Cisco SRP500 Series Services Ready Platforms

Flexible, Cost-Effective Customer Premises Equipment for Small Business

Demand for managed services is expected to grow dramatically over the next four years, with small businesses - those with fewer than 100 employees - expected to make up more than half of this market opportunity. These companies may have complex IT needs but generally don't have the technical staff or expertise needed to keep up. They look to service providers for a flexible infrastructure and simplified management, along with better quality and reliability than they can achieve in-house. To meet this opportunity, service providers are transforming their networks, using services-ready platforms to deliver an array of profitable IP-based communications services.

Cisco® SRP500 Series Services Ready Platforms are flexible, cost-effective fixed-configuration customer premises equipment (CPE) with embedded intelligence to enable service providers to create, provision, and deploy premium revenue-generating services - a variety of high-quality IP voice, data, security, and wireless services - to small businesses on an as-needed basis. These platforms will help enable service providers to deliver differentiated, converged service offers that increase bandwidth usage and average revenue per user while reducing customer churn.

Product Overview

The Cisco SRP500 Series Services Ready Platforms include:

- Embedded intelligence to support a variety of high-quality voice, data, security, and wireless services.
- Integrated voice ports powered by an industry-leading voice Session Initiation Protocol (SIP) stack to deliver clear, high-quality voice service.
- Integrated stateful packet inspection (SPI) firewall and high-speed IP Security (IPsec) VPN capabilities with support for Triple Data Encryption Standard (3DES) to help keep small business data safe.
- 4-port managed Ethernet switch to connect devices in the office. VLAN support allows for highly secure segmentation of network resources.
- Integrated 802.11n wireless access point to enable employees to connect to the network while away from their desks.
- Third-generation (3G) wireless data readiness with built-in USB modem drivers.
- Interoperability with industry-leading soft switches, and voice gateways to enable scalable, end-to-end multiservice network deployments.
- Support for industry-standard TR-069 and XML-based provisioning for zero-touch deployments.
- Easy integration with other Cisco Small Business products to enable adaptability as customer needs change.

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Figure 1 shows the Cisco SRP521W Services Ready Platform. Figure 2 shows the SRP546W Services Ready Platform.

Figure 1. Cisco SRP521W Services Ready Platform

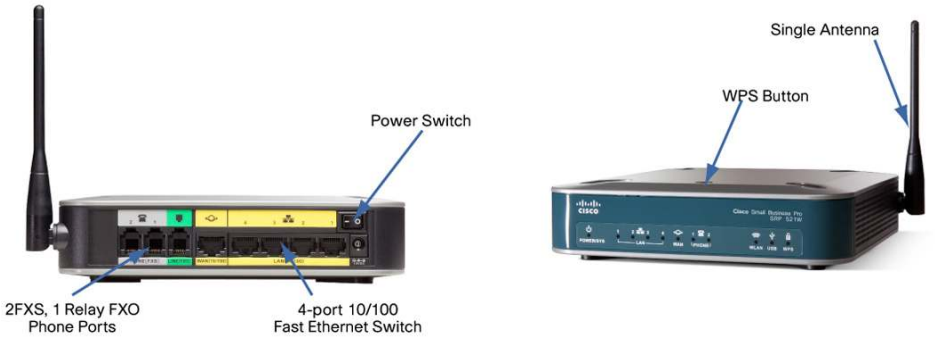

Figure 2. Cisco SRP546W Services Ready Platform

Table 1 lists details of all models in the Cisco SRP500 Series.

Table 1. Cisco SRP500 Series models

Model	WAN	3G	LAN	Wireless	Voice Ports	USB 2.0 Ports
Cisco SRP521W	10/100 Mbps Fast Ethernet	Wireless data using supported 3G USB modem (not included)	4-port 10/100 Mbps Fast Ethernet managed switch	802.11n Single captive antenna	2 FXS, 1 FXO (relay)	1
Cisco SRP526 W	Asymmetric DSL (ADSL) 2+ Annex B	Wireless data using supported 3G USB modem (not included)	4-port 10/100 Mbps Fast Ethernet managed switch	802.11n Single captive antenna	2 FXS, 1 FXO (relay)	1
Cisco SRP527 W	Asymmetric DSL (ADSL) 2+ Annex A	Wireless data using supported 3G USB modem (not included)	4-port 10/100 Mbps Fast Ethernet managed switch	802.11n Single captive antenna	2 FXS, 1 FXO (relay)	1
Cisco SRP541W	2 x 10/100/1000 Mbps Gigabit Ethernet	Wireless data using supported 3G USB modem (not included)	4-port 10/100/1000 Mbps Gigabit Ethernet managed switch	802.11n Dual threaded Neill-Concelman (TNC) antennas	4 FXS, 1 FXO (active)	2
Cisco SRP546W	ADSL 2+ Annex B, 10/100/1000 Mbps Gigabit Ethernet	Wireless data using supported 3G USB modem (not included)	4-port 10/100/1000 Mbps Gigabit Ethernet managed switch	802.11n Dual threaded Neill-Concelman (TNC) antennas	4 FXS, 1 FXO (active)	2
Cisco SRP547W	ADSL 2+ Annex A, 10/100/1000 Mbps Gigabit Ethernet	Wireless data using supported 3G USB modem (not included)	4-port 10/100/1000 Mbps Gigabit Ethernet managed switch	802.11n Dual threaded Neill-Concelman	4 FXS, 1 FXO (active)	2

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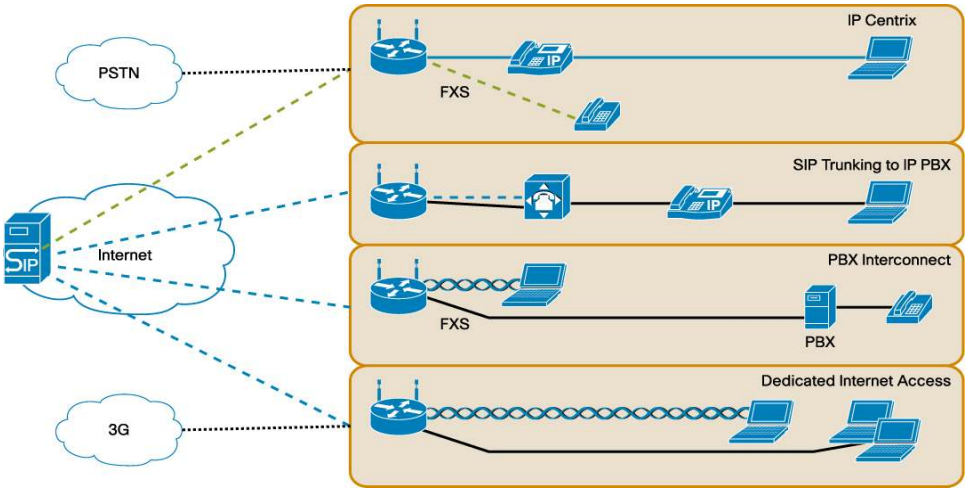
Model	WAN	3G	LAN	Wireless	Voice Ports	USB 2.0 Ports
				(TNC) antennas		

Applications

The Cisco SRP500 Series Services Ready Platforms contain embedded application intelligence to enable service providers to add and/or remove services remotely, depending upon end customer requirements, without hardware upgrades or costly truck rolls. Figure 3 shows the applications that will be embedded.

Figure 3. Applications Embedded in the Cisco SRP500 Series



Features and Benefits

Cisco SRP500 Series Services Ready Platforms are flexible, cost-effective CPE devices for small businesses that meet the needs of service providers through:

- **Embedded intelligence** to support concurrent, premium revenue-generating services such as voice, data, and security. Service providers can easily create and provision a variety of service offerings, adding or removing them remotely as their customers' needs change
- **Industry-leading SIP stack** that delivers an advanced implementation of standard voice coding algorithms for clear, high-quality voice under diverse network conditions
- **Interoperability** with industry-leading soft switches, and voice gateways that enable service providers to deploy highly efficient, scalable end-to-end multiservice networks
- **Standards-based provisioning**, with support for TR-069 and XML, that reduces operating expenses by enabling near zero touch deployments, eliminating the need for highly skilled technicians and costly truck rolls to deploy new services
- **Compact design** that integrates voice, data, switching, wireless, and security in a desktop device that is ideal for simple, space-saving small business deployments
- **Competitive pricing with support for premium services** that reduces capital expenses, warehousing costs, and the need for complete equipment upgrades when service requirements change

Product Specifications

Table 2 lists the software features of the Cisco SRP500 Series, Table 3 gives the voice features, and Table 4 describes the wireless features.

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Table 2. Software Features of the Cisco SRP500 Series

Feature	Description
Routing	• Static routing • Routing Information Protocol (RIP) versions 1 and 2 • Generic routing encapsulation (GRE) • Point-to-Point Tunneling Protocol (PPTP) -- supported on primary WAN interface • Layer 2 Tunneling Protocol (L2TP) -- supported on primary WAN interface • Policy-based routing (540 models)
Data features	• 802.3u Fast Ethernet (520 models), 802.3ad Gigabit Ethernet (540 models) • IPv4 (RFC 791) • Address Resolution Protocol (ARP) (RFC 826) • DNS client A record (RFC 1706), SRV record (RFC 2782) • Dynamic Host Configuration Protocol (DHCP) client (RFC 2131) • DHCP server (RFC 2131) • Point-to-Point Protocol over Ethernet (PPPoE) client (RFC 2516) • Internet Control Message Protocol (ICMP) (RFC 792) • Transmission Control Protocol (TCP) (RFC 793) • User Datagram Protocol (UDP) (RFC 768) • Real-Time Transport Protocol (RTP) (RFC 1889, RFC 1890) • Real-Time Control Protocol (RTCP) (RFC 1889) • Trivial File Transfer Protocol (TFTP) • Real-Time Streaming Protocol (RTSP) • HTTP (RFC 2616) and HTTPS (RFC 2818) • Network Address Translation (NAT) (RFC 1631) • 1:1 NAT (540 models) • SIP, RTSP, NetMeeting, IRC NAT ALG • DiffServe Code Point (DSCP) (RFC 2474) • Network Time Protocol (NTP) • Type of service (ToS) (RFC 791, RFC 1349) • Router or bridge mode of operation • MAC address cloning • Port forwarding • IP multicast; Internet Group Management Protocol (IGMP) versions 1 and 2 • Universal Plug and Play (UPnP) • Dynamic Domain Name System (DDNS) • DNS proxy • DNS spoofing (540 models) • Access control lists (ACLs) (540 models)
Switch features	• Automatic medium dependent interface (MDI) and MDI crossover (MDI-X) • Up to 5 802.1q VLANs (520 models) • Up to 10 802.1q VLANs (540 models) • Storm control • 802.1d Spanning Tree protocol (540 models)
DSL (DSL models only)	• ATM Variable Bit Rate/real-time (VBR-rt), ATM Unspecified Bit Rate (UBR), Constant Bit Rate (CBR), and Variable Bit Rate/non-real-time (VBR-nrt) • Up to four permanent virtual circuits (PVC) • ATM operation, administration, and maintenance (OAM) support for F4 and F5 continuity check with segment or end-to-end loopback • IP over ATM (IPoA) • Point-to-Point Protocol over ATM (PPPoA) • PPP over Ethernet (PPPoE) • Bridged Ethernet over ATM (EoA) (RFC 1483)

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Feature	Description
Security features	• Secure connectivity • Stateful inspection routing firewall • Denial-of-service (DoS) prevention • Access restriction by MAC and IP address • NAT transparency • Secure HTTP (HTTPS) support for remote access • Multi-level password-protected web access for configuration • URL and keyword filtering • Site-to-site IPsec VPN • Hardware-accelerated Data Encryption Standard (DES), 3DES • 5 IPsec tunnels • VPN pass-through for IPsec, Point-to-Point Tunneling Protocol (PPTP), and L2TP
QoS features	• Weighted Fair Queuing (WFQ) (4 queues) • Low-Latency Queuing (LLQ) • Traffic shaping
Provisioning, administration, and maintenance	• TR-069 • Automated provisioning and upgrade via Cisco XML profile, HTTP, HTTPS, TFTP • Asynchronous notification of upgrade availability via NOTIFY • Web browser administration and configuration via integral web server • Event logging • Stats in BYE message • Syslog and debug server records • Per-line and purpose configurable syslog and debug options • Simple Network Management Protocol (SNMP) versions 1 and 2 (versions 1, 2, and 3 on 540 models)
High-availability features	Automatic failover and recovery of WAN connection enabled by supported USB mobile broadband modem or by second WAN interface (540 models)

Table 3. Voice Features of the Cisco SRP500 Series

Feature	Description
Voice gateway	• SIP version 2 (RFC 3216) • Sending SIP messages via UDP/TCP • Echo cancellation (G.167 and G.168) • Dynamic jitter buffer • Simple traversal of UDP through NAT (STUN) (RFC 3489) • SDP (RFC 2327) • RTP/RTCP over UDP/RTCP-XR (RFC 3611) • 3-way conferencing • Remote firmware upgrade • Dual-tone multifrequency (DTMF) tone detection and generation • Voice activity detection (VAD) • Silence suppression • Comfort noise generation (CNG) • Caller ID generation and detection (frequency shift keying [FSK] and DTMF) • Media loopback • SIP Transport Layer Security (TLS) • Support for 2 simultaneous voice or fax calls • T.38 fax relay, including V.17, V.21, V.27ter, and V.29 and fax pass-through (pulse code modulation [PCM]) (T.38 support is dependent on fax machine and network/transport resilience)
International Telecommunications Union (ITU) standard voice codecs	Voice algorithms • G.711 (a-law and µ-law) • G.726 (16/24/32/40 kbps) • G.729 AB • G.723.1 (6.3 kbps, 5.3 kbps)
Telephony interface signaling support	• Ring voltage: 40 to 90 Vpk • Ring frequency: 20 to 25 Hz
Voice features	• Call forwarding: no answer/busy/unconditional • SIP TLS

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Feature	Description
	• Call transfer • Call waiting/hold/retrieval • Three-way conferencing • Caller ID number and name (primary line and on call waiting) • Caller ID block (prevents sending out the caller ID) • Anonymous call blocking • Distinctive ringing • Do not disturb setting • Repeat dialing on busy • Call return • Emergency call support • Dial plan • Speed dial • Auto-attendant • Meet-me conference
Voice port interfaces	2 FXS ports, 1 relay FXO port (520 models); 4 FXS ports, 1 active FXO port (540 models)
Fax and modem	• Fax and modem pass-through: Allows fax and modem traffic to pass through a voice port. • Fax relay: Provides a more robust protocol for fax transmission over packet networks. Also supports the T.38 fax protocol.

Table 4. Wireless Features of the Cisco SRP500 Series

Feature	Description
WLAN hardware	• 802.11n (supports 802.11b/g/n) • WPA and WPA2 • Wi-Fi Multimedia (WMM) • Single captive antenna (520 models) • Dual threaded Neill-Concelman (TMC) antennas (540 models) • Default antenna gain: 2.2 dBi • WPS button associated with configurable SSID
WLAN security features	• 802.11i • Wireless Protected Access (WPA and WPA2), Advanced Encryption Standard (AES) • Static and dynamic WEP • Temporal Key Integrity Protocol/Simple Security Network (TKIP/SSN) encryption • MAC authentication/filter • Configurable RADIUS authentication for wireless clients • Pre-Shared Keys (PSK)
SSIDs	4

System Specifications

Table 5 lists the system specifications for Cisco SRP500 Series Services Ready Platforms

Table 5. System Specifications for the Cisco SRP500 Series models

Feature	Description
Default DRAM	64 MB
Default flash memory	32 MB
WAN	• Fast Ethernet (SRP521W) • ADSL2+ Annex B (SRP526W) • ADSL2+ Annex A (SRP527W) • 2 x Gigabit Ethernet (SRP541W) • ADSL2+ Annex B and Gigabit Ethernet (SRP546W) • ADSL2+ Annex A and Gigabit Ethernet (SRP547W)
LAN	4-port 10/100 Mbps Fast Ethernet managed switch (520 models) 4-port 10/100/1000 Mbps Gigabit Ethernet managed switch (540 models)
802.11n WLAN	Integrated

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Feature	Description
USB ports	• 1 port (520 models) • 2 ports (540 models)
LEDs	Power, WAN, Wi-Fi, phone, LAN, WPS
External power supply	Universal 100 to 240 VAC
Approvals and compliance	Class B on 520 models; Class A on 540 model
Certifications	Wi-Fi certified
Regulatory Compliance	
Safety	• IEC 60950-1 • AS/NZS 60950.1 • CAN/CSA-C22.2 No. 60950-1 • EN 60950-1 • UL 60950-1
Immunity	• EN 55024 • EN 300-386 • EN 61000-6-2 • EN 50082-1 • EN 55024 (CISPR 24)
EMC	• FCC Part 15, ICES-003 • EN55022, CISPR 22 • EN 300-386 • EN 61000-3-2 • EN 61000-3-3 • EN 50082-1 • EN 55024, CISPR 24 • EN 61000-4-2 • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-5 • EN 61000-4-6 • EN 61000-4-8 • EN 61000-4-11
RF EMC	• CFR47 part15.247 • RSS-210 Rev 5 • ETSI EN 300.328.1 • ETSI EN301.489.1&.17 • AS./NZS 4268
TELCOM	• TIA-968 • CS-03 • ACIF S002 • ACIF S003 • ACIF S043 • ANZ PTC200 • ANZ PTC220 • ANZ PTC273 • TBR21
Environmental operating range	• Operating temperature: 32 to 104℉ (0 to 40℃) • Non-operating temperature: -22 to 158ºF (-30 to 70ºC) • Operating humidity: 5 to 95% non-condensing

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Cisco Services

As part of the Cisco Small Business family, Cisco SRP500 Series Services Ready Platforms are supported by professionals in Cisco Small Business Support Center locations worldwide who are specifically trained to understand small businesses. The Cisco Small Business Support Community, an online forum, enables small business customers to collaborate with their peers to get answers and solve problems. The optional Cisco Small Business Support Services delivers 3-year peace of mind support with telephone and chat support, software updates as available, and next-business-day advanced hardware replacement, as needed.

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