NORTEL

Product Brief
Nortel Business Services Gateway 8

- **Simplify network deployment**, service provisioning and management with the deployment of one integrated device for secure broadband routing, Ethernet switching, Wi-Fi access and a Survivable SIP Line Gateway.

- **Bolster your network** with an industry-leading secure router with processing capabilities that ensure high performance and availability that are critical for your business applications, whether data, voice or video.

- **Choose a flexible solution** that can be part of an SMB managed services offering such as Nortel's IP Powered Business Solutions.

Take any of the above and…

- **Prepare your business' IT infrastructure for unified communications applications** that can support a distributed and mobile workforce.

One box. Many capabilities. Business made simple.

Designed to deliver simplification through integration, the Nortel Business Services Gateway 8 drives the complexity out of networking while bringing together everything your small business needs —

IP connectivity, data communications, security, mobility and more — all in a single box.

A remarkably versatile, flexible and multi-function device, the Business Services Gateway 8 can assume many roles, including secure broadband router, security appliance, Ethernet switch and Wi-Fi access point. The device can also be used as a Survivable Session Initiation Protocol (SIP) Line Gateway that delivers application-aware Quality of Service (QoS) and multi-service classification capabili-

ties, preparing your IT infrastructure for unified communications.

For uninterrupted communications in, out and around your small and medium business (SMB), this high-performance device supports a single Fast Ethernet WAN port and seven Fast Ethernet LAN ports, one Gigabit Ethernet and an integrated Wi-Fi access point — so you're covered any way you look at it. With Business Services Gateway 8, as with all other Nortel products, you can count on industry-leading reliability to ensure that it's business as usual regardless of what other challenges you might face.

Because traffic is more than voice...

As communications become more and more IP-based, SMB networks need to ensure premium classification and treatment of voice in addition to other business-critical applications. The new reality is that email, web content, video, file transfers and streaming media can be just as critical as voice communications. Fortunately, Business Services Gateway 8 is engineered to support multiple applications and services, simultaneously.

Unlike other market offerings available today that automatically give priority treatment to voice, the Business Services Gateway 8 puts you in control, by allowing you to prioritize and control all of your unified communications applications in a manner that aligns with your business strategy and objectives.

The Business Services Gateway can:

- Support multiple levels of application service delivery (up to eight), even in a congested broadband network
- Differentiate the applications on your network
- Ensure predictable application performance
- Maximize bandwidth utilization

Small network. Mandatory performance. Big applications. No problem.

The Business Services Gateway 8 is specifically designed to integrate high-speed secure broadband access, advanced security services, wired and wireless switching and Survivable SIP Line Gateway (for hosted SMB and enterprise branch offices) with an analog terminal adapter (ATA) and single PSTN trunk into one converged and cost-effective solution. Market-leading application-aware QoS and bandwidth management features have also been included to ensure the Business Services Gateway 8 delivers carrier-class quality for all your applications and services.

Figure 1. Nortel Business Services Gateway 8
Nortel's multiservice gateway portfolio for SMBs is enhanced with the Business Services Gateway 8 to offer more choice and value than ever before — supporting an increased number of remote and standard users, wireless access and more.

To ensure the successful delivery of today's mixture of communication applications and traffic types, the Business Services Gateway 8 is designed with intelligence to manage each application's specific requirements to ensure performance delivery of the right applications at the right thresholds.

Highlights

- An integrated data CPE solution that functions as a secure broadband router, wired and WLAN switch, and Wi-Fi access point
- Advanced security services including Stateful Firewall, Virtual Private Network, Full Network Address Translation (NAT) and Intrusion Detection
- Gigabit Ethernet uplink port for wire-rate connectivity to a Nortel Business Ethernet Switch
- Integrated Wi-Fi (802.11b/g) capability to enable wireless access, drive reachability and improve productivity
- Industry-leading network processor providing firewall, packet processing and application support
- Intelligent application-aware QoS that classifies, polices, shapes and queues all communications into a single broadband link
- Survivable SIP Line Gateway with integrated analog terminal adapters for SIP-based SMB managed services and enterprise branch offices

Table 1. Business Services Gateway portfolio models

Interface	Business Services Gateway 4	Business Services Gateway 8
WAN	1 Fast Ethernet port	1 Fast Ethernet port
LAN	4 Fast Ethernet ports	7 Fast Ethernet ports and 1 Gigabit Ethernet port
FXO	1 analog port (survivable mode; outbound only)	1 analog port (normal and survivable mode; inbound and outbound)
FXS	1 station port	2 station ports
VPN	10 tunnels (branch only)	64 tunnels (branch and client)
WLAN	N/A *BAP 120 required	Integrated 802.11b/g Access Point
Routing	Basic (Static and RIP)	Advanced (RIP, OSPF, VRRP)
SIP*	SIP Session Controller and FXO/FXS User Agent	SIP Proxy, Registrar and FXO/FXS User Agent
Concurrent SIP sessions*	10	50

* For hosted SMB and enterprise branch offices.

Secure your network infrastructure

The Business Services Gateway 8 delivers a sophisticated set of security applications to protect your network, information and communications. Through a high-performance stateful packet inspection firewall, Business Services Gateway 8 can control traffic at wirespeed based on predefined security policies, ensuring that only authorized applications, devices and people have access to your network.

Business Services Gateway 8 also supports secure connectivity with VPN-connected devices outside the main office. With IPSec tunneling, up to 64 branch-to-branch and client mode tunnels are secured by encrypting and authenticating all IP communications into packets at the network layer, thus ensuring your remote workers and sites are securely connected.

Business Services Gateway 8 also offers high-performance intrusion detection with rate limiting to control incoming packet streams and flooding prevention that stops Denial of Service (DoS) attacks, ensuring that your business is better protected from malicious attempts to enter or disrupt your network.

Remotely manage your network

The Business Services Gateway 8 supports voice and data quality monitoring and full remote management through an intuitive, web-based Graphic User Interface (GUI), Command Line Interface (CLI) and third-party SNMP-based network management applications.

How can I use the BSG? It's a tale of two deployments.

This feature-rich multiservice router and gateway can be deployed as a powerful data networking customer premises equipment (CPE) device — *or* as part of a managed/hosted service offering from a communications service provider. Let's look at how the two key deployments of the Business Services Gateway (CPE and as part of a managed/hosted services solution) play out.

The Business Services Gateway — as a robust multiservice router and gateway CPE device — puts you in the driver's seat of your converged data infrastructure.

Engineered with the unique needs of SMBs in mind, the Business Services Gateway 8 wears many hats — secure broadband router, Ethernet switch and Wi-Fi access point. It's also flexible and scalable, allowing you to easily add more capacity, extra features and functionality, and new applications as your business needs evolve.

Secure broadband router

With its industry-leading network processor architecture, the Business Services Gateway 8's robust routing capabilities and throughput ensure sufficient resources and performance that are critical for your business' data, voice and video applications.

Ethernet switch

Based on open standards, the Business Services Gateway 8 is a highly compatible device that works with your existing hardware infrastructure, ensuring that

your current investment is protected today and tomorrow. As your business needs evolve, you can easily expand IP connectivity to more users by adding more Business Ethernet Switches.

Wi-Fi access point
Providing access for up to 16 active wireless users, the Business Services Gateway 8 extends communications reach to individuals on the move within the workplace. This means that users can stay in touch with the features and capabilities of their desktop communications for enhanced productivity and greater employee satisfaction. You can extend wireless coverage simply by adding Business Access Points.

Nortel Business Communications Manager

The Business Communications Manager is an industry-leading hybrid IP-PBX solution that provides small and medium businesses with advanced communications capabilities such as

robust telephony features, voice messaging and unified messaging, IP networking, Internet access, contact centers, mobility solutions and IP telephony. With an easy-to-use and highly flexible architecture, the Business Communications Manager allows SMBs to benefit from convergence capabilities that were previously only available to much larger organizations.

Nortel Business Ethernet Switches

The Business Ethernet Switch portfolio provides the building blocks for creating a data-information infrastructure that supports the business requirements of small to medium-sized businesses. These 10/100 Mbps and 10/100/1000 Mbps Layer 2 Ethernet switches provide an easy and affordable way to get high connectivity across PCs, printers, servers, routers, IP Phones, WLAN Business Access Points, the Business Communications Manager and

other devices throughout your office. In the context of Business Services Gateway 8 deployments, the Business Ethernet Switch products complement the LAN capabilities of the Business Services Gateway 8 to offer a solution for expanding the number of LAN connected devices, for providing Power over Ethernet and/or Gigabit Ethernet connectivity where desired, and also providing LAN networking capabilities like VLANs and Spanning Tree.

Nortel Business Access Point 120

The Business Access Point 120, which is specifically designed for small to medium-sized businesses, is an independent wireless LAN (WLAN) access point that provides users secure network access from anywhere, at any time. By connecting it to the Business Services Gateway*, you can easily scale and expand theBusiness Services Gateway 8's wireless coverage. Seamless roaming

Figure 2. Typical Nortel Business Services Gateway 8 deployment
Package the Business Services Gateway with other Nortel SMB products for an end-to-end converged voice and data infrastructure.

Hybrid — Digital/IP UniStim solution
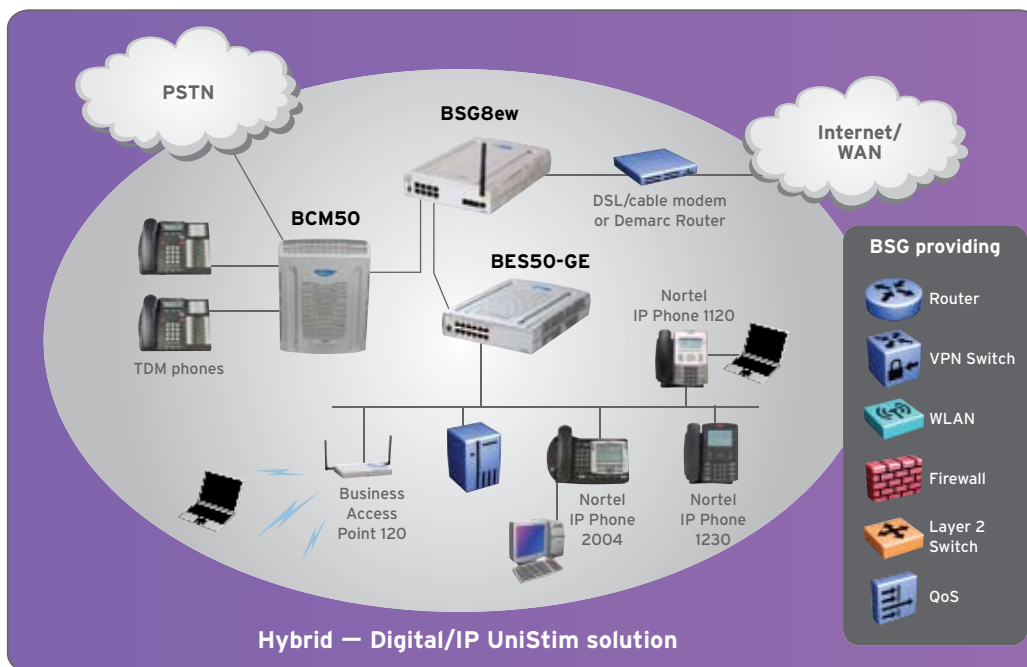
capabilities enable workers on the move to be more productive, more flexible and more accessible.

Nortel SMB Client portfolio

Nortel offers a wide range of user-friendly business sets to fit into any niche in the business, from the front desk to the conference room or for supervisors who spend their days on the phone, to mobile workers who are rarely at their desks.

The Business Services Gateway is an enabler of Managed and Hosted Services where all you need to do is pay the monthly service bill.

Another way to leverage the Business Services Gateway is through a third party. Business Services Gateway is part of Nortel's Managed Services portfolio — bundled offerings called IP Powered Business Solutions for Small and Medium Businesses. The solution packages are ideal for those who want to leverage a fully-tested, ready-to-deploy, easy-to-scale, end-to-end solution that includes everything needed to support unified communications by simply subscribing to these services from a communications service provider.

Survivable SIP Line Gateway

The Business Services Gateway 8 supports a Survivable SIP Line Gateway that facilitates connectivity for up to 100 SIP-based registered clients with support for 50 simultaneous sessions, so SMBs can take full advantage of VoIP and other advanced SIP services. Moreover, integrated analog terminal adapters (ATAs) ensure business continuity via a failover to a PSTN that's 'always on', and connectivity for up to two analog stations.

Because of the Business Services Gateway's application-aware QoS and remote manageability, your service provider can manage everything for you, including IP broadband access, telephony services, security services (Firewall, VPN) WLAN — virtually everything you need to support a unified communications infrastructure and its applications.

Within a Managed Services deployment, you can package the Business Services Gateway with other Nortel SMB products for an end-to-end IT infrastructure that's ready for unified communications.

Nortel Communication Server 2000 Session Server Lines (SSL)

Nortel Communication Server 2000 SSL is an application and communications server that seamlessly combines voice, data and video to make all of today's communications more efficient and effective. It transforms the way users communicate, delivering multimedia applications that enhance productivity and provide real-time

Figure 3. Managed Services deployment

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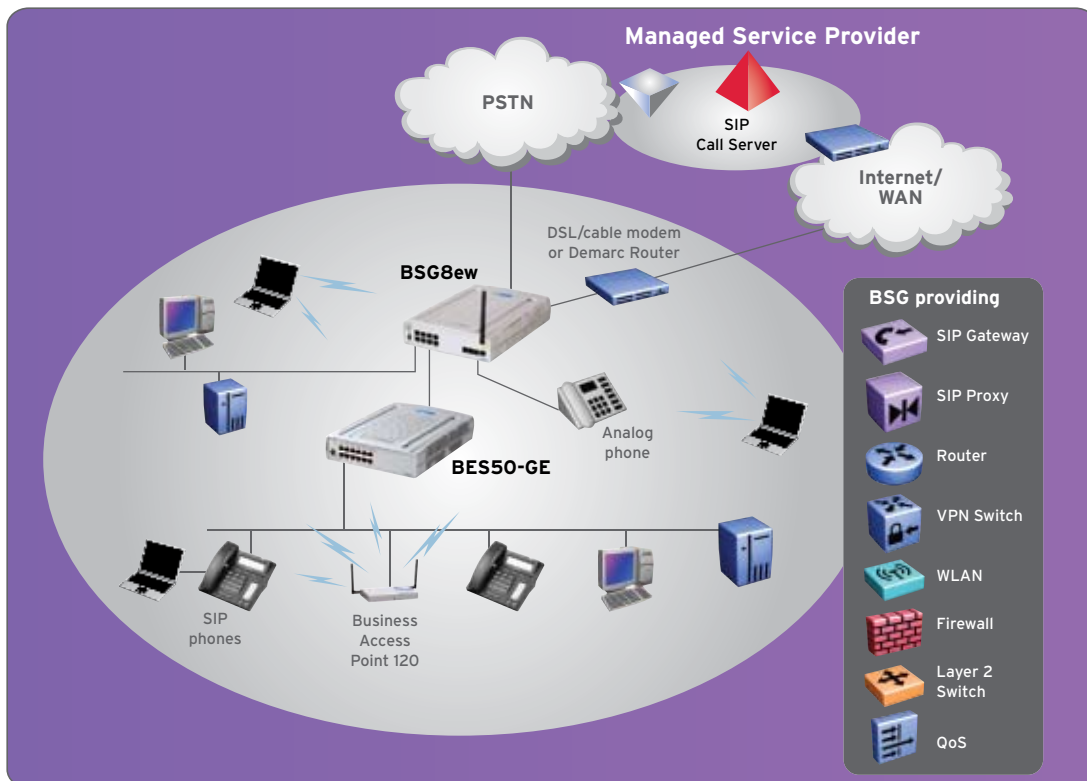
collaborative communications, such as presence, instant messaging, chat, voice or video calling, voice or video conferencing, collaboration tools and personalized web portal.

Nortel Communication Server 2000 SSL is hosted in the carrier's network and is best paired with the Business Services Gateway on-site, providing end-to-end QoS and local calls survivability in case of WAN link failure. It enables SMBs to avoid upfront PBX capital investments and ongoing operational costs.

Nortel SIP Multimedia PC Client

The SIP Multimedia PC Client[1] is a PC-based user application that provides a wealth of powerful communications features — from traditional telephone service to advanced multimedia communications such as video calling, instant messaging, call screening, real-time call disposition, conferencing, file sharing and white-boarding. Advanced web communications include pushing web pages and co-browsing the web with customers, co-workers and associates.

LG-Nortel IP Phone 6800 Series

These fully-featured, business-class SIP phones combine cost-effectiveness with advanced functionality. Each of the desk sets has been purpose-built for SMBs and offers a full range of big-business features available at a small-business price. The portfolio includes:

- The IP Phone 6804, an entry-level set for common areas
- The IP Phone 6812, an intermediate level phone that meets the needs of most employees

- The IP Phone 6830, a more professional-level offering for power users and administrative personnel

In addition, both the 6812 and 6830 models offer an optional add-on attendant for expanded auto-dialing (LG Nortel Direct Station Select 6848).

Nortel Softphone 3455

The Nortel Softphone 3455[2] features a dialpad-centric interface that allows users to manage their voice, video, Instant Messaging (IM) and presence applications on their desktop, for an easy transition from a traditional desk set to unified communications.

Additional products

As in the CPE arrangement described above, Business Ethernet Switches (LAN ports) and Business Access Points can be added to further scalability and wireless coverage respectively.

Summary

As the latest addition to the Business Services Gateway portfolio, the Business Services Gateway 8 reinforces Nortel's commitment to delivering converged, cost-effective solutions that align with the needs of small and medium businesses.

Business Services Gateway 8: It's all in the numbers...

- **4,096** MAC addresses
- **2,000** Firewall sessions
- **256** OSPF Routing Table
- **256** RIP Routing Table
- **128** IP interfaces across all DHCP server pools
- **100** SIP endpoints registered
- **100** Firewall Policies and ACL Filters
- **64** VLANS
- **64** IPSec VPN tunnels (Branch and Client mode)
- **63** Wi-Fi registered users
- **50** Concurrent SIP sessions
- **16** Active Wi-Fi clients
- **8** QoS hardware-based egress CoS queues per port
- **7** FE 10/100 BaseT LAN interfaces
- **5** DHCP pools supported
- **4** WLAN SSIDs
- **1** GE 1000 BaseT LAN interface
- **1** FE 10/100 BaseT WAN interface

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[1] For Communication Server 2000.
[2] IOT with third-party SIP Server.

LAN
- 7 Fast Ethernet ports – 10/100 BaseT
- 1 Gigabit Ethernet port – 1000 BaseT

WAN
- 1 Fast Ethernet 10/100 BaseT port (However any LAN port – *except Port 7* – can be converted to a WAN port in software)

Integrated ATA
- 2 FxS – Analog station and/or fax machine connections
- 1 FxO – Analog trunk – PSTN connection

WLAN
- 802.11b/g
- WEP/WPA/WPA2/WMM
- 63 Associated Clients
- 16 Active Clients per BSG8ew
- 4 SSIDs

Voice features
- SIP Proxy/Registrar with survivability
- Up to 100 SIP endpoints registered
- 50 concurrent SIP sessions
- Call Admission Control
- User Agent SIP
- PSTN call routing (Normal and Failure mode)
- 911 and Emergency Services Support (via FxO port)

SIP features
- MWI (Message Waiting Indicator)
- DND (Do Not Disturb)
- Call Forward
- Transfer
- Conference
- VAD (Voice Activated Dialing)
- On-Hold
- Call Waiting

Advanced application-aware QoS
- 8 Hardware-based queues to support Multi-Service Application Performance
  - 3 strict priority queues
  - 5 configurable WRR queues
  - Rate limiting
  - 802.1p
  - DiffServ
  - TRTCM
- Multi-application classification, policing, shaping and marking
- Maximize bandwidth utilization

Performance
- Industry-leading network processor providing high-performance firewall, encryption and packet processing, and application support
- Wire-rate Ethernet Forwarding
- Throughput: 1.05 Gbps total throughput

Network management
- Authentication MD5, RADIUS, SSL,TACACS+
- CLI Telnet, SSHv2, HTTP and HTTPSDHCP (Client, Server and Relay)
- SNTP
- DNS
- SNMPv1/v2/v3
- Syslog

Security
- Stateful firewall
- Up to 64 VPN (IPSec) tunnels (Branch, Client or Transport mode)
- Hardware accelerated VPN AES, SHA, MD5, 3DES
- Full NAT
- Intrusion Detection System

Fully-managed switch
- VLAN All Ethernets including WLAN
- VLANs
- Rate Limiting
- Spanning Tree (MSTP, RSTP)
- Storm Control
- Statistics RMON, MIB-2
- 802.1x
- IGMP Snooping

Routing
- RIP
- OSPF
- Route Re-distribution
- VRRP

Physical dimensions
- Height 2″ (5.1 cm)
- Width 8.5″ (21.6 cm)
- Depth 12.5″ (31.8 cm)

Power requirements
- The Business Services Gateway 8 is powered with a 60W 12 VDC power adapter compliant to IEC320-C13 AC connect

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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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