



Application Brief

**Nortel Networks**

# Business Communications Manager Network Architecture

Business Communications Manager supports the converged data/telephony networks of the future, bringing a simplified architecture and the power of advanced IP Telephony applications to your business. In addition to providing universal Internet access to your employees, this innovative solution provides 10/100 Ethernet connectivity and delivers a smooth migration path to the IP networks of the future. Whether you choose to create a hybrid digital/IP-based telephony environment, or build a pure-IP network that incorporates voice over IP, the flexible platform is designed to meet your networking needs, both now and in the future.

Companies of all sizes can use Business Communications Manager to create a unified phone system, supporting multiple branches and home offices over IP connections. Business Communications Manager can even provide Centralized Voice Mail support to remote Business Communications Managers and Norstars\*. Larger companies with a Meridian 1\* or Succession 1000 phone system at the central site can extend CallPilot\* or Meridian Mail services to branch offices over PRI or IP using Business Communications Manager, preserving their existing investment and delivering unified messaging. Both approaches provide centralized voice services and offer four-digit extension dialing to any point on the network—including home offices connecting over IP.

Business Communications Manager helps companies reduce their recurring costs with three key capabilities:

- Reduces or eliminates the need for PSTN trunking to remote sites through centralized trunking
- Combines Internet and intranet access onto a single T1 line, eliminating the need for separate T1 links
- Limits T1 leased-line charges by replacing them with cost-effective Frame Relay connections

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## Single-site and multi-site installations

In single-site and multi-site environments, Business Communications Manager delivers the following key benefits:

- Network installations and reconfigurations are simplified by using the data network cabling system to support IP Telephony. This eliminates the need for duplicate wiring systems, creating a more flexible, cost-effective infrastructure.
- IP address-based infrastructures simplify device relocations—equipment can simply be connected to another LAN port that supplies comparable bandwidth, eliminating the need for further reconfiguration.
- IP Telephony also enables phone stations to be connected with fiber at lengths that extend far beyond the 4,000-foot cabling restrictions that are typical of digital phone systems. This capability is ideal for adding telephone stations in warehouses, gatehouses, or other remote facilities.
- Key IP Telephony applications can now be extended between buildings, enabling personnel to work more effectively. Four-digit dialing between buildings streamlines communications, and call centers can be extended over IP connections between buildings and to home offices.

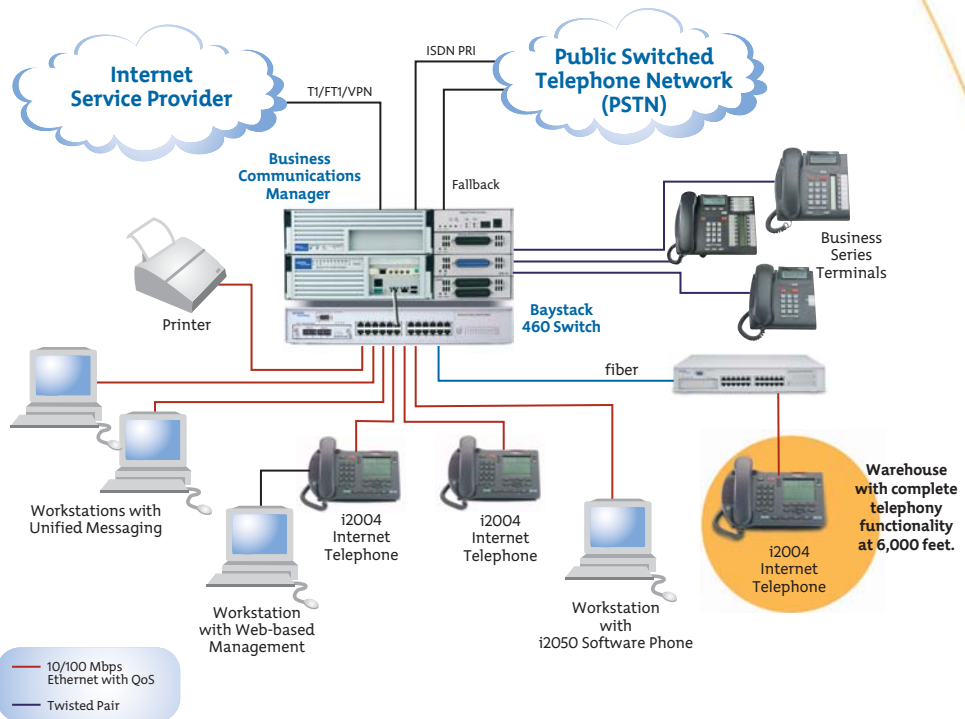
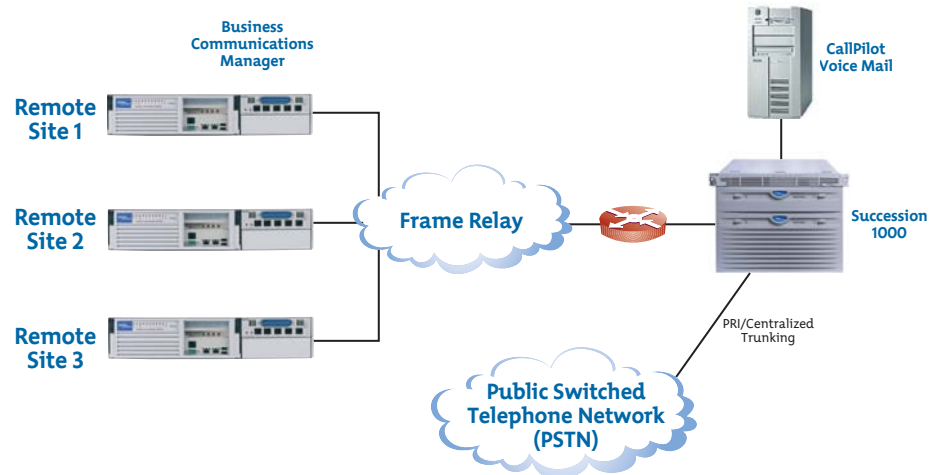


Figure 1. Single-site solution

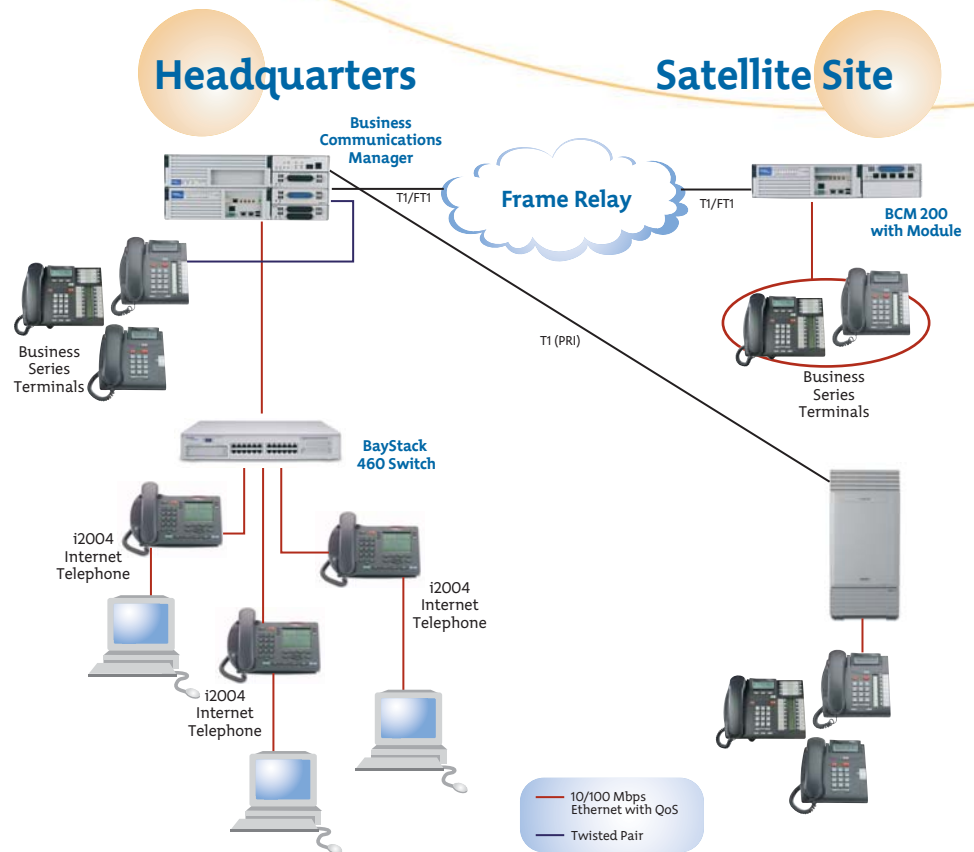
## Central site to remote site architecture

In addition to the benefits for single-site and campus installations, larger businesses that need to extend WAN connectivity from central to remote sites will benefit from a more flexible, cost-effective infrastructure.

- WAN connectivity extends telephony services from the centralized Meridian 1 PBX or Succession 1000 to Business Communications Manager units at the remote sites, creating a more cost-effective, unified corporate architecture. Primary trunking is provided by the Meridian 1 or Succession 1000, with telephony services including CallPilot or Meridian Mail messaging, attendant, and call redirection extended from the central site to the remote branches (see Figure 2).
- Business Communications Manager can support Centralized Voice Mail to remote sites over PRI to Norstar MICS and over IP to Business Communications Managers at remote sites (see Figure 3).
- Based on mileage between facilities and your existing hardware investments, you can select the network architecture that is best suited to the needs of your business.



**Figure 2:** A Business Communications Manager and Succession 1000 enterprise network



**Figure 3:** Business Communications Manager supporting satellite offices

## Web-based management

Business Communications Manager is ideally suited for management by first-time network administrators in small- to medium-sized companies. Using the Unified Manager application, the unit can be easily managed from any Web-enabled workstation. In multiple networking environments, Network Configuration Manager (NCM) is a multi-site management feature that provides centralized configuration and system management capabilities for a number of Business Communications Managers in a network. This powerful tool delivers the ability to apply programming changes to all, or a subset of, Business Communications Managers in a network from a centralized location. NCM delivers a management capability for multi-site Business Communications Manager customers and channel partners, enabling them to significantly reduce the total cost of ownership of their Business Communications Manager systems.

NCM 3.0 delivers the ability to apply programming changes to all, or a subset of, Business Communications Manager systems in a network from a centralized location.

## Creating high-density, QoS-enabled networks

To ensure optimum performance, larger companies with high-density IP Telephony environments will need to replace their existing shared 10 Mbps Ethernet hubs with Quality of Service (QoS)-capable switches that support the DiffServ, 802.1P, and 802.1Q standards. This higher-bandwidth architecture provides consistent access to the bandwidth required by latency-sensitive telephony traffic. To maximize bandwidth availability across the network, traffic can be prioritized by installing the BayStack 460-24T-PWR Switch, which also provides inline power to the IP sets.

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