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Product Bulletin

Nortel VPN Router 5000

Delivering security for the Internet

The rise of the Internet provides enterprises with a unique opportunity to realize cost savings in their corporate communications. But the Internet is not secure. Enterprises with mission-critical Internet applications must protect the data they transmit, as well as guard their internal networks from outside intrusion. Legacy routers — the traditional means of Internet connection — lack the ability to meet these security needs without expensive add-ons and performance overhead. Nortel's VPN Router 5000 is a high-performance, highly-redundant solution that delivers the IP security enterprises need today with the flexibility to easily upgrade to new services in the future.



Nortel VPN Router 5000

The Nortel VPN Router 5000 is a next-generation platform that offers secure high-performance connectivity to the Internet or managed IP networks. Designed for enterprise headquarters and large regional site environments, the VPN Router 5000 provides IP routing, Virtual Private Networking (VPN), stateful firewall, encryption, authentication, directory and policy services, Quality of Service (QoS) and bandwidth management in a single integrated platform.

As a highly redundant and modular solution, the VPN Router 5000 flexibly addresses enterprise data center and head-end needs for secure Internet connectivity, including VPN communications, stateful firewalling and IP routing. With a comprehensive set of secure IP services, along with dedicated hardware-based security processors, the VPN Router 5000 allows enterprises to deploy needed services today with the flexibility and power to add new ones in the future.

With high-speed LAN (10/100 Mbps and Gigabit Ethernet) and comprehensive WAN options — including T1/E1, V.35/X.21, ISDN and HSSI, along with Frame Relay support — the VPN Router 5000 can act as the all-in-one “IP edge” solution for secure connection to the Internet or IP network.

Redundant hardware design

The VPN Router 5000 offers a highly redundant architecture with built-in back-up hardware components to ensure maximum uptime. The VPN Router 5000 platform comes with dual power supplies with separate line cords, dual storage media and dual processors. Back-up power and storage components can continue to operate even if the primary should fail. The platform is optimal for data centers and headquarters sites where 7 x 24 operations are critical.

High-performance

The VPN Router 5000 is designed for maximum performance. With powerful dual 2.2 GHz processors, the unit includes standard encryption accelerator hardware and can support a second encryption accelerator to further boost VPN throughput. Its state-of-the-art

hardware and software enables the VPN Router 5000 to provide optimal VPN, stateful firewall and IP routing performance with significantly improved throughput over previous VPN Router models.

Low total cost of ownership

With its high-performance design, integrated LAN and WAN interfaces and wide-variety of secure IP services, the VPN Router 5000 is a cost-effective solution for large enterprise and data center sites. A single VPN Router 5000 can address a range of services (e.g., router, VPN gateway, stateful firewall) that would otherwise require multiple discrete devices to solve. Furthermore, new IP services can be easily added. Its software licensing system allows a VPN Router 5000 to be deployed as a VPN gateway, router or firewall and new IP services to be added via a license key — simplifying the upgrade process.

Security by design

The VPN Router 5000 incorporates the same Secure Routing Technology (SRT) framework available across the VPN Router product line. SRT tightly integrates security and IP services within a

single VPN Router device and enables a consistent security structure across those services. This provides scalability and high performance even when running multiple IP services in the same device. SRT further delivers key features — such as dynamic routing over IPSec-based VPN tunnels, common security policies across VPN, routing and firewall services, and a flexible licensing scheme that enables new IP services to be turned up on demand.

As a market leader in IP Virtual Private Networking (IP-VPN), Nortel VPN Routers have been delivering on the promise of secure end-to-end VPNs for years. The VPN Router 5000 delivers these market-leading VPN capabilities, whether for remote VPN client access or in support of branch or remote site VPNs to other VPN Router gateways.

Flexible IP services

As a standards-based solution, the VPN Router 5000 can interoperate with existing routing, authentication, directory and security systems and can bridge the transition to new IP services. It can be deployed as an Internet access device, secure VPN gateway or firewall solution and be easily upgraded with additional services. Advanced routing software (e.g., OSPF, RIP) enables VPN Routers to interoperate with existing routing infrastructure. And support for LDAP, RADIUS and X.509 digital certificates enables VPN Routers to interoperate with existing authentication and/or directory systems.

Comprehensive management services

The VPN Router 5000 offers comprehensive management services common across the VPN Router line. These include the VPN Router Multi-element Manager, a centralized provisioning solution for up to 2,500 VPN Router devices which can store and automatically update remote VPN Router devices. Device management also includes Web-based and command-line configuration utilities, SNMP monitoring and alerts, as well as a rich set of security and system logging tools that let administrators track all transactions and events.

Key VPN Router 5000 features/benefits

Features	Benefits
Extensive VPN and security capabilities	Broad support for both site-to-site and remote access VPNs, flexible internal/external authentication options, full PKI support, wire-speed encryption (3DES and AES), firewall, DOS protection
Redundant design	Dual hot-swappable power supplies, disks and CPUs provide maximum uptime in case of failure of any single component
Modular WAN I/O	Can connect directly to wide area network without requiring separate router or access device; additional I/O slots enable secondary WAN card for back-up purposes
Dial back-up support	Can establish connection over a back-up link (via ISDN) if primary Internet or IP connection should fail
VoIP-friendly	Advanced QoS and integrated SIP application layer gateways (ALGs) ensure the secure and reliable transport of VoIP traffic, including transport across VPN Router NAT and stateful firewall boundaries
Stateful packet firewall	High-performance firewall license allows VPN Router to provide network perimeter protection without requiring purchase of a separate standalone device
Advanced routing	OSPF, VRRP and bandwidth management services allow design of robust, high-performance and highly available IP-VPN networks that can scale
Dual encryption accelerator support	Improved VPN throughput with hardware acceleration. Second accelerator card offers redundancy and additional performance.

Technical specifications

Nortel VPN Router 5000	
IP routing services	<ul style="list-style-type: none"> • IPv4, v2, Open Shortest Path First (OSPFv2), Border Gateway Protocol (BGP-4) • 802.1Q VLAN routing • Policy-based routing (next hop traffic filters) • Virtual Router Redundancy Protocol (VRRP) • Data Link Switching (DLSw); SNA encapsulation within IP • Dynamic Routing over IPSec (RFC 3884)
VPN tunneling protocols	<ul style="list-style-type: none"> • IPSec, including authentication header (AH), encapsulating security protocol (ES) and Internet key exchange (IKE) • Point-to-point tunneling protocol (PPTP), including compression and encryption • Layer 2 Tunneling Protocol (L2TP), including L2TP/IPSec • Secure Sockets Layer (SSL) v2.0, 3.0 and Transport Layer Security (TLS) with SSL VPN Module
Encryption	<ul style="list-style-type: none"> • Data Encryption Standard (DES) • Triple DES (3DES) using 3 independent 56-bit keys; 168-bit key length (effective strength of 128 bits) • Advanced Encryption Standard (AES); 128-bit and 256-bit versions • RC4
User authentication services	<ul style="list-style-type: none"> • X.509 Digital Certificates and Smart Cards (support for all major vendors and MS-CAPI) • Remote authentication dial-in user services (RADIUS) • Hard and soft token support (e.g., SecureID and AXENT) • User name and password and NT Domain Login • Internal or external lightweight directory access protocol (LDAP)
WAN protocols and services	<ul style="list-style-type: none"> • Point-to-Point Protocol (PPP); including PPP over Ethernet (PPPoE) • Frame Relay (including FRF.9 compression and FRF.12 fragmentation) • ADSL (G.DMT, G.Lite, ANSI T1.413) with support for PPP and PPPoE over ATM • Dial-on-demand and dial back-up services via integral V.90 modem or ISDN
Bandwidth management; QoS	<ul style="list-style-type: none"> • User and group-level configurable minimum bandwidth settings • Eight forwarding priority queues • DiffServ (Differentiated Services) with code point marking • 802.1p/DSCP (Differentiated Services Code Point) mapping • Multi-level Random Early Detection (MRED) • Resource Reservation Protocol (RSVP)
VoIP-friendly features	<ul style="list-style-type: none"> • Secure IPsec transport of VoIP traffic • SIP Application Layer Gateway (ALG) for NAT and stateful firewall • Cone NAT (for Nortel Unistim protocol) with NAT "hairpinning" • FRF.12 fragmentation • Differentiated Services (DSCP) marking/mapping • DSCP marking by Nortel VPN Client
Data compression	<ul style="list-style-type: none"> • IPComp (RFC 3173) for encrypted and non-encrypted traffic • FRF.9 Frame Relay compression
Accounting	<ul style="list-style-type: none"> • Event, system, security and configuration logging • Internal and external RADIUS accounting • Automatic archiving to external system
Management	<ul style="list-style-type: none"> • Nortel VPN Router Multi-Element Manager provides multi-box provisioning for up to 2,500 VPN Router devices • Full Web browser-based HTML configuration • Nortel Command Line Interface • Easy Install utility for simple remote VPN Router set-up • SNMP monitoring and alerts • Three levels of administrator access; role-based management to separate service provider and end-user
Stateful firewall	<ul style="list-style-type: none"> • Multi-layers stateful packet inspection supporting over 100 network application protocols, including TCP, UDP, FTP, HTTP, H.323, RealAudio, Java and ActiveX • Defense against major "hacker" attacks, including DOS, SYN flood, Smurf, Ping, Spoofing, Fraggle and ICMP unreachable • Extensive and customizable logging options • NAT, Proxy and end-user authentication • Unlimited firewall users and policies for tunneled and non-tunneled traffic
Nortel VPN Client	<ul style="list-style-type: none"> • IPSec (with DES, 3DES and AES encryption) • Microsoft Windows 95, 98, 2000, ME, NT and XP-based clients (free/unlimited) • Macintosh, IBM-AIX, SUN-Solaris, HP-UX, Linux and Windows Mobile (Pocket PC) via optional license
Endpoint security	<ul style="list-style-type: none"> • Tunnel Guard enforces corporate security policies on endpoint PCs by checking for anti-virus, personal firewall or any application software (e.g., patches) before allowing VPN connection
SSL VPN	<ul style="list-style-type: none"> • Support for up to 1000 secure Web browser sessions (with SSL VPN Module) • Access from Microsoft Internet Explorer, Netscape Navigator and Mozilla browsers • Universal Access Portal provides transparent IPSec or SSL single sign-on by end-users • Authentication via RADIUS, LDAP, X.509 certificates • Auto-logout and cache-cleaning of files and history
Certifications	<ul style="list-style-type: none"> • ICSA (International Computer Security Association) 1.0d certification (IPSec) • FIPS 140-2 (Federal Information Processing Standard for Security) • Virtual Private Network Consortium (VPNC) Basic Conformance Testing (IPSec)

Technical specifications — physical and operational

VPN Router 5000 — up to 5000 VPN Tunnels

- **Memory**

- **Standard** — 512MB
- **Maximum** — 1.5 Gigabyte

- **Dual 2.2 GHz processors**

- **Five PCI expansion slots**

- **Dual, redundant, auto-switching power supply system with dual line cords**

- **Dual, redundant storage system**

- **LAN/WAN interfaces:**

- Standard**

- 1 x 10/100 Mbps Ethernet port
- 1 x 10/100/1000 Mbps (GigE) port
- Encryption accelerator card
- Management/console port (DB-9)

- Optional**

- Additional 10/100Base-T Ethernet or 1000Base-SX/T (GigE) Ethernet
- 1-port T1/E1 CSU/DSU
- 4-port T1/E1 CSU/DSU
- V.90 Dial Modem
- ISDN BRI (S/T and U interfaces)
- ADSL
- V.35/X.21/RS-232 Serial
- 56/64K CSU/DSU
- High-speed Serial Interface (HSSI)

- **Second encryption accelerator card (option)**

- **SSL VPN Module (option)**

- **Software:**

- Standard**

- Nortel VPN O/S software with 5000 VPN tunnels and IP routing (RIPv2)
- Nortel VPN client software for MS-Windows with unlimited distribution license
- CD and on-line HTML documentation

- Optional licenses**

- Stateful firewall
- Advanced routing (OSPF, VRRP, bandwidth management)
- Premium routing (Advanced routing plus BGP-4)
- Data Link Switching (DLSw)
- VPN Tunnel upgrade (from 5 to 500 tunnels) for Secure Router bundle
- VPN Client for MAC and UNIX

Length: 23.0 in. (58.4 cm)

Width: 17.25 in. (43.8 cm)

Height: 5.25 in. (13.3 cm)

Weight: 43 lb (19.5 kg)

Electrical: 100-127/200-240 VAC (x2), 6.2/3.1 A, 50-60 Hz

Temperature: 32°-104° F (0°-40° C)

- Relative humidity:

- 10-90% noncondensing
- 1194 BTU/hour @ 240 VAC

- Regulatory approvals**

Safety: CSA 22.2 No. 60950, UL 60950, EN/IEC 60950

EMC: (CE) EN55022, Class A, EN55024 including EN61000-3-2 and EN61000-3-3 CISPR22 (including AN/NZS), FCC Part 15 Class A (US), ICES-003 (Canada), VCCI (Japan)

Nortel is a recognized leader in delivering communications capabilities that enhance the human experience, ignite and power global commerce, and secure and protect the world's most critical information. Serving both service provider and enterprise customers, Nortel delivers innovative technology solutions encompassing end-to-end broadband, Voice over IP, multimedia services and applications, and wireless broadband designed to help people solve the world's greatest challenges. Nortel does business in more than 150 countries. For more information, visit Nortel on the Web at www.nortel.com.

For more information, contact your Nortel representative, or call 1-800-4 NORTEL or 1-800-466-7835 from anywhere in North America.

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