



Product Brief

Nortel Business Ethernet Switch 50

Enable employees at your business to share information, ideas and resources easily, securely and efficiently — without straining your IT budget.

Benefit from enterprise-class features that will help you build a voice-enabled IP network.

Do it with a desktop Ethernet switch that provides the port density and simplicity you need to connect IP phones, laptops, printers — and more for enhanced user productivity and greater cost savings.

Whatever the size of your organization, real-time, high-speed connectivity between the people, applications and networked devices you depend on each day is not only important — it's also crucial for staying in business. If you're a small business, however, the reality probably is that

you don't have the same budget, networking facilities and IT resources that come with being a large enterprise. So how do you get big-business connectivity at small-business price? Through a robust yet simple network infrastructure that supports the advanced wireless and IP communications required to connect your employees — on your terms.

Nortel Business Ethernet Switch 50

The Nortel Business Ethernet Switch 50 family of Layer 2 Fast Ethernet and Gigabit Ethernet switches provides an easy and affordable way to bring high-speed desktop connectivity to your organization. Designed specifically for small businesses with 10 to 50 employees, these desktop switches offer enterprise-grade features simplified for your needs, Power

over Ethernet (PoE) and simple management through an easy-to-use web interface.

The perfect companion to the Nortel Business Communications Manager 50, the compact Business Ethernet Switch 50 delivers an office-in-a-box solution for small businesses that want a high-value combination of performance, ease of use and management simplicity — all at an affordable price. All switches were designed to operate in the same desktop configuration as the Business Communications Manager 50.

The Nortel Business Ethernet Switch 50 series of desktop switches joins the Nortel Business Ethernet Switch 100 and 200 series family to round out the Nortel SMB portfolio, which is made up of award-winning products that bring all the benefits of convergence to your organization.

Nortel Business Ethernet Switch 50

Model	Port configurations
BES50FE-12T PWR	12 x 10/100 Mbps ports (IEEE 802.3af PoE on 12 ports)
BES50FE-24T PWR	24 x 10/100 Mbps ports (IEEE 802.3af PoE on 12 ports)
BES50GE-12T PWR	12 x 10/100/1000 Mbps ports (IEEE 802.3af PoE on 12 ports)
BES50GE-24T PWR	24 x 10/100/1000 Mbps ports (IEEE 802.3af PoE on 12 ports)

All models are desktop switches with the same packaging as the Business Communications Manager 50, and support wall-mount and rack-mount options as well.



Nortel Business Ethernet Switch 50

**Easy to install.
Easy to administer.**

Installation hassles and complexity are things of the past, thanks to an intuitive web user interface that makes it easy to set-up and administer the Business Ethernet Switch 50. Plug-and-play capabilities such as Auto-speed Negotiation of speed and duplex mode, Auto-MDI/MDIX, easy-to-read LEDs, as well as support for a default IP address and DHCP for automatic IP address allocation make the installation and set-up process simple. Users also have the power to set up advanced features such as VLANs, PoE, IEEE 802.1X Authentication and Application Filtering in the most economical way to facilitate a truly converged network.

Reduce costs with Power over Ethernet (PoE)

The Business Ethernet Switch 50 comes complete with support for IEEE 802.3af Power over Ethernet (PoE) on all models. With this in-line power functionality, the Business Ethernet Switch 50 can provide power to PoE devices such as Voice over IP (VoIP) handsets or

- > Designed as an add-on to the Nortel Business Communications Manager (BCM) 50 to provide powered Ethernet ports for IP phones, security cameras and WLAN access points.
- > Easy-to-use web interface and out-of-the-box default settings simplify configuration and administration.

wireless LAN access points and security cameras — all through a single Ethernet cable. And depending on the number of attached devices, the switch can supply up to a maximum of 15.4W of power per port.

Be ready — with convergence-ready functionality

In addition to PoE, the Business Ethernet Switch 50 family also supports Traffic Prioritization. Through this feature, the Business Ethernet Switch 50 is able to put traffic into different priority queues by reading a packet's 802.1p or DSCP prioritization value, ensuring that mission-critical applications such as voice are delivered in a timely manner and treated differently than non-time sensitive data.

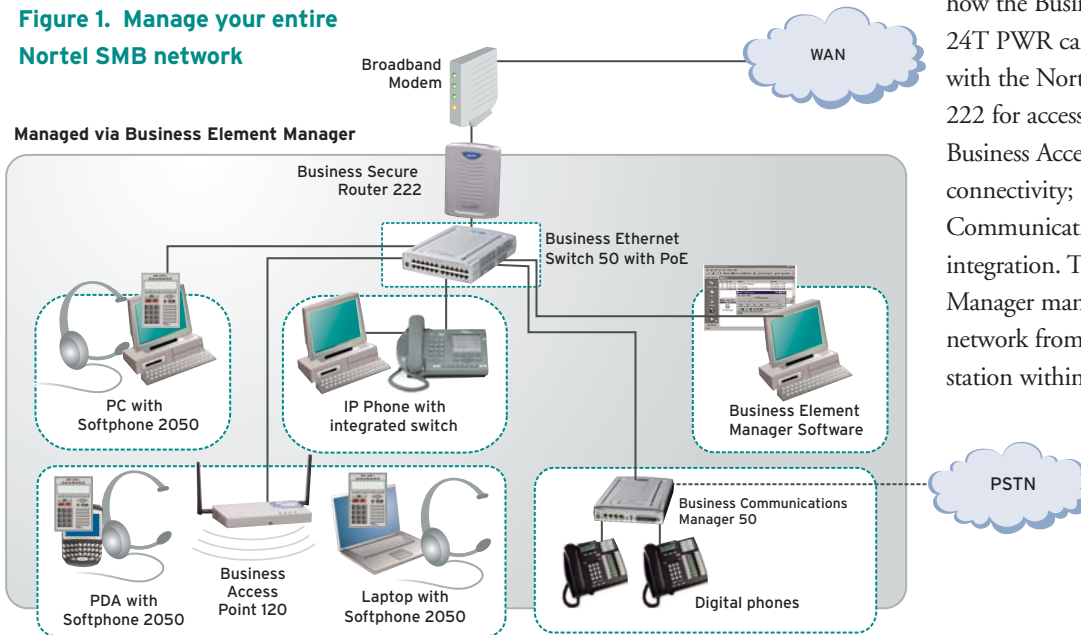
Enjoy simplified management

Managing the Business Ethernet Switch 50 family is made easy through a web-based user interface and the Nortel Business Element Manager. This powerful tool enables simplified management for the entire Nortel SMB portfolio — including the Business Ethernet Switch 50 family — through the use of one consistent, familiar web interface. It's a one-stop solution that enables you to monitor and administer all applications in your converged network, not just some of them.

Nortel SMB solutions

Nortel provides an end-to-end solution for small and medium-sized businesses. Recognizing the one size doesn't fit all, Nortel has designed solutions that allow you to build networks that best align with your business needs. Figure 1 shows how the Business Ethernet Switch 50 24T PWR can be used in conjunction with the Nortel Business Secure Router 222 for access to the Internet; the Nortel Business Access Point 120 for wireless connectivity; and the Nortel Business Communications Manager 50 for voice integration. The Business Element Manager manages the entire Nortel SMB network from a single management station within the network.

Figure 1. Manage your entire Nortel SMB network



The Business Ethernet Switch 50 features Power over Ethernet (PoE). This built-in functionality enables the Business Ethernet Switch 50 to provide power to PoE devices such as Voice over IP (VoIP) handsets or wireless LAN access points and security cameras — all through a single Ethernet cable.

Feature specifications

Hardware features

- Switch fabric:
 - BES50FE-12T PWR Port - 2.4 Gbps
 - BES50FE-24T PWR Port - 4.8 Gbps
 - BES50GE-12T PWR Port - 24 Gbps
 - BES50GE-24T PWR Port - 48 Gbps
- Frame length:
 - IEEE 802.1Q Untagged: 64 to 1518 Bytes
 - IEEE 802.1Q Tagged: 68 to 1522 Bytes
- 16 MB Flash
- 64 MB RAM
- 8K MAC address table size
- IEEE 802.3af Power over Ethernet
- 4 hardware queues per port
- Auto-negotiation
- Auto-MDI/MDIX
- Reset button
- Full duplex at wire-speed, non blocking on all ports

Layer 2 features

- 32 port-based VLANs
- 802.3ad Link Aggregation: 6 aggregations, 4 ports per aggregation
- Spanning Tree/Rapid Spanning Tree (802.1D/802.1w)

Port features

- 10/100 BASE-T (BES50FE-12T PWR and BES50FE-24T PWR)
- 10/100/1000 BASE-T (BES50GE-12T PWR & BES50GE-24T PWR)
- Auto-sensing
- Auto MDI-MDIX
- Link Aggregation LACP
- Port Trunking
- Port Mirroring (applicable to any ports)
- Flow Control as per IEEE 802.3x. Default is enabled.

Security

- Intrusion control per port
- Destination address filtering
- Access Control List in Silicon
- User Based Application Filtering
- Access/password Control
- IP access list
- MAC security (port based)

VoIP capabilities

- Packet Classification based on 802.1p and DSCP markings
- Auto QoS for VoIP Traffic Priority
- IP Phone Detection using 802.1AB Protocol
- Broadcast/multicast packet storm control
- Power Over Ethernet Support for Plug and Play with IP Phones
- VLAN Tagging

Management and serviceability

- WebUI Management
- IGMP snooping (v1/v2)
- Default IP address- DHCP for Auto IP Address Assignment
- Support for the Business Ethernet Management
- SNMPv1/v2 for Remote Monitoring
- SNTP
- 4 groups of RMON (Ethernet)
- Launch WebUI from Business Element Manager
- Virtual Cable Test to check Cable Integrity

Technical specifications

Physical specifications

- Height: 2.64 in (6.7 cm)
- Width: 8.6 in (21.8 cm)
- Depth: 12.51 in (31.7 cm)
- Weight: 2.9 lbs (1.3 kg)

IEEE standards and RFCs compliance

- IEEE standards:
 - IEEE 802.3 10BASE-T
 - IEEE 802.3u 100BASE-TX
 - IEEE 802.3ab 1000BASE-T (applicable to Gigabit Ethernet Switch only)
 - IEEE 802.3ad Link Aggregation
 - IEEE 802.3x Flow Control support
 - IEEE 802.3af Power over Ethernet
 - IEEE 802.1AB Discovery (LLDP)
 - IEEE 802.1D Spanning Tree/Bridging 1993
 - IEEE 802.1p QoS
 - IEEE 802.1Q Virtual LAN 1998
 - IEEE 802.1v VLAN Classification by Protocol and Port
 - IEEE 802.1x Port-based Network Access Control, 2001
- RFC support:
 - RFC 768 UDP
 - RFC 783 TFTP file download
 - RFC 2068 HTTP
 - RFC 826 ARP
 - RFC 791/950 IP
 - RFC 2131/2132 Boot/DHCP Relay

Safety

- IEC60950-1 (CB report):
 - EN60950-1(TUV/GS)
 - UL60950-1(cTUVus)
 - CSA22.2, #60950-1(cTUVus)
 - NOM/Mexico
 - S-mark/Argentina

Environmental

- Operating temperature: 0° to 40°C (32° to 104°F)
- Storage temperature: -40° to 70°C (-40° to 158°F)
- Operating humidity: 0% to 95% maximum relative humidity, non-condensing
- Storage humidity: 5% to 95% maximum relative humidity, non-condensing
- Altitude: Operating - 0 to 10,000 ft. Storage/Shipping - 0 to 30,000 ft
- Acoustic noise (ISO 7779): 40 dba at 25 deg C (dba +/-10%)
- The BES50 series complies with the RoHS, WEEE, and EuP Directives
- The external power supply complies with the RoHS, WEEE, and EuP Directives

Electrical

- AC Voltage: 90V to 264V at 50/60 Hz
- AC Current: 2.0A
- DC Voltage: 48V
- DC Current: 2.75A

EMC Agency approvals to the latest release of the following standards

- CISPR22 International EMC Emissions
- CIRPR24 International EMC Immunity
- EN55022 European EMC Emissions (CE)
- EN55024 Additional European EMC Specifications (CE) (Reference sections -3-2, -3-3, -4-2, -4-3, -4-4, -4-5, -4-6, 4-11)
- FCC Part 15 United States of America EMC Emissions
- ICES-003 Canadian EMC Emissions
- VCCI Japan EMC Emissions
- AN/NZS 3548 Australia/New Zealand EMC Emissions
- CNS13438 Taiwan EMC Emissions
- MIC Korean EMC Certification
- Anatel Brazilian EMC Certification

Quality and reliability requirements

Metric	Target
Expected service life	10 years
MTBF at 25°C	BES50FE: 800K hours BES50GE: 500K hours

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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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