Nortel Networks
Internet Telephones
High-Performance Voice over IP (VoIP) Solutions

Now you can enjoy the next-generation features of VoIP, plus all of the carrier-class reliability and ease-of-use of a traditional telephone. Nortel Networks offers two superior desktop models, along with an innovative software-based solution that brings VoIP to your desktop PC or laptop.

Whether you choose a full-featured desktop Internet telephone or prefer the comfort and convenience offered by our software-based Internet telephone, Nortel Networks has the right solution for you. The Internet telephones operate seamlessly across our entire range of IP-enabled platforms, offering a complete, full-featured VoIP solution unmatched by any other vendor in the industry.

The three Nortel Networks Internet telephones include:

- **i2002 Internet Telephone** Designed for office professionals and technical specialists, this multi-line phone offers an integrated LCD display screen and is well-suited for moderate call volumes.

- **i2004 Internet Telephone** Ideal for managers, executives, and office administrators, this multi-line phone features a large LCD display screen capable of displaying a maximum amount of information, and is well-suited for high call volumes.

- **i2050 Software Phone** Created for a broad range of workplaces and mobile users, this software-based solution transforms your laptop or desktop PC into a converged voice/data communications platform.

The Nortel Networks Internet telephones provide support for a wide range of today's high-value eBusiness applications, including CallPilot* Unified Messaging and Symposium* Call Center services. This rich, future-proof feature set will evolve to support advanced services such as voice-activated dialing and corporate and personal directory services.

NØRTEL
NETWORKS™

Internet Telephones
Benefits

- Supports connectivity to any Nortel Networks VoIP enabled platform, including Business Communications Manager, IP-enabled Meridian* 1 and Meridian SL-100* PBX systems, and Succession* Communication Servers

- Trans-network support increases employee productivity by providing users and network managers with a common set of telephones across the entire network

- Mission-critical VoIP delivers 99.999% reliability when redundant system components are complemented by redundant power delivered over network cabling

- Internal voice/data switch prioritizes voice traffic to ensure high-quality speech, and reduces costs by conserving wiring closet ports and eliminating the need for separate cable drops to the desktop

- Automatic firmware upgrade ensures top performance and streamlines maintenance, reducing the need for site visits

- DHCP-enabled Internet telephones simplify network administration by providing centralized, automated IP address management

In addition, VoIP reduces costs by putting voice signals on standard network cabling, as opposed to having a separate cabling system dedicated to voice. By eliminating the need for separate wiring to support voice and data transmission, customers can capitalize on the cost economies provided by a simplified wiring system within the enterprise.

Multiple Platform Support

The Nortel Networks Internet telephones are supported by multiple Nortel Networks communication systems, including Business Communications Manager, IP-enabled Meridian 1* and Meridian SL-100 systems (with Internet Telephony Gateway cards installed), and Succession Communication Servers. This industry-leading platform interoperability facilitates growth and offers seamless migrations across customer-premise and carrier-based solutions. All three Internet telephones offer a rich suite of business features designed to meet current and emerging user requirements, and international icon-based characters and multi-language support make them ideal for worldwide use.

Integrated Switched Ethernet Connection

Now you can connect your desktop Internet telephone and your PC to the network on a single port. The Nortel Networks i2002 and i2004 Internet Telephones feature a built-in 10/100BASE-T Layer 2 switch that splits the network Category 5 cable into separate feeds, providing an additional RJ-45 port to connect your PC. By giving fixed, hardware-based priority to the voice port, the internal Ethernet switch ensures that high-quality voice service is always available.

Reliable LAN Power Options

To ensure continuous phone service in mission-critical environments, the Nortel Networks i2002 and i2004 Internet Telephones are able to receive their power over the network cabling. The Nortel Networks 24-Port Power over LAN Hub delivers power over the unused pairs of standard Category 5 UTP cable, eliminating the need for the phones to be connected to a power supply at the desktop.

Power is supplied on an as-needed basis, thanks to the sophisticated, software-based load and fault-sensing algorithm used by the 24-Port Power over LAN Hub. The unit fits into a standard 19" wiring closet rack and provides a cost-effective way to centralize power to the Internet telephones. This approach delivers carrier-grade reliability by enabling redundant power resources located at the wiring closets to provide emergency backup power to Nortel Networks Internet telephones located across the network.

Standards-based

Nortel Networks actively participates in defining standards-based solutions that support the broad deployment of VoIP across enterprise environments. The Nortel Networks i2002 and i2004 Internet Telephones are designed for flexibility and upgradability, and will support firmware upgrades as features and industry standards continue to evolve. When used in conjunction with a terminal proxy server, the Nortel Networks Internet telephones behave like standards-compliant MGCP and H.323 devices, enabling Nortel Networks platforms to be distributed across the network while seamlessly interworking with similar standards-based gateways.

DHCP Addressing

Easy to set up and configure, the Nortel Networks Internet telephones deliver an innovative solution that enables users to connect anywhere on the network without intervention by a network administrator, enabling your management staff to focus on more complex, mission-critical responsibilities. Whether you relocate your phone down the hall or across the globe, your service comes up in the new location exactly as if you were sitting in your own office, even though it might be thousands of miles away.

Prioritizing Network Traffic

Now there's a way to make your network's priorities mirror those of your business. By installing the Nortel Networks Business Policy Switch, your network becomes an intelligent partner that uses Layer 2/3/4 packet classification to prioritize business-critical traffic, helping you get the most out of your existing infrastructure. Your latency-sensitive applications and mission-critical users will receive platinum-level service, while less urgent traffic is allocated bandwidth on a lower-priority basis. Prioritization is especially important for businesses that need to support mission-critical IP applications, including VoIP, but do not want to incur higher costs by over-provisioning the network to ensure bandwidth availability.

Universal Features

With over 100 years of experience in creating phones designed to improve employee productivity, reduce operational expenses, and improve customer service, Nortel Networks is the industry leader in telephony solutions. All three of the Nortel Networks Internet telephones offer the following features:

- Intuitive navigation cluster provides fast menu, sub-list, and call log scrolling, as well as one-touch dialing and quick access to system features

- Message-waiting/visual-ring indicator offers visual notification of incoming calls and messages

- Voice compression optimizes bandwidth and audio quality requirements

- Audio control center enables users to toggle quickly between the handset or headset and the speakerphone without audio interference

- Volume bar provides fingertip control of audio and ringer volume settings, and LEDs clearly display handset/headset/speakerphone/mute settings

- Local tone generation conserves valuable network bandwidth

- Dynamic IP addressing with a standard DHCP server offers a flexible, simplified solution for handling adds, moves, and changes, reducing management costs

- Microsoft TAPI-compliant interface operates seamlessly with CallPilot and Personal Call Manager. This offers users onscreen displays of call logs and directories, and also provides support for drag-and-drop dialing

- User-friendly design supports the full range of potential users, including disabled users who require hearing aids

Desktop Solutions: Nortel Networks i2002 and i2004 Internet Telephones

The i2002 and i2004 Internet Telephones offer a full-featured desktop solution with a broad range of features. Users immediately feel comfortable with the new phones because they operate similarly to traditional phones. This shortens the learning curve and reduces the need for training during the transition to VoIP.

Both telephones feature an internal 10/100 Layer 2 switch that enables the user's phone and PC to use the same network port for voice/data connectivity. The switch automatically prioritizes voice traffic to ensure clear speech transmissions. In mission-critical environments, the Nortel Networks 24-Port Power Over LAN Hub functions as an in-line unit at the wiring closet to supply Nortel Networks desktop Internet telephones with power over the network cabling system. This approach delivers carrier-grade reliability combined with the flexibility of VoIP.

The i2002 and i2004 Internet Telephones provide the following unique features:

- High-fidelity full-duplex speakerphone facilitates group conference calls and delivers crystal-clear, hands-free communication

- Pixel-based LCD display provides a window into a full range of personal productivity tools

- Self-labeling programmable keys eliminate the need for paper inserts or an additional labeling application, and offer improved visibility and clarity

- Adjustable LCD contrast supports viewing in a wide range of user environments

Software Solutions: Nortel Networks i2050 Software Phone

Ideal for mobile users, the Nortel Networks i2050 Software Phone is a software-based solution that loads directly onto your laptop or desktop PC. Once a Nortel Networks headset is connected to the USB port, the i2050 phone delivers virtually identical functionality as the Nortel Networks i2002 and i2004 desktop phones. The i2050 phone is also particularly useful for contact center agents who need a hands-free solution to do their jobs more effectively.

Mobile workers can simply plug their 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. And, because the network recognizes them as a unique user, all of their phone features will be available to them, including outbound Caller ID. Calls can be placed on both the internal and external network, providing a truly portable and practical solution.

The Nortel Networks i2050 Internet Phone provides the following unique features:

- Macro functions transform lengthy operations into a single digit action
- Nortel Networks USB Audio Kit support offers wireline-quality voice performance
- Local directory support imports or reads Symantec ACT, Microsoft Outlook, and LDAP databases for seamless directory integration

Technical Specifications

Table 1:   Nortel Networks Internet Telephones Technical Specifications.

Specifications	i2002	i2004[†]	i2050	Power Over LAN Hub
Platform compatibility[††]	Business Communications Manager, IP-enabled Meridian 1 and Meridian SL-100 systems, Succession Communication Server for Enterprise 1000, Succession Communication Server 2000, Succession Communication Server 3000, and Succession Interactive Multimedia Server	Business Communications Manager, IP-enabled Meridian 1 and Meridian SL-100 systems, Succession Communication Server for Enterprise 1000, Succession Communication Server 2000, Succession Communication Server 3000, and Succession Interactive Multimedia Server	Business Communications Manager, IP-enabled Meridian 1 and Meridian SL-100 systems, Succession Communication Server for Enterprise 1000, Succession Communication Server 2000, Succession Communication Server 3000, and Succession Interactive Multimedia Server	Business Communications Manager, IP-enabled Meridian 1 and Meridian SL-100 systems, Succession Communication Server for Enterprise 1000, Succession Communication Server 2000, Succession Communication Server 3000, and Succession Interactive Multimedia Server
Dimensions	8.2 x 6.5 x 6.6 in., (WxDxH) 208 x 165 x 168 mm	11.8 x 6.5 x 5.3 in., (WxDxH) 300 x 165 x 134 mm	Configurable	17.2 x 11.8 x 2.6 in., (WxDxH) 436.9 x 300 x 66 mm
Weight	2.1 lbs, 965 g	2 lbs, 900 g	N/A	5 kg/11 lbs
Color	EtherGray	EtherGray	Two user-configurable skins (light/dark gray)	White
Power Supply	110 V Wallmount supply delivering 16 VAC @ 500 mA	110 V Wallmount supply delivering 16 VAC @ 500 mA	N/A	N/A
AC Power	90-240 VAC, 50/60 Hz	90-240 VAC, 50/60 Hz	N/A	90-240 VAC, 50/60 Hz
DC Input Power	-48 VDC LAN feed	-48 VDC LAN feed	N/A	-48 VDC redundant power connector
Output Power	N/A	N/A	N/A	-48 VDC watts max per port total output 192 watts
Power dissipation	4.5 watts typical, 5 watts max	4.5 watts typical, 5 watts max	N/A	N/A
Operating tempurature	40° to 104° F, +5° to 40° C	40° to 104° F, +5° to 40° C	N/A	32° to 104° F, 0° to 40° C
Relative humidity	5% to 95% (non-condensing)	5% to 95% (non-condensing)	N/A	N/A
Storage temperature	–40° to 158° F (–40° to 70° C)	–40° to 158° F (–40° to 70° C)	N/A	N/A
Codecs support	G.711a and/or u law, G.723.1, & G.729a and annex b	G.711a and/or u law, G.723.1, & G.729a and annex b	G.711a and/or u law, G.723.1, & G.729a and annex b	N/A
Call control protocol	UNIStim subset over UDP w/reliability layer	UNIStim subset over UDP w/reliability layer	UNIStim subset over UDP with reliability layer	N/A
Headseat support	Built-in amplifier for direct headset connection	Built-in amplifier for direct headset connection	Nortel Networks USB audio kit	N/A

Table 1:   Nortel Networks Internet Telephones Technical Specifications (continued).

Specifications	i2002	i2004[†]	i2050	Power Over LAN Hub
OS compatibility	N/A	N/A	MS Windows 98, 98SE, 2000	N/A
Security	Private key challenge response	Private key challenge response	Private key challenge response	N/A
Audio interface	N/A	N/A	WAV standard 16-bit linear 8 KHz	N/A
RX jitter buffer	Configurable, default is two frames	Configurable, default is two frames	Configurable, default is two frames	N/A
WAV buffer	N/A	N/A	40 ms	N/A
Internet telephone switch	Integrated	Integrated	N/A	N/A
Mounting	Desktop or wall	Desktop or wall	Desktop PC or laptop	19" rack or stackable (1.5 units)
Ports	3 (1 internal, 2 external)	3 (1 internal, 2 external)	N/A	24
Data rates	10/100 Mbps autosensing	10/100 Mbps autosensing	N/A	10/100 Mbps autosensing
Standards	IEEE 802.3, 802.3u	IEEE 802.3, 802.3u	N/A	IEEE approval in process
MAC address	Auto-learning, auto-aging at 700 seconds	Auto-learning, auto-aging at 700 seconds	N/A	N/A
Hardware priority	Fixed priority to phone port based on hardware	Fixed priority to phone port based on hardware	N/A	N/A
Power feed	16 VAC by supplied AC adaptor or 48 VDC Power over LAN Hub	16 VAC by supplied AC adaptor or 48 VDC Power over LAN Hub	N/A	Common mode on pairs 4, 5 & 7, 8
Load sensing	N/A	N/A	N/A	Automatic common mode sensing. Will not power unused pair unless a valid load is present
Fault sensing	N/A	N/A	N/A	Automatic over/under current independent on each port

[†]Technical Specifications apply to the second generation i2004 Internet Telephone
[††]Consult your system-specific documentation for required software level support

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