



Solution Brief

Nortel IP Telephony solutions for enterprises

Improve business productivity and customer service

- > Converge voice and data services
- > Provide consistent access to the network from anywhere
- > Give employees control over how their communications reach them
- > Empower contact centers for more responsive customer service
- > Readily adapt to new technologies as they become available

Reduce the cost of owning and operating the network

- > Own and operate one converged network instead of separate networks
- > Eliminate toll charges for calls among remote offices
- > Manage the network from one simplified, central vantage point
- > Converge the business infrastructure and the underlying data network
- > Reduce facilities costs with an increasingly mobile and remote workforce
- > Extend the value of existing network investments as you migrate to IP

Now that IP networks offer the robustness and quality of service that voice service requires, enterprises have been quick to take advantage. Converging voice and data over IP maximizes network efficiency, streamlines the architecture, reduces capital and operating costs, and opens up new service opportunities.

The IP-based multimedia architecture extends service to remote sites and home offices over cost-effective IP links, and makes it easy to deploy, reconfigure and repair service. VoIP enables rich,

new multimedia services, such as Web-enabled multimedia contact centers, unified messaging, presence and remote PC-based call management.

IP has ushered in the era of anywhere-anytime connectivity, with advanced services that make it more natural, convenient and productive than ever to communicate with colleagues and customers anywhere in the world — at lower cost than ever.

More than a decade ago, while IP networking was just making the transition from academia into the business



world. Nortel was a key force behind that evolution — bringing secure, carrier-grade IP solutions to service providers and enterprises even when the Web was in its infancy. Today, Nortel offers field-proven IP Telephony solutions for organizations of all sizes, from the smallest home/branch offices to the largest multinational enterprises.

Nortel IP Telephony solutions for diverse applications

Distributed and mobile workforce solutions enable employees to access the network and its resources from anywhere, without boundaries. Home-based and traveling employees can enjoy all the productivity advantages as their office-based colleagues. Workers who roam the premises, such as nurses and plant supervisors, can remain connected via seamless wireless service. Shared “hot desks” reduce office space requirements yet allow teams to work more closely than ever.

Multi-site solutions for large busi-

nesses or campuses support from 200 users to more than 200,000 users. To users, the multi-site network looks and feels like one unified corporate network. To administrators, the multi-location network can be managed from a centralized location. Regional offices are autonomous yet enjoy full access to advanced features and applications, whether they have a few employees or thousands.

Multi-site solutions for small to mid-sized businesses support 20 to 400 users. Even small offices now find it affordable to deploy powerful new e-business applications that extend network services to remote workers, increase portability, simplify adds/moves/changes and eliminate toll charges on site-to-site calls.

Remote office or branch office solutions cost-effectively extend voice and data services to your many business locations — from 5 to 400 users per site — while providing a seamless customer and employee experience.

Single-site solutions enable small businesses to perform like much larger ones, and large enterprises to enjoy all the efficiency, productivity and cost-saving advantages of converged voice and data services.

Featured IP Telephony products

Nortel IP Telephony solutions for enterprises are built on field-proven platforms that can scale as your organization grows, and work together in a cohesive, enterprise-wide network.

Multiple Nortel Communication Server 1000s can also be networked together, if needed, to scale to larger than the capacities listed in the chart below.

Nortel also offers a complete portfolio of IP phones, including desktop phones with displays, rugged wireless handsets, PC-based “softphones” and remote clients for off-site laptops. All of these access devices operate seamlessly across the range of IP-enabled platforms and applications.

There is an IP Telephony platform just right for every Nortel customer.

Nortel IP Telephony platform	Number of users	Description
Business Communications Manager 50, 200, 400	5 to 200 users	IP-enabled communication system — integrates voice and data functions into a single box for small- to mid-sized business or multi-site and branch offices
Communication Server 1000S	150 to 1000 users	Server-based IP PBX – provides the benefits of a converged network plus advanced applications and more than 450 telephony features
Communication Server 1000M	1000 to 15,000 users	Server-based IP PBX for Nortel Meridian 1 customers who want to migrate to an IP PBX
Communication Server 1000E	1000 to 15,000 users	Scalable, robust and fully redundant IP PBX — extends an industry-leading set of IP applications to many thousands of users
Communication Server 2100	2000 to 200,000 users	The first carrier-grade, IP softswitch for large campuses and geographically dispersed large enterprises
Multimedia Communication Server 5100 and 5200	Up to 20,000 active users	Delivers advanced IP-based capabilities such as multimedia (video conferencing and calling, visual caller ID); collaboration (conferencing, white boarding, file exchange, co-Web browsing); personalization (call screening, call logs, call management and routing - find me, follow me); presence and instant messaging

What you gain with Nortel IP Telephony solutions

Improved productivity and accessibility. Mobile and remote employees will have consistent, anywhere-anytime access to the applications and resources they need to do their jobs. They can work much as they do in the office, since they can see or talk to colleagues, hold impromptu whiteboard sessions to share ideas, and securely access their corporate applications and services.

New applications and services. All users, wherever they are located, can benefit from advanced applications, such as unified messaging, multimedia collaboration, interactive voice response and customer contact services. These services enhance staff productivity while improving the customer experience.

Reduced costs. Nortel IP Telephony solutions enable you to streamline the network architecture and administration, optimize bandwidth utilization, centralize applications for many sites, use your existing LAN and the Internet to securely transmit voice and fax calls, and capitalize on new IP services.

Portable and flexible services. Moves, adds and changes become almost seamless, and services can easily be extended to remote sites and home offices over cost-effective IP links.

Converged PC and telephony environments. The Nortel Converged Office solution integrates Nortel business-grade telephony with the Microsoft Office environment. This solution can deliver a voice call to a user's PC, automatically forward the call to voice mail if it isn't answered, prompt the caller to leave a voice message on the Nortel CallPilot system, then update the user's

Microsoft Outlook display with a message-waiting indicator and the message information.

Presence, click-to-call, integration of email and voice mail... these capabilities and more enable users to speed decision making without having to manage the growing complexity and diversity of their communications services.

Faster implementation. According to the Nemertes "2006 Convergence Benchmark" report of IP Telephony vendors, Nortel solutions beat the competition in value, product features, ease of installation/troubleshooting and overall performance. Collectively, these advantages mean customers spend an estimated 26 percent less time implementing a Nortel Voice over IP (VoIP) solution than an alternative product.

Centralized applications. Streamline network administration by centralizing applications for messaging and management, and distributing those capabilities over the IP network. The organization

In February 2006, Internet Telephony magazine named the Nortel Business Communications Manager 50 as its "2005 Product of the Year".



benefits from standard greetings, global administration and a consistent interface and experience across the entire network.

Smooth migration from traditional to IP Telephony. Customers that presently use a Nortel Meridian 1 system will find

Communication Server 1000 highlights

- > **IP PBX functionality** delivered over IP LAN and WAN infrastructures, without compromise
- > **Business-critical applications**, including Contact Center, CallPilot Unified Messaging, Multimedia Communication Server 5100 rich media services such as Instant Messaging, and integrated services such as Nortel Integrated Personal Call Director and Nortel Integrated Recorded Announcement
- > **Scalability** to meet growing needs — up to 15,000 IP clients per call server; transparent IP networking of call servers to support tens of thousands of users
- > **Built-in reliability** based on the VXWorks operating system and multiple resiliency mechanisms, including redundant call and signaling servers and survivable WAN gateways

that investment protected as they make the transition to the Communication Server 1000, which shares common software, system elements, management environment and user interface. Similarly, the Communication Server 2100 supports a hybrid configuration (with traditional and IP Telephony side by side) as well as pure IP, for a simple and cost-efficient migration path.

Four great reasons to choose a Nortel IP Telephony solution

Advanced telephony and multimedia applications — To enhance the business

Business interactions must be quick, efficient and adaptable to the circumstances at hand. Nortel IP Telephony solutions satisfy that need with advances such as Session Initiation Protocol (SIP). SIP enables users to engage in real-time, integrated business communications, regardless of location, media type or device.

Nortel SIP clients support presence-aware, multimedia collaborative sessions (including Instant Messaging) using the Nortel Multimedia Communication Server 5100. Users can interact with customers and colleagues as if they were face-to-face.

The Nortel Application Gateway 1000 takes IP phones to the next level, for a modest license fee. For example, Visual Voicemail puts the CallPilot Unified Messaging interface and playback control onto the IP phone. Zone Paging and Broadcast Alerts offer powerful ways for users to share messages. These often-requested features are not possible on traditional PBXs. Express Directory and Click to Call dramatically speed

Business Communications Manager highlights

- > **Hundreds of telephony features** — the most complete offering for small sites
- > **Full suite of applications**, including voice messaging, unified messaging, interactive voice response, multimedia call center and wireless service
- > **Scalability** from 10 to 200 stations using a mix of digital and IP stations
- > **Reduced costs** by connecting IP phones over the LAN, seamlessly extending features to multiple sites through IP connectivity and streamlining network management
- > **Redundancy options**, including power, fans and hard-drive, with the ability to auto-detect potential problems and switch over seamlessly without loss of service
- > **Browser-based management** with an intuitive, wizards-based method for managing the network from any Web-connected workstation

dialing and reduce dialing errors — and pay for themselves in just a few months.

Service ubiquity — To boost productivity and save money

Nortel Internet telephones and “soft clients” for mobile workers make it easy for users anywhere to exploit IP Telephony while retaining the carrier-class reliability and ease of use you expect of a traditional business telephone.

Light users can have cost-effective, single-line phones with displays.

Managers and executives with heavy call volumes will appreciate the multi-line phones with large LCD displays. Call center agents and others who spend long hours on the phone will value the handsfree operation and computer telephony integration.

Mobile employees will appreciate the ability to simply plug a laptop into a network port at a shared office location, snap in a USB headset, and function as if they were in their own office — with

all their phone features available to them. The Nortel Mobile Voice Client 2050 supports the full suite of Nortel business telephony features and applications on many Dell, HP and other popular PDA devices as well as Nortel wireless phones.

These standards-based Internet telephones work with any Nortel IP-enabled business communications platform. No matter how diverse your converged network — even if it spans private and service provider networks — you can standardize on one family of telephones.

Reliability — So you can continue with business

No enterprise can afford downtime. For some, such as large financial institutions, downtime can cost millions. For healthcare institutions, it can cost lives. Reliability is absolutely essential. That’s why Nortel IP Telephony solutions have been engineered for carrier-grade performance. Core platforms feature

highly reliable operating systems, robust hardware, redundancy options, and self-monitoring and auto-recovery features. Furthermore, IP networking makes it feasible for enterprises to design highly survivable network configurations with site-to-site redundancy, alternate routing and campus mirroring.

Campus mirroring enables you to deploy active and inactive call servers in different floors, buildings or up to

25 miles across a campus environment, connected over a high-speed, reliable data link. If one server is affected by a disaster, such as fire or flood, the other server automatically takes over. Business continues without interruption.

Geographic redundancy takes this concept a big step further. You can deploy a redundant call server anywhere in the world and connect it to the primary call server over your WAN.

The standby server can take over instantly if a primary system is out of service for any reason.

For example, a large financial institution might have two Nortel Communication Server 1000 platforms: one in Los Angeles and one in New York. The two servers could share the traffic load, with either one ready to take over if necessary — or one call server could remain idle in “hot standby mode” unless it is

Nortel IP Telephony solutions in action

Convergence caught on first because of the dramatic direct cost savings. It then very quickly proved its deeper value for improving employee productivity and customer care. With these advantages at hand, it's no surprise that nearly half of large North American enterprises have IP Telephony at the core of their next-generation network plans, and small- to medium-sized businesses are catching up fast.

Real-world examples of winning Communication Server 1000 solutions



● Erlanger Health Systems

Erlanger deployed Communication Server 1000 and Multimedia Communication Server 5100 to enable users to personalize their work environment and share information wherever they are on the network.

Benefits

- Increased staff mobility and secure data access
- Quality of Service (QoS) to support advanced voice communications
- Cost reductions in several key areas
- Simpler network management
- Readiness for future applications and technologies

● Amrest (Poland)

American Restaurants (AmRest), the owner of 114 Pizza Hut and KFC restaurants in Poland, is deploying Communication Server 1000M to provide services and applications related to voice transfer and IP Telephony.

Benefits

- New communications services
- Lower operational costs
- Lower infrastructure costs through convergence

● City of Coquitlam

City of Coquitlam is using an end-to-end converged IP Telephony solution from Nortel — from WAN backbone to IP Phones on 700 desks, IP PBX and IP-VPNS — to bridge multiple campuses and offices in one unified network.

Benefits

- Future-proof, reliable converged solution
- Increased flexibility and staff mobility
- Reduced costs for adds, moves and changes

● Laurentian University

Communication Server 1000 integrates with existing Nortel Meridian* 1 systems to leverage infrastructure investments. As a converged voice and data network platform, it allows Laurentian University to migrate to IP on the school's own terms and timeframes — providing end-to-end IP Telephony to maximize cost savings and deliver payback in just a few years.

Benefits

- Cost savings in telephone charges and through simplified, flexible network maintenance
- Improve productivity with availability of unified messaging
- Scalability to embody emerging features that will meet future needs

● Adelphi (UK)

Adelphi, a UK-based company that provides market intelligence to global drug companies, is using Communication Server 1000 to handle IP Telephony across its organization.

Benefits

- Improved communication and collaboration through new features
- Six-figure savings in call costs
- Reliable and available wide area network infrastructure to support communications between sites

needed. In either case, both call servers would have synchronized databases to ensure a smooth transition.

Voice quality management ensures the premium quality of service (QoS) conditions that voice service demands. With Nortel VoIP service, you get clear, quality voice, equivalent to traditional networks. The solution continually monitors and reports network conditions in real time. Network administrators always have a current view of how the network is performing, and they can export and analyze performance data any time to ensure continued high levels of service.

Choices — So you can grow when you are ready

Nortel IP Telephony solutions have been designed to protect our customers' existing investments. When you are ready to take advantage of the latest technologies and capabilities, you can do it smoothly at minimum equipment cost.

Does your business run on traditional digital telephony today? Your existing Meridian 1 PBX can evolve into a

Communication Server 1000, extending the value of your hardware investment. Users can keep their familiar desktop phones, and you can gradually transition them to IP phones as needed.

Does your business run primarily on IP Telephony today, but without fully exploiting the advantages of IP? You can gradually add new capabilities at any time, such as convergence with the Microsoft Office environment and SIP-based multimedia applications for collaboration and video.

For organizations of any size and type, Nortel offers a choice of paths to migrate to IP at your own pace. Open interfaces, standards compliance and modular architectures enable you to add or upgrade elements to complement your existing infrastructure — and provide assured upgrade paths as the technology continues to advance.

Nortel as your resource for IP Telephony

IP Telephony is a unique application on the network. It is critical to your opera-

tions and it requires premium QoS, privacy and reliability. For your IP implementation, count on Nortel, the proven resource for the world's most trusted public and private networks.

Nortel is the #1 market leader in IP PBX lines shipped in North America in 2005, according to Infonetics research. Our portfolio includes comprehensive data and voice communication application suites, including contact center, presence, conferencing, unified messaging, Instant Messaging and collaboration. Our SIP clients are deployed in tens of thousands of locations around the world. And we provide flexible paths to migrate from traditional to IP Telephony.

Whether you need an all-new IP Telephony solution or a cost-effective way to migrate from your current platform, Nortel has the expertise to deliver. Find out more about our end-to-end IP Telephony solutions — and the powerful security measures that can be applied to meet very stringent standards for privacy and network integrity. Visit our Web site at www.nortel.com/IPTelephony.

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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In the United States:
Nortel
35 Davis Drive
Research Triangle Park, NC 27709 USA

In Canada:
Nortel
8200 Dixie Road, Suite 100
Brampton, Ontario L6T 5P6 Canada

In Caribbean and Latin America:
Nortel
1500 Concorde Terrace
Sunrise, FL 33323 USA

In Europe:
Nortel
Maidenhead Office Park, Westcott Way
Maidenhead Berkshire SL6 3QH UK

In Asia Pacific:
Nortel
Nortel Networks Centre
1 Innovation Drive
Macquarie University Research Park
Macquarie Park, NSW 2109
Australia
Tel +61 2 8870 5000

In Greater China:
Nortel
Sun Dong An Plaza, 138 Wang Fu Jing Street
Beijing 100006, China
Phone: (86) 10 6510 8000