

> NORTEL SMALL AND MEDIUM BUSINESS SOLUTIONS



Solution Brief

Data networking solutions for small and medium businesses

Empower employees to share information, ideas and resources throughout your building or campus — or across the Internet.

Do your employees need to share business applications, printers, modems and fax machines? Are you looking for affordable ways to deliver more bandwidth to each user? Is the data network getting sluggish, reaching its limits? Are you concerned about the growing complexity of your network, and how to manage it? Are you looking for ways to upgrade without an overhaul?

If you work in a small or mid-sized business, these scenarios may be familiar to you — especially if your data network was installed more than five years ago. Today's applications, such as multimedia Web browsing and videoconferencing, consume a lot of bandwidth. And if you're interested in exploiting the advantages of voice over IP (VoIP), chances are that your data network can't provide the high grade of service you need.

If you currently connect PCs, printers and fax machines using a hub or simple switch, you're probably discovering that you need more than your existing network can offer:

- > *Bandwidth* — Hubs provide only best-effort bandwidth shared among all users, whereas some applications, particularly VoIP and video, require guaranteed bandwidth.
- > *Ports* — If you've added PCs, printers and other devices to your network, you're probably outgrowing your present hub or switch and need more ports.
- > *Security* — Maybe you're looking for a way to segregate different portions of the network for security purposes, without having to run physically separate networks.
- > *Power options* — Perhaps you're enhancing the network with in-building wireless data and IP phones, and you'd like to avoid having to run electrical circuits to power all those devices.

For all of these scenarios, Nortel has solid answers — cost-effective, reliable networking solutions to satisfy the data networking requirements of small to medium-sized business, including voice service carried over the data network.



Data networking solutions tailored for your business

Nortel offers IP data networking solutions designed specifically for the requirements and budgets of small to medium-sized businesses.

To create a local area network (LAN) in a building or campus...

The Nortel Business Ethernet Switch family connects PCs, printers, servers, routers and other devices throughout your office — ideal for sites with 10 to 250 users. If you have an IP Telephony system such as Business Communications Manager, the switch also connects IP phones. And if you have an in-building wireless LAN (WLAN), the switch also connects the wireless access points located throughout the facility.

For secure connection to the Internet...

Nortel Business Secure Router 222 provides always-on Internet access and enables secure, virtual private networks across the Internet. Now you can use the Internet or your service provider's managed IP network to securely extend communications to business partners, customers, remote offices, and mobile or home-based employees.

Now even a very small business can set up an intranet so employees can share information and resources, an extranet to communicate with partners and suppliers, and Web access to interact with customers and securely extend business communications anywhere.

For converged voice and data...

The Nortel Business Communications Manager delivers small- to medium-sized businesses an award-winning converged voice and data solution, providing a choice of IP-enabled or pure-IP strategy — or a combination of both — so you can mix and match easily for the best

economy and utility. The Business Communications Manager enables small sites to benefit from convergence capabilities that were previously only available to much larger organizations.

Robust local area networking at a small business price

If your business is looking to create a reliable and sophisticated LAN at an affordable price, the Business Ethernet Switch family is the ideal choice.

The compact design occupies only one unit of rack space and requires very little power. It also offers an unusual level of technical sophistication, for a product designed to be affordable and simple to manage for small business. Here's a sampling of what you gain with this solution.

Connect dozens of users and devices.

Choose from 12-, 24- or 48-port models — each port operating at 10 Mbps (megabytes per second) or 100 Mbps — at a low cost per port. With one compact switch, you can network dozens of PCs, IP phones, printers, servers, wireless access points and a router.

Two devices can even share a single port on the switch, if one of them is a Nortel IP phone. The Ethernet cable connects to the IP phone, and the other device — such as the user's desktop PC — connects into a jack on the back of the phone.

The switch knows which device is sending the traffic and handles it accordingly. This feature frees up extra switch ports for other uses.

Separate traffic into virtual LANs.

Virtual LANs or VLANs segregate traffic into logical partitions of the network, so one network can perform like several smaller private networks. For example, you can set up VLANs to segregate sensitive financial transactions from general employee e-mail and data transfers. Or isolate guest traffic from internal communications. Or keep confidential patient information separate from the clinic's administrative systems.

Send power to IP phones and wireless access points.

Power over Ethernet enables you to power these devices from the switch — eliminating the need for you to plug them into wall outlets. This feature reduces the cost of deploying VoIP and wireless systems.

Power over Ethernet also adds an extra layer of reliability. Chances are, the core switch has backup power — a UPS with battery, generator or both. It would be cumbersome to try to protect every telephone and wireless access point with a UPS, so that isn't done. But if the power goes out, those devices would still receive their power over the Ethernet cable and continue to work.



Give voice traffic the priority treatment it requires. When IP devices send data, they tell the network what type of device they are and what kind of packets they're sending. An IP phone will label its packets as containing the bits and pieces of a voice conversation that must reach its destination within milliseconds, or else the voice will sound spotty and distorted.

The switch reads the packet headers that say, "This is voice traffic, speed it through." The switch then marks the voice packets for highest priority treatment — sending it to the fastest of its four queues. Voice service is as clear and smooth as with traditional digital telephones.

Expand and change the network at will. Whenever you connect a new desktop PC, printer or other device into the switch, it gets assigned an IP address. The device and the switch will automatically negotiate the appropriate transmission speed to use. If the device is an IP phone, it seeks to register with a Nortel Business Communications Manager. These capabilities make it easy to connect new devices and move them any time later.

Part of a complete business communications solution

The Business Ethernet Switch family provides robust and reliable local area networking throughout an office, health-care facility, manufacturing center or other business site with up to 250 users. The solution becomes richer when you add other elements of the Nortel family of small business solutions.

› Connect the switch to a Nortel Business Communications Manager, and you add converged voice and data services, such as Unified Messaging and VoIP with hundreds of calling features.



- › Connect the switch to Nortel Business Access Point 120 units to extend wireless network access for up to 100 users in the building.
- › Connect to a Nortel Business Secure Router 222 to extend communications into the outside world through a broadband Internet connection.

All of these components can be managed from one management interface, designed for the casual computer user. You can activate and manage platforms and applications from any workstation that has LAN or Web access — using graphical interfaces and step-by-step wizards. Imagine the savings in time and effort by being able to manage the core elements of your business network from one consistent, familiar interface.

Business communications made simple

Don't take chances with your business communications. Count on the company that has been delivering telephony and data systems to the world's largest service providers and enterprises for decades — the company that pioneered the digital revolution, reinvented business networking in the Internet Age, and is a leader in small and medium business telephony.

Find out more about how your business can benefit from a high-speed Ethernet LAN to connect users with each other, with the resources they need and with the outside world. Contact your local reseller or visit us on the Web at www.nortel.com/smb.

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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. Our next-generation technologies, for both service providers and enterprises, span access and core networks, support multimedia and business-critical applications, and help eliminate today's barriers to efficiency, speed and performance by simplifying networks and connecting people with information. 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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