

SpeedStream®



SpeedStream® 5890 DSL Business-Class Router

Innovative G.SHDSL/SDSL/IDSL triple-tech solution for small or mid-sized businesses

Built for Business

Service providers can seize a new DSL service opportunity: offering high-speed Internet access and managed services to two emerging markets, small and medium businesses (SMBs) and teleworkers. These customers typically need the same service features as larger enterprises—that is, secure access, high availability, and simple management. Yet many of them still have not made the transition from dial-up to high-speed Internet access. This makes them prime candidates for DSL Internet access—and, ultimately, for managed DSL service offerings.

Now, service providers can quickly and cost-effectively provision G.SHDSL, SDSL or IDSL services with one router for SMBs and teleworker deployments. The triple-technology SpeedStream® 5890 Business-Class Router reduces operating expenses through streamlined deployment and simplified inventory management for service providers. What's more, the service provider can add value by offering managed services, such as firewalls, Virtual Private Networks (VPNs), and differentiated classes of service.

Enterprise-grade features for small and medium businesses

To gain maximum value from their DSL infrastructures, service providers need to deliver more than just Internet access. With SpeedStream® 5890 Business-Class Router, service providers can offer managed services at the time of initial service introduction or later, depending on their business model. Potential managed services include:

- > **Security**—The service provider can deploy VPNs and firewalls for SMBs that don't have an IT staff, or whose IT staff prefers to outsource this service.
- > **IP Quality of Service (QoS)**—By differentiating between types of IP traffic and giving priority to the most urgent or time-sensitive, the service provider can offer differentiated classes of service—not possible until now with DSL services.
- > **High availability**—SpeedStream® 5890 Business-Class Router supports high availability with a redundant configuration option and dial backup functionality. The router instantly detects if the DSL line is unavailable and, if so, automatically establishes a backup connection.
- > **Demilitarized Zone (DMZ)**—Businesses can connect to a computer host or small

network inserted as a "neutral" zone between the company's highly secure, private network and the outside public network. This enables the company to protect their main servers while providing services, such as an extranet for customers, suppliers or vendors, without compromising their internal network.

Rapid service deployment – one router for three DSL technologies

The SpeedStream® 5890 Business-Class Router can be deployed rapidly enabling service providers to quickly begin earning service revenues. Integration costs and resource requirements are reduced because the SpeedStream® 5890 Business-Class Router combines the functions of three DSL modem technologies, switch, router, and firewall in a single chassis. Provisioning is also faster and requires fewer resources because the SpeedStream® 5890 Business-Class Router can either be installed by the business customer via a browser-based interface or via an EMS.

With simplified provisioning and management and support for value-added services, the SpeedStream® 5890 Business-Class Router enables service providers to leverage their existing DSL infrastructures for more customers, more revenues, and better service.

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Value-Added Services

Managed firewalls

SMBs and enterprises with teleworkers increasingly recognize the urgency of protecting sensitive business information transferred over the Internet. In fact, network connections for remote teleworkers are often the most vulnerable links in an enterprise network. Often lacking the IT resources to address their security vulnerabilities, these customers are a receptive audience for outsourced security services. With the SpeedStream® 5890 Business-Class Router, service providers can offer either a basic business firewall or an optional ICSA-compliant stateful inspection firewall for enterprise-grade security.

Service providers can quickly provision highly secure VPNs using the configuration and management protocols that best fit their environment: HTTP, SNMP, SSH, or Telnet. VPNs can be configured to support Internet Protocol Security (IPSec) with Internet Key Exchange (IKE), Triple Data Encryption Standard (3DES), Layer 2 Tunneling Protocol (L2TP), and L2TP inside of IPSec. By offering security services, the service provider delivers additional value over its existing infrastructure.

Quality of Service (QoS) for teleworkers

SMBs and enterprises employ growing numbers of teleworkers who need reliable, secure high-speed Internet access. This creates an opportunity for

service providers to manage swelling traffic volume, thus adding value to their broadband services. The SpeedStream® 5890 Business-Class Router enables the service provider to assign priority to specified types of traffic using IP Quality of Service (QoS) features, such as DiffServ and Weighted Fair Queuing (WFQ). Thus, the service provider or its SMB customer can offer the teleworker a separate service for personal use, without affecting network performance for business-critical tasks.

Flexible, secure management

Ease of management directly affects service profitability. The SpeedStream® 5890 Business-Class Router dramatically speeds provisioning because business customers can install and configure them without assistance, using an intuitive, browser-based interface. Role-based management gives the service provider the flexibility to decide which functions the customer can access and which remain under the service provider's exclusive control. The ability to maintain users and roles centrally, in a RADIUS database, reduces the management burden as the service grows. With simple, secure management, the service provider can introduce its DSL service for SMBs and enterprise teleworkers more quickly, begin earning revenues sooner, and scale rapidly to meet their customers' increasing demands for ease-of-use and substantial functionality.

SpeedStream® 5890 Business-Class Router

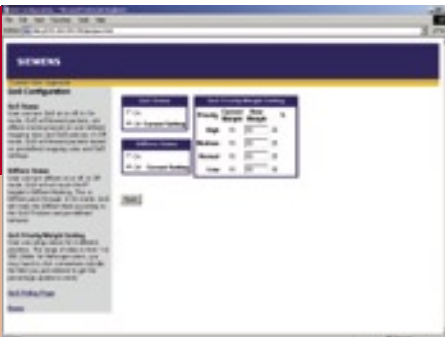


Figure 2: The easy-to-use interface accelerates setup of QoS features.

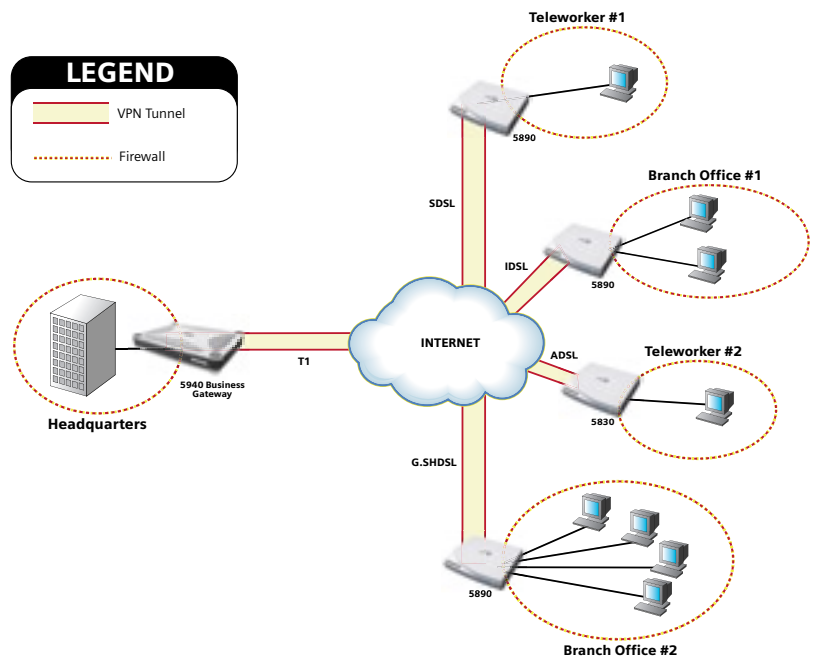


Figure 1: A high-performance Secure VPN based on the SpeedStream® 5890 Business-Class Router interconnects branch offices and teleworkers securely to the main office.

Feature

Benefit

Enterprise-Grade Security

Basic Business Firewall

Secures users' networks from suspicious packets and denial of service attacks with four preset, easy-to-implement configurations, customization capabilities, and detailed event logs

ICSA-Compliant Stateful Inspection Firewall

Provides enterprise-grade security to users who need further assurance for business sensitive data and applications

Secure Virtual Private Network with IPSec, IKE, DES, AND 3DES encryption

Secures the datapath from interception, examination, alteration or corruption by authenticating and encrypting data for all authorized network clients

DMZ Port

Enables a computer host or small network to be included in a "neutral" zone between a company's high security, private network and the outside public network

Powerful, Secure Management

Remote and local management

Maximizes opportunities for managed services by providing tools to allow management over SNMP, Telnet, HTTP, or the console port. On-board scripting engine simplifies development of standard configuration scripts for mass-deployment

Secure management

Protects administrative access and communications with IPSec and SSH for authentication and encryption

Role-based management

Enables multi-level managed services by restricting the ability to view or change the configuration with up to 5 different predefined roles (up to 15 roles in the local database)

RADIUS management authentication

Reduces the cost of management by authenticating administrators in a single database

IP Quality of Service

Weighted Fair Queuing (WFQ)

Enables value-added services by optimizing router throughput based on real-time or other latency sensitive traffic types

DiffServ

Enables differentiated services and SLAs by optimizing end-to-end throughput based on traffic types

High Availability

External dial backup

Maximizes uptime by automatically using an external modem to connect to the Internet if the WAN link or IP datapath fails

Virtual Router Redundancy Protocol (VRRP)

Maximizes uptime by automatically rerouting traffic to an alternate router if the WAN link or IP datapath fails

Simplified Deployment

Self-installation

Enables users to self-install services with no additional software and minimal knowledge of service and networking settings through any Web browser

Easy diagnostics

Simplifies self-installation by allowing users to access critical information to troubleshoot and correct issues without on-site technical help

Network address translation (NAT/NAPT)

Simplifies IP address assignment by hiding the address information of the end-user's local network

4-port 10/100 Base-T Ethernet switch

Provides optimal LAN connectivity and performance

Triple-tech DSL Routing

Enables reduced operating expenses through streamlined deployment and simplified inventory management

Reliable Investment

Single, integrated solution

Provides a single point of management which minimizes deployment and support costs and space required

Platform and operating system independent

Reduces the cost of operations, due to interoperability with the IEEE 802.3 standards

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Software Features

Security

Secure Management

- User authentication (PAP/CHAP) with PPP (RFC 1334, RFC 1994)
- Password control for configuration manager
- SNMP community name reassignment
- Telnet/SNMP port reassignment/Access Control List
- Role-based management
 - Five pre-configured templates
 - Up to 15 user names stored in the local database
- RADIUS management authentication support
- SSH and IPSec secure management channels

Basic Business Firewall

- Filter on source and/or destination IP address/port value
- Filter on SYN, ACK flags and ICMP
- Apply input, output, transmit, and receive filters on each interface
- Stateful inspection when NAT is enabled
- Logging and scripting

ICSA-Compliant Stateful Inspection Firewall

- Provides enterprise-grade firewall protection from
 - Common Denial of Service (DoS) attacks and exploits including Killwin, Land, Ping of Death, Smurf, Teardrop, Tiny Fragments, and WinNuke
 - Distributed Denial of Service (DDoS) attacks including ICMP, SYN and UDP floods
 - Other hacking attacks including IP address sweeping, IP spoofing, port scanning
- Opens ports to serve legitimate requests and automatically closes them when the request or session ends
- Full-time Stateful Packet Inspection with built-in support for most popular applications
- No pre-defined limit on the number of rules that can be created and applied
- All firewall messages can be logged to the router console and to syslog servers
- Maintains a log of the most recently dropped packets in the browser-based user interface

Secure Virtual Private Networking

- L2TP, IPSec, and L2TP inside of IPSec
- No pre-defined limit on VPN tunnels
- IPSec Tunnel and Transport modes with AH and ESP
- Internet Key Exchange (IKE) including Aggressive Mode
- DES (56-bit) and 3DES (168-bit) encryption
- Supports Perfect Forward Secrecy (DH Groups 1 and 2)
- Provides protection from replay attacks
- Implements RFCs 1321, 1828, 1829, 2085, 2104, 2401-2410, 2412, 2420, 2437, 2451, and 2631 (Groups 1 and 2)

Configuration, Management and Monitoring

- Easy setup through a browser-based user interface
- Configuration and management using HTTP, serial console, SNMP, SSH, or Telnet

- Out-of-band configuration and management using serial console port
- Supports dedicated routed management PVC in bridged and routed mode
- TFTP download/upload of new software, configuration files, and scripts
- Stores backup copy of firmware on dual bank flash memory for system recovery
- Performance monitoring data available using SNMP
- Dynamic event and history logging
- Network boot using a BootP server (RFC 2131, RFC 2132)
- Syslog server support
- Telnet Server & Client

IP Quality of Service (IP QoS)

- DiffServ traffic prioritization through ToS byte marking
- Weighted Fair Queuing traffic prioritization
- Configurable queue weighting
- Configurable traffic prioritization policies by
 - Date, day of week, and time
 - Source and destination addresses
 - Port, protocol, and application

Protocols

ATM

- Encapsulation (IP, Bridging, and Bridge Encapsulated Routing) (RFC 2684/1483)
- PPP over ATM (LLC and VC multiplexing) (RFC 2364)
- Classical IP over ATM (RFC 2225)
- Classical IP (RFC 1577)
- AAL5
- Virtual Circuit (VC) traffic shaping (CBR, PCR, UBR, VBR)
- No pre-defined limit on VCs
- I.610 OAM F5 end-to-end and segment LoopBack
- Initiates and responds to LoopBack signaling

Frame Relay

- Support of frame relay ANSI T1.618 and CCITT Q.922 formats
- DLCI support
- Inverse ARP support
- LMI support including LMI protocol discovery
- LLC auto-update
- CIR & EIR rate enforcement
- Network congestion management

PPP (RFC 1661, RFC 2364)

- PPP over Ethernet (RFC 2516)
- PPP over ATM (RFC 2364)
- Bridging (RFC 1638)
- IP Routing (RFC 1331)
- IPX Routing (RFC 1552)
- Multiclass extensions to MLPPP (RFC 2686)
- MLPPP (RFC 1990)
- Data compression of up to 4:1 (STAC™ LZS) (RFC 1974)
- Van Jacobson header compression (RFC 1144)
- Spoofing and filtering (IP-RIP, IPX-RIP, SAP, Watchdog serialization)
- Automatic IP and DNS assignment (RFC 1877)

Routing

- TCP/IP with RIP1 (RFC 1058), RIP1-compatible and RIP2 (RFC 1389), or static routing on the LAN and/or WAN
- Novell® IPX with RIP/SAP (RFC 1552)
- DHCP server (RFC 2131, RFC 2132), relay agent (RFC 1542), and client (RFC 2132)
 - Automatically defers to other DHCP servers on the network
 - Automatically adjusts to changes in LAN IP addressing
 - No pre-defined limit on DHCP clients
- DNS relay
- Multiple subnets on the LAN support NAT, RIP1, RIP2, ARP and IP filters
- Virtual routes can be defined based on user IP addresses or ranges

IP Address Translation

- Network renumbering (RFC 1631)
- Network Address Translation (NAT/PAT/NAPT)
- NAT passthrough support for numerous applications including IPSec, PPTP, H.323, SIP and NetMeeting
- Supports public Web and e-mail servers with NAT

Hardware Features

WAN Interface

- G.SHDSL, 2-wire
- SDSL, 2B1Q
- IDSL, 2B1Q

LAN Interface

- Built-in 5-port 10/100 Base-T Ethernet switch with link status LED for each port
- Auto detects full or half duplex operation
- Auto detects regular or crossover cable for easy connection to a switch or hub
- Ports can be configured individually and manually for:
 - Enabling/disabling
 - Speed and duplex
 - Port mirroring

Serial Interface

- One asynchronous serial console port

Product Enclosure

- Front panel LED status for Power, Test, WAN and LAN
- Rear panel LED status for each Ethernet port link
- Installation options: Desktop or wall-mount

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