBm @ 54 Mbps</li> </ul> </li> </ul>
<b>Maximum transmit power</b>	<p><b>Note:</b> Maximum power setting is subject to change by channel and by region, depending on regulations.</p> <ul style="list-style-type: none"> <li>• 802.11b: average 80 mW (19 dBm), peak (FCC) 245 mW (23.9 dBm)</li> <li>• 802.11g: average 50 mW (17 dBm)</li> </ul>
<b>Immunity</b>	<ul style="list-style-type: none"> <li>• IEC 61000-4-2:1995 Immunity to Electrostatic Discharges</li> <li>• IEC 61000-4-3:1995 Immunity to Radio Frequency Electromagnetic Fields</li> <li>• IEC 61000-4-4:1995 Immunity to Electrical Fast Transients</li> <li>• IEC 61000-4-5:1995 Immunity to Power Line Transients (Surges)</li> <li>• IEC 61000-4-6:1996 Immunity to Radio Frequency Induced Conducted Disturbances</li> <li>• IEC 6100-4-8: 1003 Immunity to Power-Frequency Magnetic Fields (N/A for most Cisco equipment)</li> <li>• IEC 61000-4-11:1995 Immunity to Voltage Dips, Voltage Variations, and Short Voltage Interruptions</li> </ul>
<b>Physical dimensions and weight</b>	<p>Product dimensions:</p> <ul style="list-style-type: none"> <li>• W x D x H = 10.578 x 8.289 x 1.719 in. (268.68 x 210.54 x 43.66 mm) (nonwireless models)</li> <li>• W x D x H = 10.578 x 8.65 x 1.719 in. (268.68 x 219.72 x 43.66 mm) (wireless models with antenna connectors, excludes antennae)</li> <li>• Weight: 3.0 lb (1.36 kg) maximum</li> </ul>
<b>Power</b>	<p>Product power specifications:</p> <ul style="list-style-type: none"> <li>• AC input voltage: 100 to 240 VAC</li> <li>• Frequency: 50 to 60 Hz</li> <li>• Maximum output power: 26W</li> <li>• Output voltages: 5 and 12V</li> </ul>

<b>Approvals and compliance</b>	<ul style="list-style-type: none"> <li>• UL 1950/ CSA 950-95, third edition</li> <li>• IEC 950, second edition with amendments 1, 2, 3, and 4</li> <li>• IEC/EN 60950-1, first edition</li> <li>• CS-03, Canadian Telecom Requirements</li> <li>• FCC Part 68 U.S. Telecom Requirements</li> <li>• AS/NZS 3260: 1996 with amendments 1, 2, 3, and 4</li> <li>• ETSI 300-047</li> <li>• TS 001 with amendment 1</li> <li>• EMI</li> <li>• AS/NRZ 3548:1992 Class B</li> <li>• CFR 47 Part 15 Class B</li> <li>• EN60555-2 Class B</li> <li>• EN55022 Class B</li> <li>• VCCI Class II</li> <li>• ICES-003, Issue 2, Class B, April 1997S</li> <li>• IEC 1000-3-2</li> <li>• UNI 3.1/4.0 PVC</li> </ul>
<b>Certifications</b>	
<b>Environmental operating range</b>	<ul style="list-style-type: none"> <li>• Nonoperating temperature: -4° to 149°F (-20° to 65° C)</li> <li>• Nonoperating humidity: 5% to 95% relative humidity (noncondensing)</li> <li>• Nonoperating altitude: 0 to 15,000 ft (0 to 4570 m)</li> <li>• Operating temperature: 32° to 104°F (0° to 40°C)</li> <li>• Operating humidity: 10% to 85%, relative humidity (noncondensing)</li> <li>• Operating altitude: 0 to 10,000 ft (0 to 3000 m)</li> </ul>

## DSLAM Interoperability

Table 5 lists the supported DSL Access Multiplexers (DSLAMs) for the Cisco 520 Secure Router.

**Table 5.** Cisco 520 Secure Router DSLAM Interoperability

	Cisco SR520-ADSL-K9 Cisco SR520W-ADSL-K9 (Basic Telephone Service)	Cisco SR520-ADSLI-K9 Cisco SR520W-ADSLI-K9 (ISDN)
<b>DSLAM Model Name: Cisco 6260</b>		
Chipset: Globespan	No	Yes
<b>DSLAM Model Name: Siemens XpressLink Ver. 2.1</b>		
Chipset: Texas Instruments	No	Yes
<b>DSLAM Model Name: Siemens XpressLink Ver. 2.0</b>		
Chipset: Texas Instruments	No	Yes
<b>DSLAM Model Name: ECI Hi-Focus</b>		
Chipset: ADI	No	Yes
Chipset: ADI Anaconda	No	Yes
Chipset: Analog Devices	Yes	No
<b>DSLAM Model Name: Alcatel 7300</b>		
Chipset: Globespan	No	Yes
Chipset: Alcatel/ST	Yes	No
<b>DSLAM Model Name: Lucent Stinger</b>		
Chipset: Globespan	Yes	Yes



## ADSL2+ Support

Table 6 lists the supported ADSL2+ line cards for the Cisco 520 Secure Router.

**Table 6.** ADSL2+ Support

DSLAM	Line Card	Line Card Chipset	DSLAM Firmware
Alcatel 7300	ADSL2/2+ basic telephone service (Annex A)	ADLT-D (24-port)/Broadcom	L7D6AA47.020
Lucent Stinger	ADSL2/2+ basic telephone service (Annex A)	stngr-72-gs-adsl-card/ Conexant	9.7.1e64
Alcatel 7300	ADSL2/2+ basic telephone service (Annex A)	ABLT-D (24-port)/Broadcom	L7D6AA47.174
Lucent Stinger	ADSL2/2+ basic telephone service (Annex A)	stngr-72-gs-adsl-card/ Conexant	9.9.1 (E.67.1.36)
ECI SAM480	ADSL2/2+ basic telephone service (Annex A)	ATUC-32/Infineon	A4_9.00.56
Ericsson EDA2.1	ADSL2/2+ basic telephone service (Annex A)	EDN312xp/Broadcom	CXC 132 7380 R2C09
Alcatel 7300	ADSL2+ ISDN (Annex B)	ADLT-F (24-port)/Broadcom	L7D6AA47.020

## Ordering

Table 7 lists the part numbers for the Cisco 520 Secure Router.

**Table 7.** Product Part Numbers

Part Number/SKU	Product
SR520-FE-K9	4-port Cisco 520 Secure Router, Fast Ethernet WAN
SR520W-FE-K9	4-port Cisco 520 Secure Router, Fast Ethernet WAN, 802.11b/g compliant
SR520-ADSL-K9	4-port Cisco 520 Secure Router, ADSL over POTS (basic telephone service) (Annex A) WAN
SR520W-ADSL-K9	4-port Cisco 520 Secure Router, ADSL over POTS (basic telephone service) (Annex A) WAN, 802.11b/g compliant
SR520-ADSLI-K9	4-port Cisco 520 Secure Router, ADSL over ISDN (Annex B) WAN
SR520W-ADSLI-K9	4-port Cisco 520 Secure Router, ADSL over ISDN (Annex B) WAN, 802.11b/g compliant
FL-WEBVPN-10-K9	SSL VPN Feature License for up to 10 users
SL-CNFIL-87x-1Y	1-year subscription to Cisco IOS Content Filtering for Cisco 520 Series Secure Router
SL-CNFIL-8xx-TRI	30-day free trial license of Cisco IOS Content Filtering for Cisco 520 Series Secure Router

## Secure Connectivity for Your Business

The network is becoming a key part of your most important business operations. To keep your business running at its best, and to give customers the service they expect, you need a network that is secure, powerful, and flexible.

The Cisco 520 Secure Router helps make communications easier by connecting customers to your business and your employees to each other. It delivers the solid security, secure VPN access, and advanced routing you need. At the same time, it helps you control costs, reduce your need for separate network equipment, and simplify network management. The Cisco 520 Secure Router is an important part of the Cisco Smart Business Communications System, which brings you communications capabilities usually found only at larger companies—at an affordable price. Whether you are starting up a small business or expanding a successful one, the Cisco 520 Secure Router can help you get connected today and grow smoothly in the future.

## Service and Support

Cisco offers a wide range of service programs to help you accelerate your business success. These innovative services are delivered through a unique combination of people, processes, tools, and partners, to keep you and your customers satisfied. Cisco Services help you protect your technology investment and keep your network running at its best. Cisco Services also help you prepare your network for new applications to extend network intelligence and help your business thrive. For more information about Cisco Services, see <http://www.cisco.com/go/services>.

## For More Information

For more information about the Cisco Smart Business Communication System, visit <http://www.cisco.com/go/sbcs>.

For more information about Cisco Configuration Assistant, or to download the tool free of charge, visit <http://www.cisco.com/go/configassist>.

For more information about the Cisco 520 Secure Router, visit <http://www.cisco.com/go/sr500> or contact your local account representative.



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