

Part No. P0988431 Issue 02

Nortel Networks

**i2050 Software Phone
Installation Guide**

NORTEL
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Chapter 1

Installing the i2050 Software Phone

This guide describes how to install the Nortel Networks i2050 Software Phone. Review this guide before installing, upgrading, or modifying the i2050 Software Phone.

This guide also contains information regarding the Nortel Networks USB Audio Kit.

Hardware and software requirements

Minimum PC Requirements

- Pentium® Pro 200 MHz
- 128 MB memory (for Windows 2000)
- 64 MB memory (for Windows 98)
- 55 MB free hard-drive space (all languages)
- USB port
- Monitor settings: 16 bit High Color; 800x600 resolution or higher

Supported Operating Systems

- Windows® 2000 Professional
- Windows® 2000 Professional Service Pack 1
- Windows® 2000 Professional Service Pack 2
- Windows® 98
- Windows® 98 Second Edition



Note: You must have administrator privileges to install the i2050 Software Phone on Windows 2000.

Windows 2000 Power Users can install the i2050 Software Phone if they are granted rights to install with elevated privileges by a Windows 2000 administrator. For information about how to assign elevated privileges to Power Users for installation, refer to your Windows 2000 documentation.

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USB Audio Kit

Operation of the i2050 Software Phone requires the use of the Nortel Networks USB Audio Kit.

The USB Audio Kit provides a high quality predictable audio interface which is highly optimized for telephony applications. The USB Audio kit allows the i2050 Software Phone to have an absolute and predictable loss and level plan implementation which is necessary to meet TIA-810, FCC part 68 and its international equivalents as well as the ADA requirements for the hearing impaired. With the USB Audio kit, the i2050 can achieve performance rivaling or surpassing that of hardware telephones.

The USB Audio Kit is fully compliant with version 1.1 of the USB Device Specification and Windows Plug & Play specifications. It is fully compatible with the suspend and resume functions for effective use in battery operated laptops. It is functional on Windows 2000 Professional, Windows 98, Windows 98 Second Edition, and Windows Millennium. No drivers or software are required for installation.

In the box

- USB Headset Adapter
- Installation Guide (English and French)
- USB cord
- Telephony grade monaural headset
- Lower cordset with quick disconnect

Connectors

- RJ-9 headset/handset jack
- Accessory jack for “in-use” lamp
- USB device jack

Specifications

- **Native Audio format:** 16 bit linear 8 KHz over USB, limited to 8 bit PCM logarithmic coding in hardware
- **OS Compatibility:** Windows 98, 98SE, 2000, ME
- **Power Source:** USB power provided from computer
- **Enumeration:** Enumerates as USB Composite Device and USB Audio Device
- **Channels:** Mandatory control channel for enumeration, Bi-directional isochronous channel for audio
- **Electret Microphone Bias:** 3 V
- **Maximum SPL Protection:** limited in headset
- **In-Use Lamp Connector:** Isolated contact closure - polarity insensitive

Installing the USB Audio Headset

- 1 Connect the coiled lower cord to the headset cord with the Quick Disconnect connector. Ensure the Quick Disconnect is securely fastened.
- 2 Connect the headset cord to the RJ9 jack on the adaptor.
- 3 Connect the USB cable to the headset adaptor and to one of the USB jacks on the back of your PC or USB hub.
- 4 The first time the headset adapter is plugged in, there will be a delay while the Windows operating system configures the device and locates appropriate driver software. During the installation you may be prompted to supply the original Windows CD ROM so that the Windows operating system can locate drivers.
- 5 After you have installed the USB headset adapter, you must use the i2050 Software Phone Configuration Utility to select 'USB Audio Device'.

USB FAQ

- My computer doesn't have USB, can I use an add-on USB card?
The computer must have a USB connector. The USB Headset has not been tested on USB add on or upgrade cards. Performance or operation is not guaranteed of these cards.
- I don't have enough USB ports available, can I use a USB hub?
The USB Headset has been tested successfully behind a variety of USB hubs. It is not practical to test on all of them but no issues have been uncovered on the ones that have been tested. For best results, use a powered hubs.

Optional In-Use Indicator (not provided with kit)

A 2.5mm output jack is provided next to the USB connector for activation of a visual in-use indicator such as the 1127P Desktop Visual Alerter from Algo Communication Products Ltd. (604) 454-3790 / sales@algosolutions.com or equivalent.

Installing the i2050 Software Phone



Note: If you have previously installed a version of the i2050 Software Phone, you must uninstall the old version (via Add/Remove Programs) before installing this version.



Note: Install the Nortel Networks USB Audio Kit before installing the i2050 Software Phone. By doing this you will be presented with the option of using the USB Audio Device during installation of the i2050 Software Phone.

There are two methods you can use to install the Software Phone. The installation method you use depends on the type of Communications Server you are have.

- On a Business Communications Manager system, you download the installation wizard from the Business Communications Manager system and run the wizard from your computer.
- On all other Communications Servers, you run the installation wizard from the i2050 Software Phone CD.

To install using the i2050 Software Phone CD

- 1 Exit any programs that are running.
- 2 Disable any anti-virus programs that are running.
- 3 Insert the i2050 Software Phone CD into the CD-ROM drive of your computer.
If the install wizard starts, go to step 6. If the install wizard does not start, go to step 4.
- 4 Double click the My Computer icon and then double click the CD icon.
- 5 Double click the Setup icon.
- 6 Follow the instructions on the display to complete the installation.
- 7 Run the i2050 Software Phone Configuration Tool to assign a server address and to configure audio peripherals.

You can access the i2050 Software Phone from the Start menu at Start>Programs>Nortel Network>i2050 Software Phone.

You can access the i2050 Software Phone Configuration Tool from the Windows Control Panel.

To install using Business Communications Manager

- 1 Exit any programs that are running.
- 2 Disable any anti-virus programs that are running.
- 3 Launch your web browser.

- 4 In the URL address field, type the Business Communications Manager IP address, including the port number 6800. For example: HTTP://10.10.10.1:6800



Note: You must include HTTP:// with the address and port number to access Unified Manager when you are using Internet Explorer as your browser.

- 5 On the Unified Manager front page, click the **Install Clients** button.
- 6 Click the **i2050 Software Phone** link.
- 7 Click the **Download i2050 Software Phone** button.
A file download window appears.
- 8 Select **Save this program to disk** and click the **OK** button.
The SaveAs dialog appears.
- 9 Choose a location to save this file to and click the **Save** button.
The file begins downloading.
- 10 When the file is finished downloading, click the **Close** button.
- 11 Double-click the **i2050SoftwarePhone.exe** file.
- 12 Follow the instructions on the display to complete the installation.
- 13 Run the i2050 Software Phone Configuration Tool to assign a server address and to configure audio peripherals.

You can access the i2050 Software Phone from the Start menu at Start>Programs>Nortel Networks>i2050 Software Phone.

You can access the i2050 Software Phone Configuration Tool from the Windows Control Panel.



Note: The installation files for the i2050 Software Phone are not deleted by the installation wizard. These files are stored in a folder named
C:\Program Files\Nortel Networks\ClientInstall\i2050 Software Phone.

You can delete the installation files as they are not needed by the i2050 Software Phone.

Additional installation steps for Windows 2000

If you are installing the i2050 Software Phone on a computer using Windows 2000, you must:

- install the Windows QoS Packet Scheduler
- install the Nortel Networks i2050 QoS Service

The Windows QoS Packet Scheduler and the Nortel Networks i2050 QoS Server enable 802.1p Quality of Service (QoS) on the computer.

Installing the Windows QoS Packet Scheduler



Note: You must have administrator privileges to install the QoS Packet Scheduler.

To install the QoS Packet Scheduler:

- 1 In the Windows Control Panel, click **Network and Dialup Connections**.
- 2 Right click the Local Area Connection for the device to be used and click **Properties**.
- 3 Click **Install**.
- 4 On the Select Network Component Type screen, click **Service** and then click **Add**.
- 5 On the Select Network Service screen, click **QoS Packet Scheduler** and then click **OK**.
You may require the Windows 2000 CD-ROM.

Installing the Nortel Networks i2050 QoS Service



Note: Administrator privileges are required to install the Nortel Networks i2050 QoS Service.

If you have administrator privileges, the Nortel Networks i2050 QoS Service is installed as part of the i2050 Software Phone installation.

If you do not have administrator privileges, then an administrator must install the Nortel Networks i2050 QoS Service for you using a separate installation. The administrator should install the Nortel Networks i2050 QoS Service after both the Windows QoS Packet Scheduler and the i2050 Software Phone have been installed.

To install Nortel Networks i2050 QoS Service using the i2050 Software Phone CD:

- 1 Exit any programs that are running.
- 2 Disable any anti-virus programs that are running.
- 3 Insert the i2050 Software Phone CD into the CD-ROM drive of your computer.
If the install wizard starts, exit from the install wizard.
- 4 Use Windows Explorer to navigate to the QoS directory on the CD.
- 5 Double click on the **Setup** icon in this directory.
- 6 Follow the instructions on the display to complete the installation.

The Nortel Networks i2050 QoS Service is configured to start automatically as a Windows service so no further configuration is required for it.

To install Nortel Networks i2050 QoS Service using the Business Communications Manager:

- 1 Exit any programs that are running.
- 2 Disable any anti-virus programs that are running.

- 3 Launch your web browser.
- 4 In the URL address field, type the Business Communications Manager IP address, including the port number 6800. For example: HTTP://10.10.10.1:6800



Note: You must include HTTP:// with the address and port number to access Unified Manager when you are using Internet Explorer as your browser.

- 5 On the Unified Manager front page, click the **Install Clients** button.
- 6 Click the **i2050 Software Phone** link.
- 7 Click the **Download Nortel Networks i2050 QoS Service** button.
A file download window appears.
- 8 Select **Save this program to disk** and click the **OK** button.
The SaveAs dialog appears.
- 9 Choose a location to save this file to and click the **Save** button.
The file begins downloading.
- 10 When the file is finished downloading, click the **Close** button.
- 11 Double-click on the **i2050QoSService.exe** file.
- 12 Follow the instructions on the display to complete the installation.

The Nortel Networks i2050 QoS Service is configured to start automatically as a Windows service so no further configuration is required for it.

Configuration Utility

You configure the i2050 Software Phone using the configuration utility.

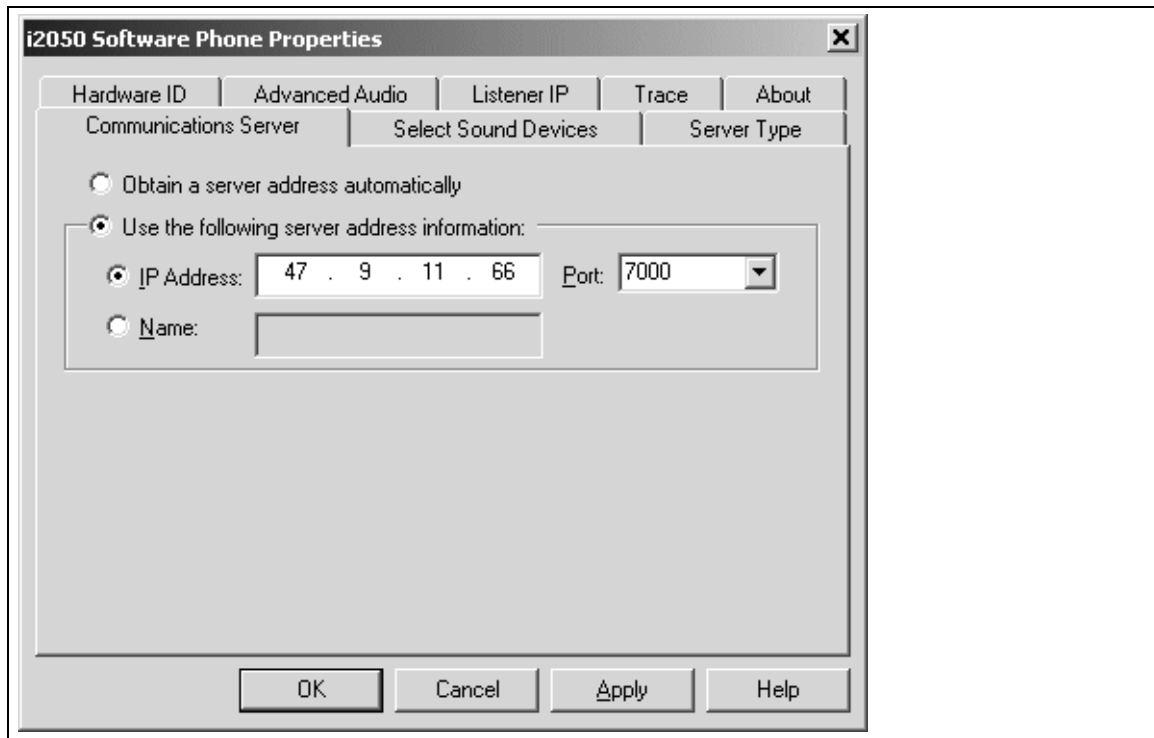
To start the configuration utility:

- 1 Click the **Start** button and then click **Settings**.
- 2 Click **Control Panel**.
- 3 Double click the **i2050 Software Phone** icon.

The configuration utility has tabs for

- Communications Server
- Select Sound Devices
- Server Type
- Additional tabs for system administrators


Communications Server



If your site uses DHCP:

- 1 Select the **Obtain server address automatically** option.

Using DHCP is the default method of locating the Communications Server. If DHCP is used, no further configuration is required.


 **Note:** To use DHCP, you need a DHCP server with communications server IP address values programmed as per the i2004.

If you are not using DHCP:

- 1 Select the **Use the following server address information** option.
- 2 Enter the name of the communications server and then enter or select the port number.
Or

Enter the IP address of the communications server and then enter or select the port number.

If you do not know the communications server name or IP address and port number, ask your communications server administrator.

 **Note:** Using DHCP may not be appropriate for mobile users. These users commonly want to connect to their office communications server rather than the local office server.

Select Sound Devices

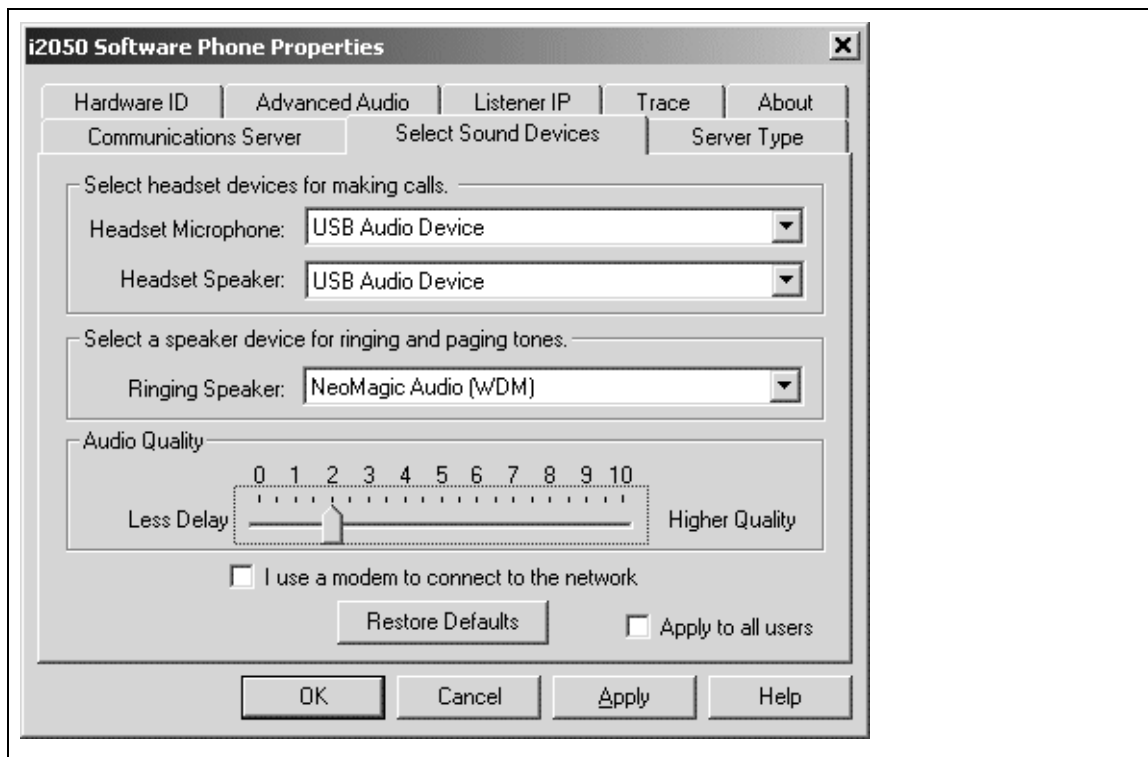
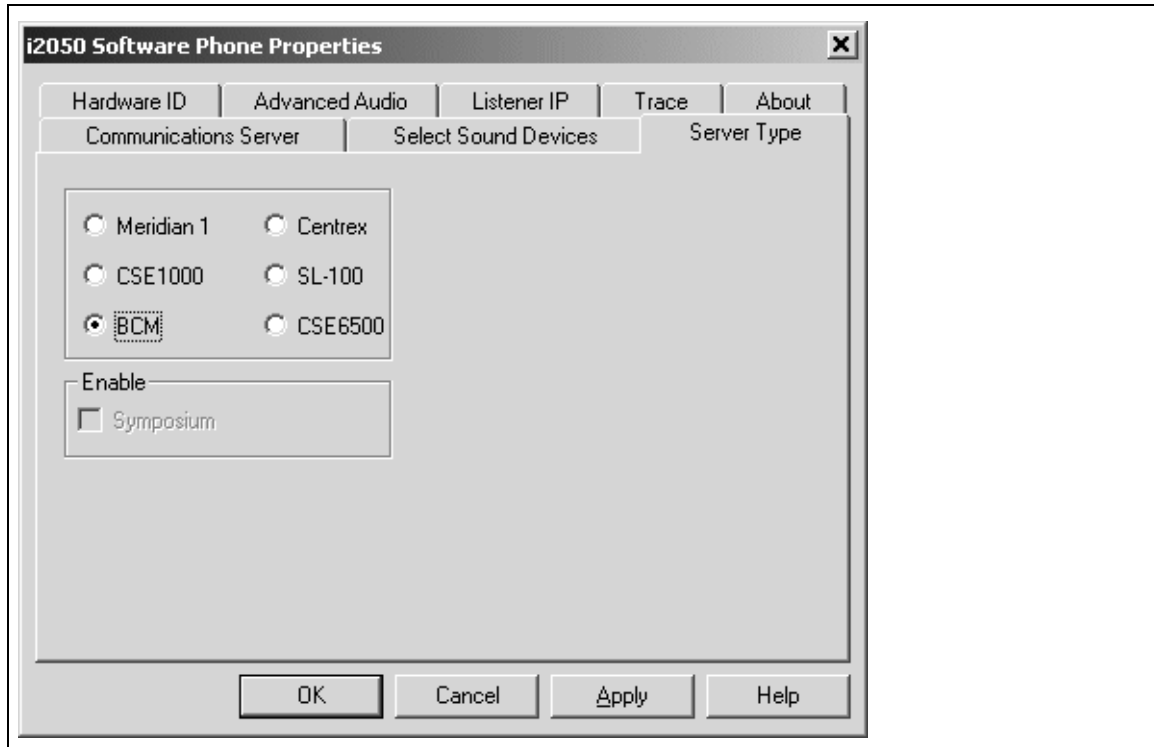


Table 1 Select Sound Devices

Attribute	Description
Headset Microphone	Allows you to select the microphone used for making calls. Select USB Audio Device .
Headset Speaker	Allows you to select the speaker used for making calls. Select USB Audio Device .
Ringing Speaker	Allows you to select a different speaker as a ringing device. If you select the computer speakers rather than on the headset, you can hear the phone ringing when you have taken the headset off.
Audio Quality	Allows you to adjust the internal buffering on the computer. This allows you to compensate for computer performance. If the audio is choppy or broken, move the slider toward Higher Quality.
I use a modem to connect to the network	Select this option if you are using a low speed connection. When you select this option, the i2050 Software Phone reports to the communications server that G729 and G723 are the supported codecs. The communications server may select G711 later depending upon its programming. When you clear this option, the i2050 Software Phone reports that it supports G711, G723 and G729A/G729AB. Not all servers support all codecs. G711 requires high bandwidth; G729 requires medium bandwidth; G723 requires low bandwidth.
Apply to all users	Users with administrator privileges (as determined by Windows) can apply selected audio settings to all users on this computer.

Server Type



To select your server type:

- 1 Select the option that matches the telephone system you are using.
For example, select **BCM** if you are using a Business Communications Manager system.
- 2 ACD agents should also select the **Enable Symposium** option.

QoS

Use this screen to enable Quality of Service (QoS) support on the i2050 Software Phone.

Table 2 Quality of Service (QoS)

Attribute	Description
On	Select this option to turn 802.1 QoS on. When you select this option and the QoS Service is installed and running, the i2050 Software Phone adds 802.1q to the i2050 Software Phone packets. It will also assign 802.1p as per the Communications Server definition (default 6).
Off	Select this option to turn 802.1 QoS off. When you select this option, the i2050 Software Phone does not add 802.1q to the i2050 Software Phone packets, regardless of whether the QoS Server is present.
Automatic detection	Select this option if you want the i2050 Software Phone to decide if the 802.1 QoS is used. When you select this option, the i2050 Software Phone will attempt to connect with 802.1q added to the packets. If the attempt is successful, then the i2050 Software Phone will use 802.1q for the call. If the attempt fails (there is a timeout after approximately 1 second), the i2050 Software Phone will attempt to connect again without adding 802.1q to the packets. This is the default option.
Apply to all users	Users with administrator privileges (as determined by Windows) can apply the QoS settings to all users on this computer.

Hardware ID



Note: This screen is intended for expert users only.

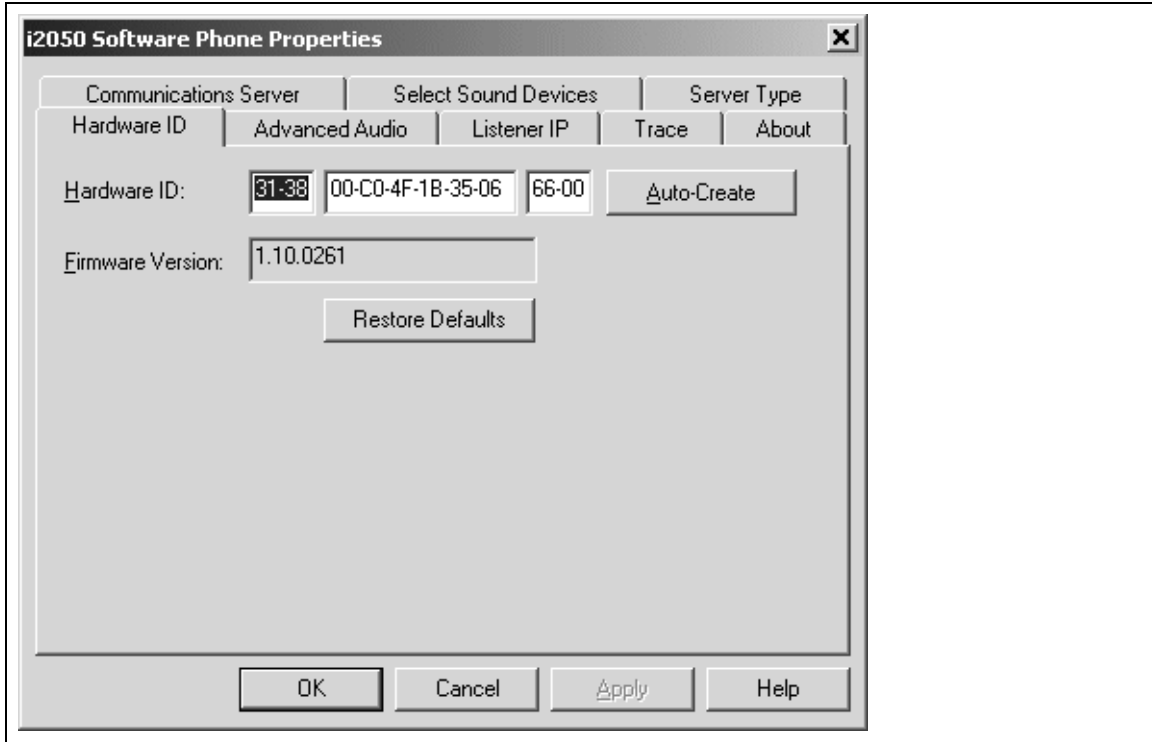


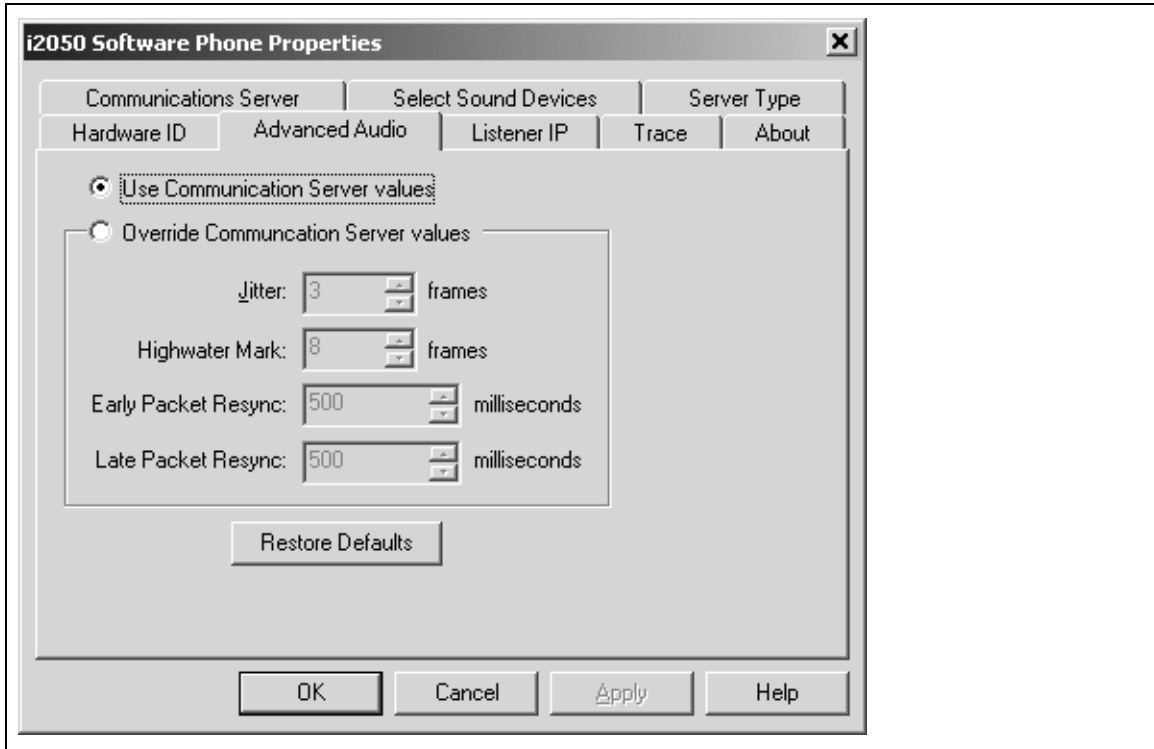
Table 3 Hardware ID

Attribute	Description
Hardware ID	Do not change the information in the first or last box in the Hardware ID field. The middle box contains the MAC address for the Ethernet card installed in your computer. The i2050 Software Phone uses the MAC address of the computer as its hardware ID. You may have to change this value if there is more than one Ethernet card in the PC or if the PC is using an extranet client which hides the true MAC address. For example, Nortel Networks Contivity Extranet Switch uses a single MAC address for all clients. This can potentially cause connection issues with your communications server.
Auto-Create	Changes the MAC address that appears in the middle Hardware ID box. If your computer has more than one Ethernet card; and therefore more than one MAC address; click the Auto-Create button to cycle through the set of MAC addresses on your computer.
Firmware Version	Shows the software version of the i2050 Software Phone.

Advanced Audio



Note: This screen is intended for expert users only.



You can use this screen to override the communications server defined values.



Note: Changing the values on this screen should be considered a last resort if audio quality issues are encountered.

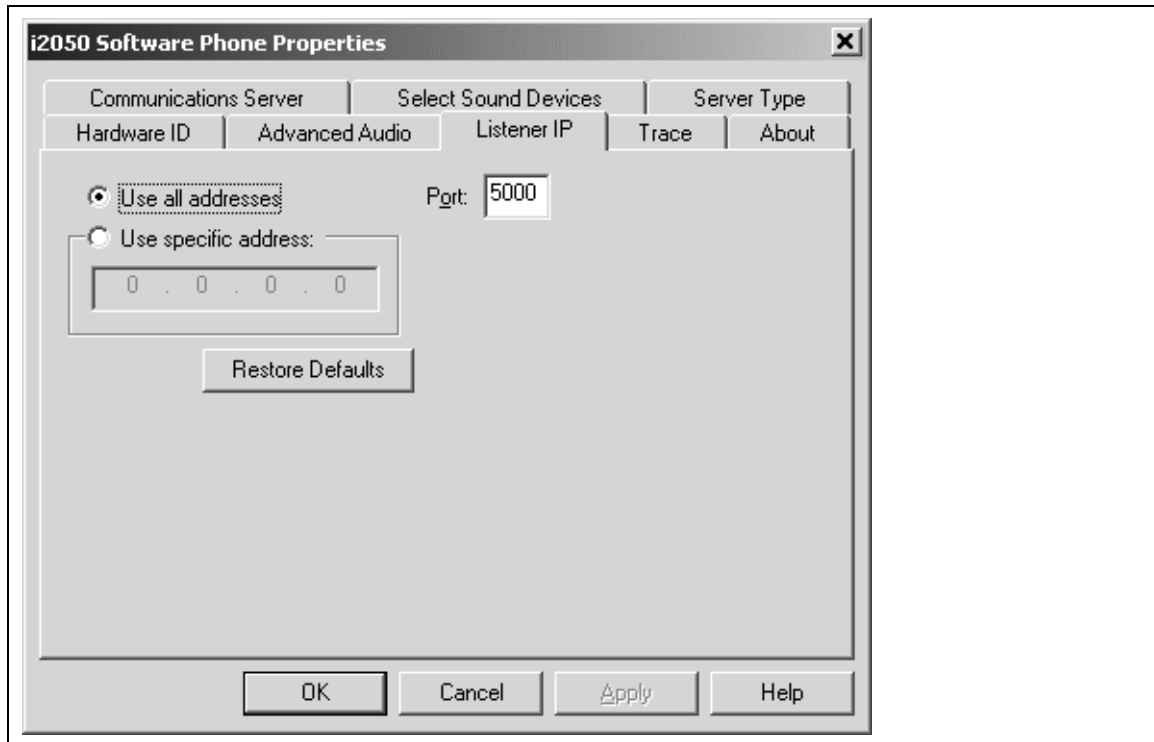
Table 4 Advanced Audio

Attribute	Description
Use Communication Server values	The i2050 Software Phone uses the values assigned by the communications server. This is the normal mode of operation.
Override Communication Server Values	In very rare cases where audio quality is adversely affected by network performance for a few clients, these values may be able to achieve a workable balance of quality.

Listener IP



Note: This screen is intended for expert users only.



This screen identifies the IP addresses and ports where the i2050 Software Phone is listening for UNISTim traffic. You can use this screen to override the port assignments when there is a conflicting application on the computer.

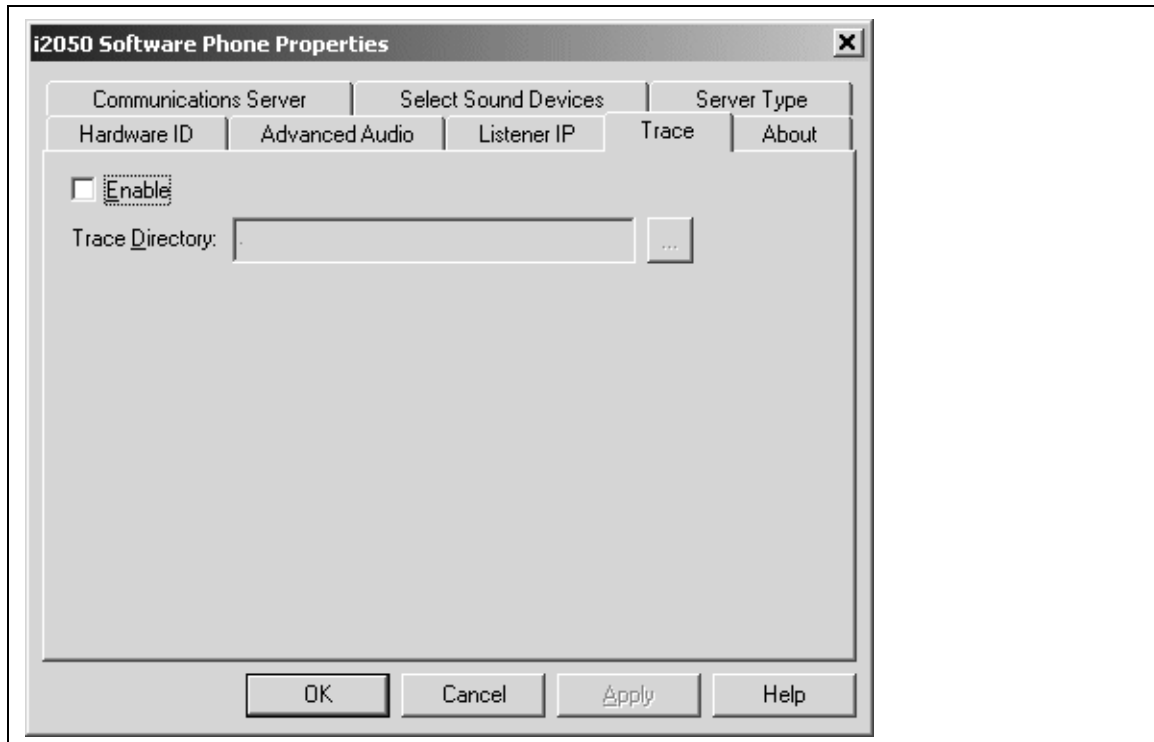
Table 5 Advanced Audio

Attribute	Description
Use all addresses	The i2050 Software Phone listens to the IP addresses on all of the network interface cards on the PC for UNISTim traffic. This is the normal mode of operation.
Port	This value may require adjustment if another application on the computer is using the same port. The two applications can co-exist by moving the port or IP address the i2050 Software Phone is listening to.
Use specific address	Using a specific address may be useful in cases where there is more than one Ethernet card and an application conflict exists.

Trace



Note: This screen is intended for Nortel Networks personnel only.

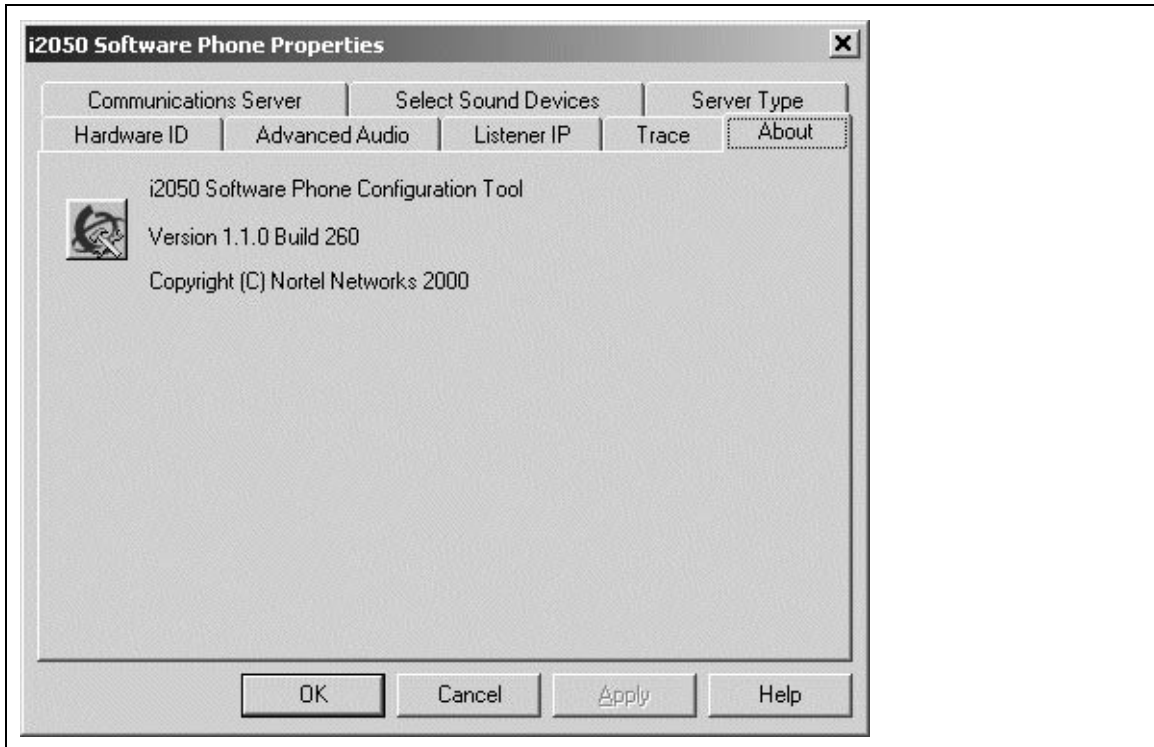


This screen can be used to record UNISstim traffic.



Note: For normal operation, the **Enable** option should be cleared. This disables the Trace feature.

About



This screen identifies the version of the i2050 Configuration Utility. This always matches the version of the i2050 Software Phone application.

Troubleshooting

Application fails to install

Symptom: During installation the following error message appears:

- Error 1931: The Windows Installer service cannot update the system file <filename>.

Description: You are trying to install i2050 Software Phone on an outdated version of the operating system.

Action: To fix the problem, you may have to upgrade your operating system. Check the Hardware and Software Requirements section of this document for the information on supported operating system releases.

Chapter 2

i2050 Software Phone - Feature Overview

The i2050 Software Phone is a Voice over IP application that allows people to communicate over the LAN and WAN from their PCs. It combines the rich set of classic telephony services of Nortel Networks IP communications servers along with PC resident directory capabilities.

The i2050 presents the following benefits:

- offers the rich set of telephony services of Nortel Networks IP communications servers such as Meridian 1, CSE 1000, BCM, Centrex and SL-100.
- offers the “universality” of a Windows-based application (Windows 2000, Windows 98)
- encapsulates the operation of the i2004, providing all i2004 functionality in a familiar interface wrapper. As per the i2004, the i2050 provides:
 - Quality of Service (QoS) and authentication
 - automatic detection of call server location using DHCP
 - features and services are provided by the network (such as call features, calling line identification and voice mail)
- reduces the set of wires required to the desktop by eliminating the need for separate computer and telephone wires
- presents an intuitive, flexible interface including:
 - slide out trays that provide access to frequently used features and services
 - retracted trays that provide a smaller interface with full operational capabilities for a single line
 - viewable line status
 - 10 item lists for quick dial and call log access from both the main and system tray interface
 - allows users to customize the interface and directories
 - has a multilingual interface
 - provides programmable macro functions for programming lengthy dialing patterns
 - hotkeys map the computer keyboard to application buttons
- can be operated from the Windows system tray, allowing the user to take and place calls without interrupting other work
- includes a directory application which provides “one-click” direct dialing, access to a variety of directory types, quick dial lists, incoming and outgoing call logs
- interfaces with TAPI applications such as Outlook and ACT!
- provides immediate answers to user questions through online help
- USB Audio Kit provides a controlled high quality audio environment. This adapter provides:
 - predictable, absolute audio levels
 - uses standard Windows drivers
 - requires no additional software or drivers
 - supported on Windows 98 and Windows 2000
 - in-use lamp connector

- user selectable ringing device to alert the user to incoming calls through speakers when the headset is not being worn
- supports G.723, G.729 and G.711 codecs for a operation at a variety of network connection speeds

The intuitiveness of the i2050 Software Phone interface is based on its similarity and compatibility with the ergonomics of the i2004 Internet Telephone and Windows-based applications. Training investment with the i2004 and network applications presented using the i2004 are directly portable to i2050 use.

Moreover, the i2050 Software Phone allows users to customize the interface to their own preferences for:

- volume of speaker and microphone
- type of “receiver and speaker” (handset, headset, or hands-free communication)
- language of interface
- ringer device

The i2050 Software Phone presents clearly identified windows to allow users to:

- manage one or more communications in progress
- access local or remote corporate directories
- track and manage records of incoming and outgoing calls
- access network resident services provided by the call server such as voice mail

The following i2050 Software Phone interfaces are described in their own section:

- Primary User Interface, which provides access to features and line appearances
- System Tray Interface, which provides operation of the i2050 from the Windows system tray
- Directory Interface, which offers access to internal and external databases (directory, personal address book, call logbook, quick-dial lists)

Primary User Interface

The i2050's Primary User Interface provides call control and access to other network services. The display area and application buttons are mapped directly from the i2004 Internet Telephone. Therefore, knowledge of one interface is directly portable to the other, reducing training costs.

Figure 1 Primary Interface with retracted trays

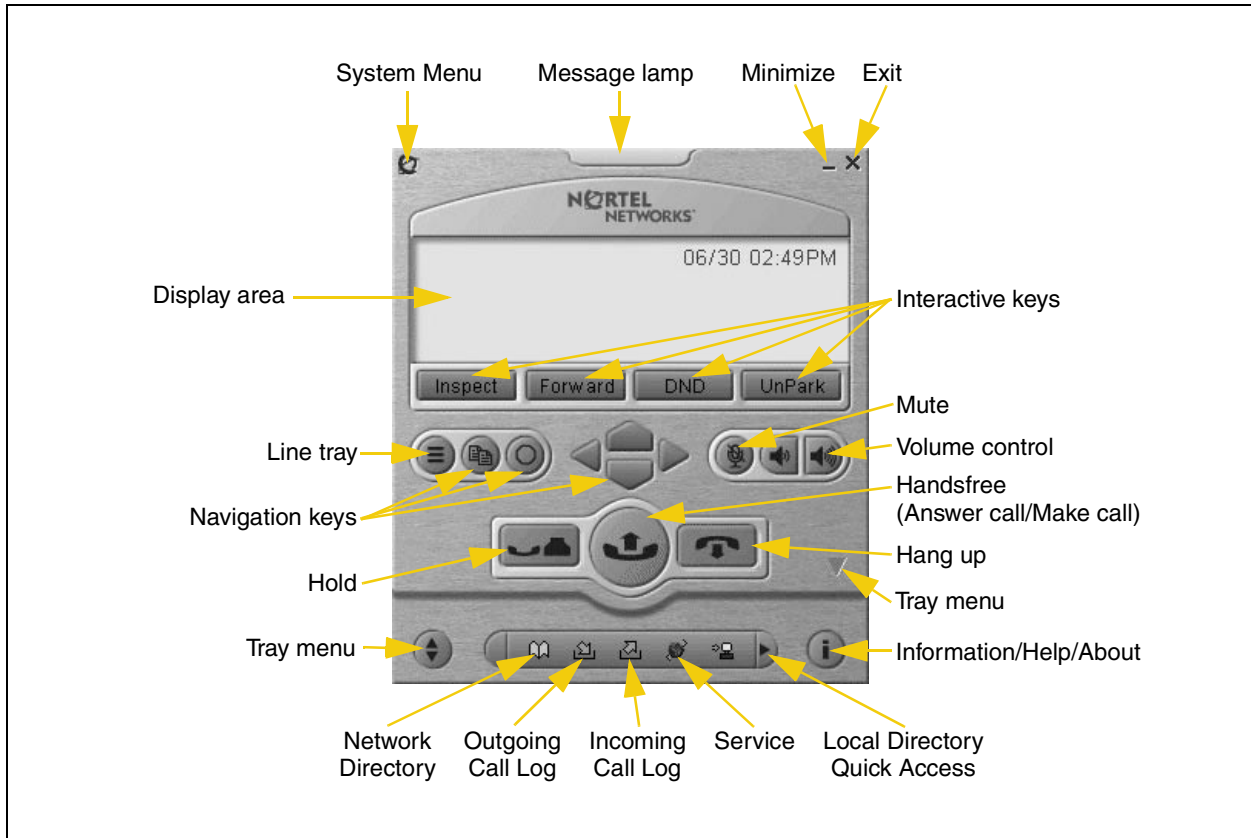
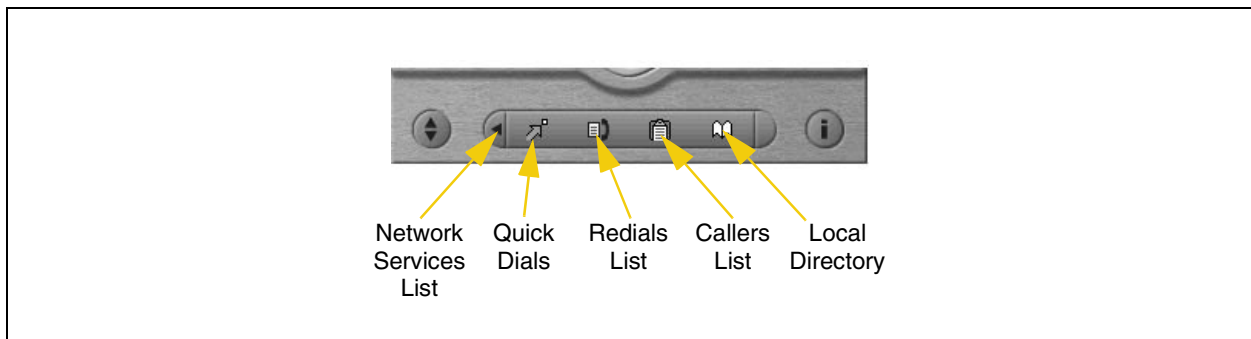


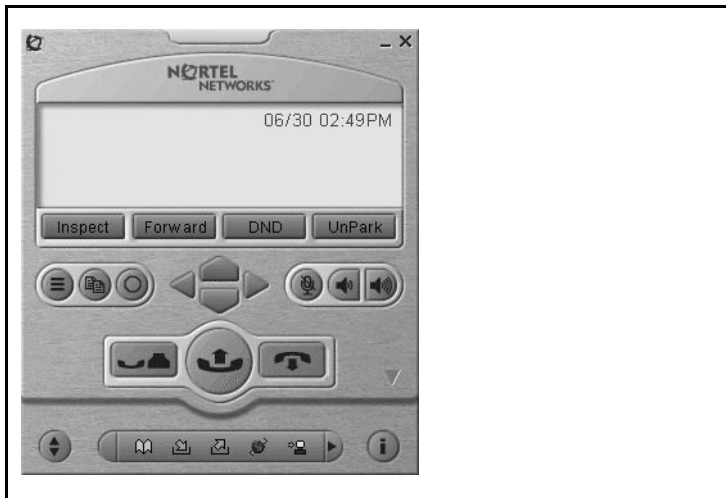
Figure 2 Local Directory Quick Access



The i2050's Enhanced Skin presents a small user interface which can be expanded by selecting various trays.

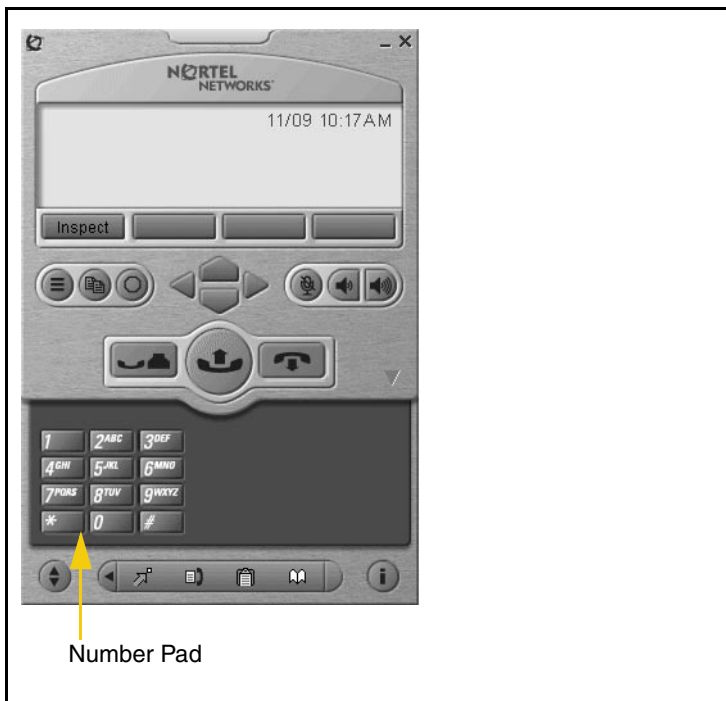
- Retracted Tray
- Number Pad Tray
- Lines Tray
- Combo Tray
- Local Directory Quick Access Trays

Figure 3 Retracted Tray



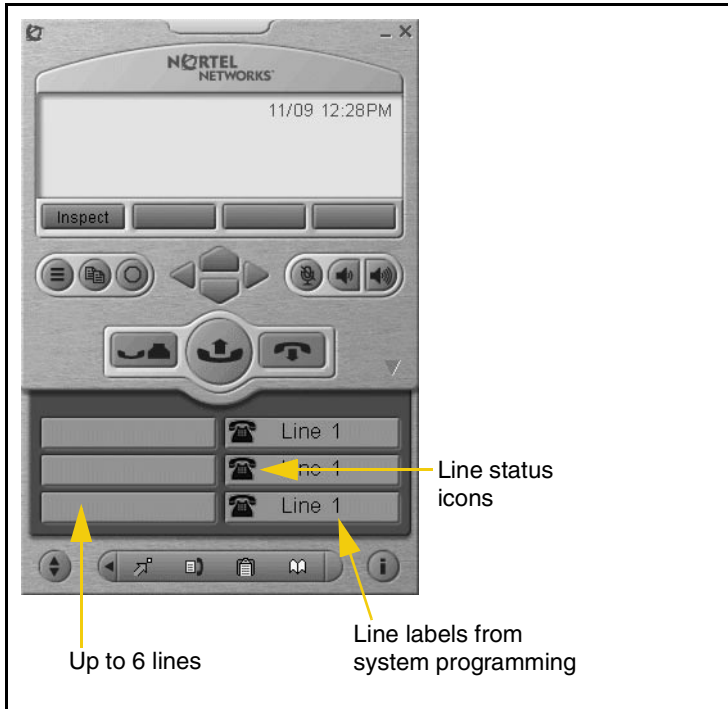
- The default presentation is with the operational trays retracted. In this mode the user can operate most features available from the i2004. Calls can be answered or made by pressing the green off-hook button. In this mode the call server will select the line to answer or engage. The user can also hang-up, hold, retrieve from hold, mute, adjust volume and access network services such as voice mail.

Figure 4 Number Pad Tray



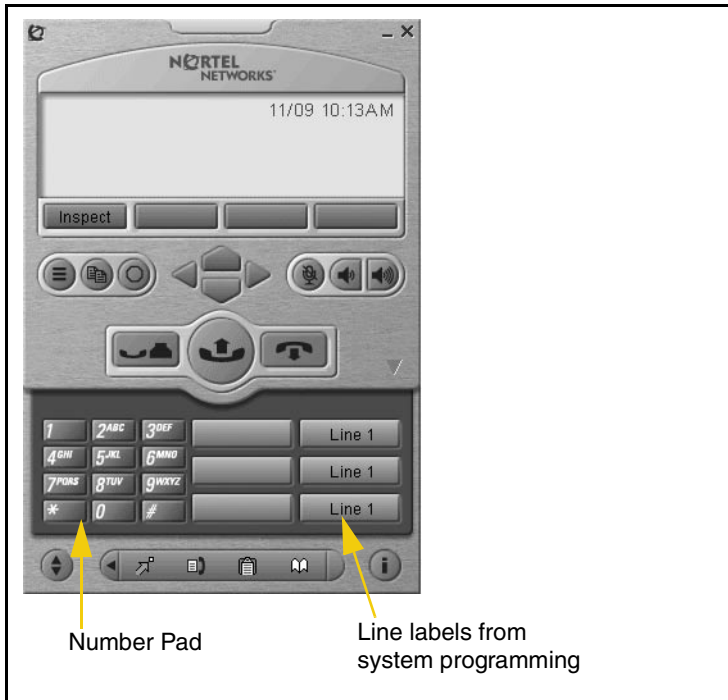
- Provides a graphic keypad to dial numbers on with a mouse. In all tray selections numbers can also be dialed by using the computer keyboard.

Figure 5 Lines Tray

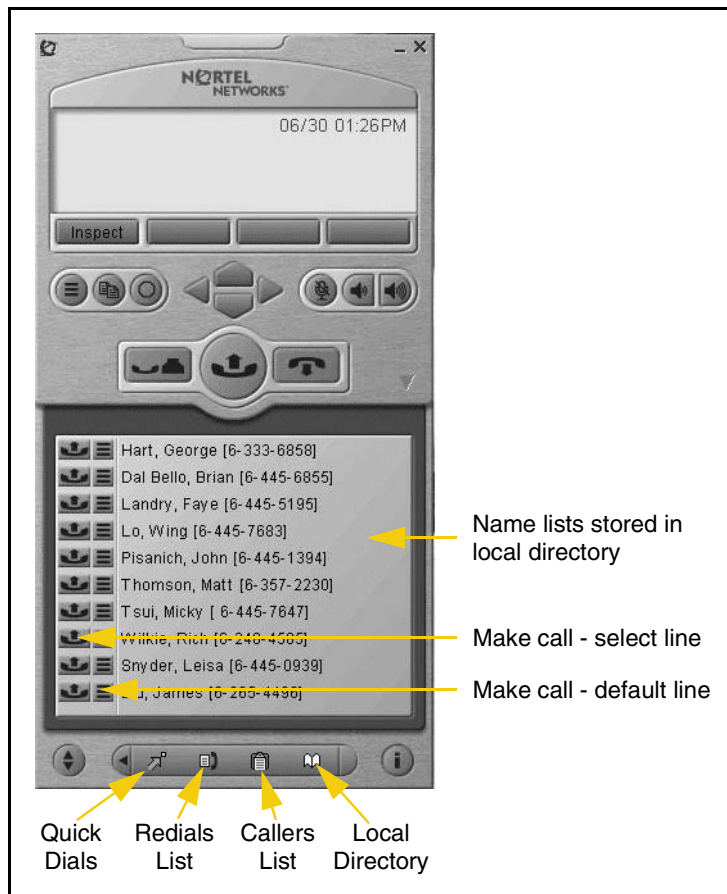


- Shows up to six lines or feature keys provisioned for the set by the call server. The status of each line is illustrated by a graphic icon (idle, ringing, connected, etc.). The line is labeled based on its call manager provisioning information.

Figure 6 Combo Tray



- Combines the Line Tray and the Number Pad tray at the expense of the removal of the line state icons.

Figure 7 Local Directory Quick Access Tray

- The Local Directory maintains lists of quick dials, redials and callers. Ten of the items in these lists can be viewed and dialed directly from the Primary User Interface using Quick Access Trays.

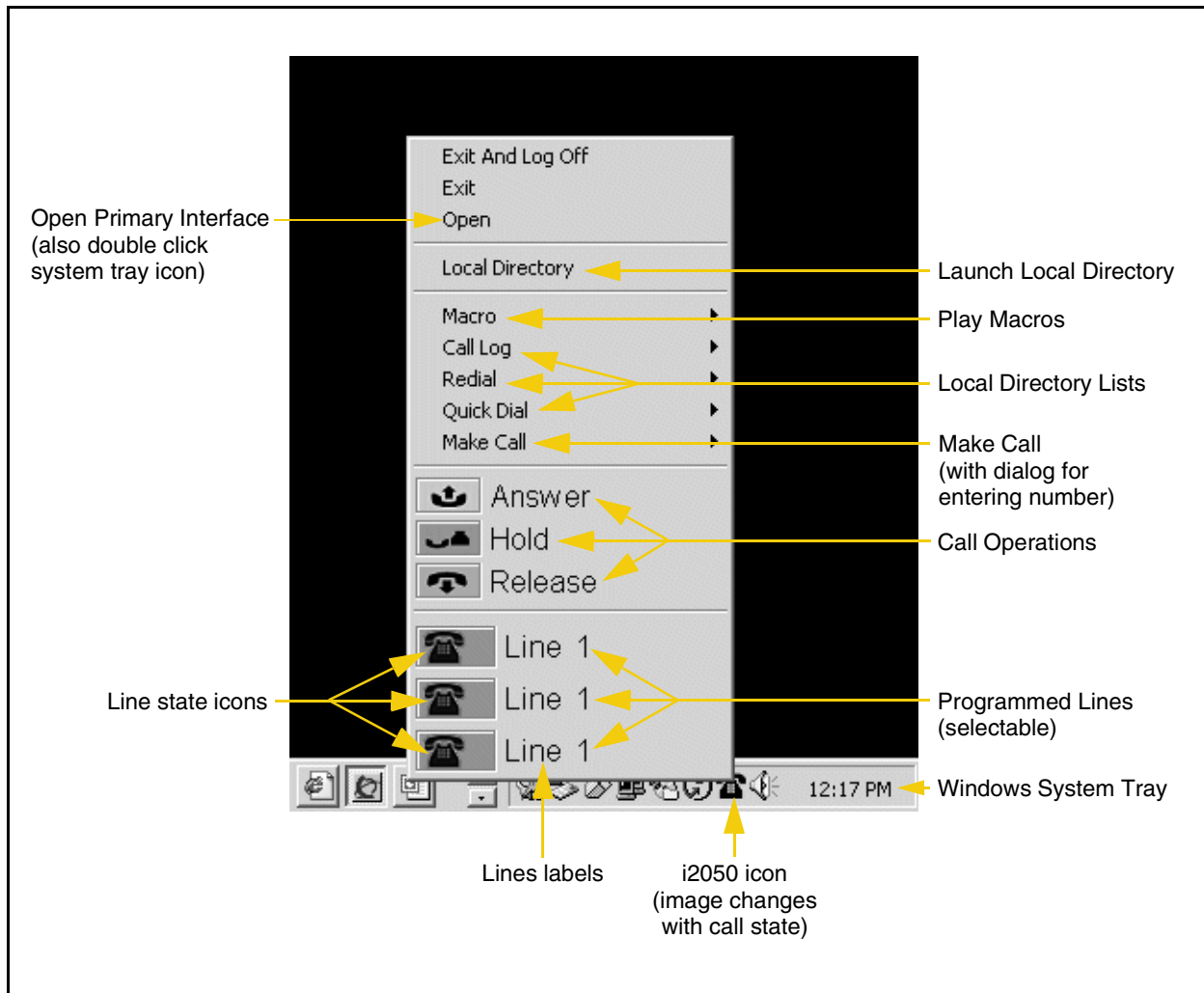
Within the Primary User Interface, the computer keyboard provides hotkeys for one press access to common features:

- answer (Enter)
- release (F12)
- hold (F5)
- softkeys/interactive keys (F1-F4)
- alphabetic keys map to numbers as per i2004 dial-pad mapping
- arrow keys map to navigation keys
- Alt-V will paste/insert data to the interface (For example, you can copy a phone number from Outlook and paste it into the i2050 interface.)

System Tray Interface

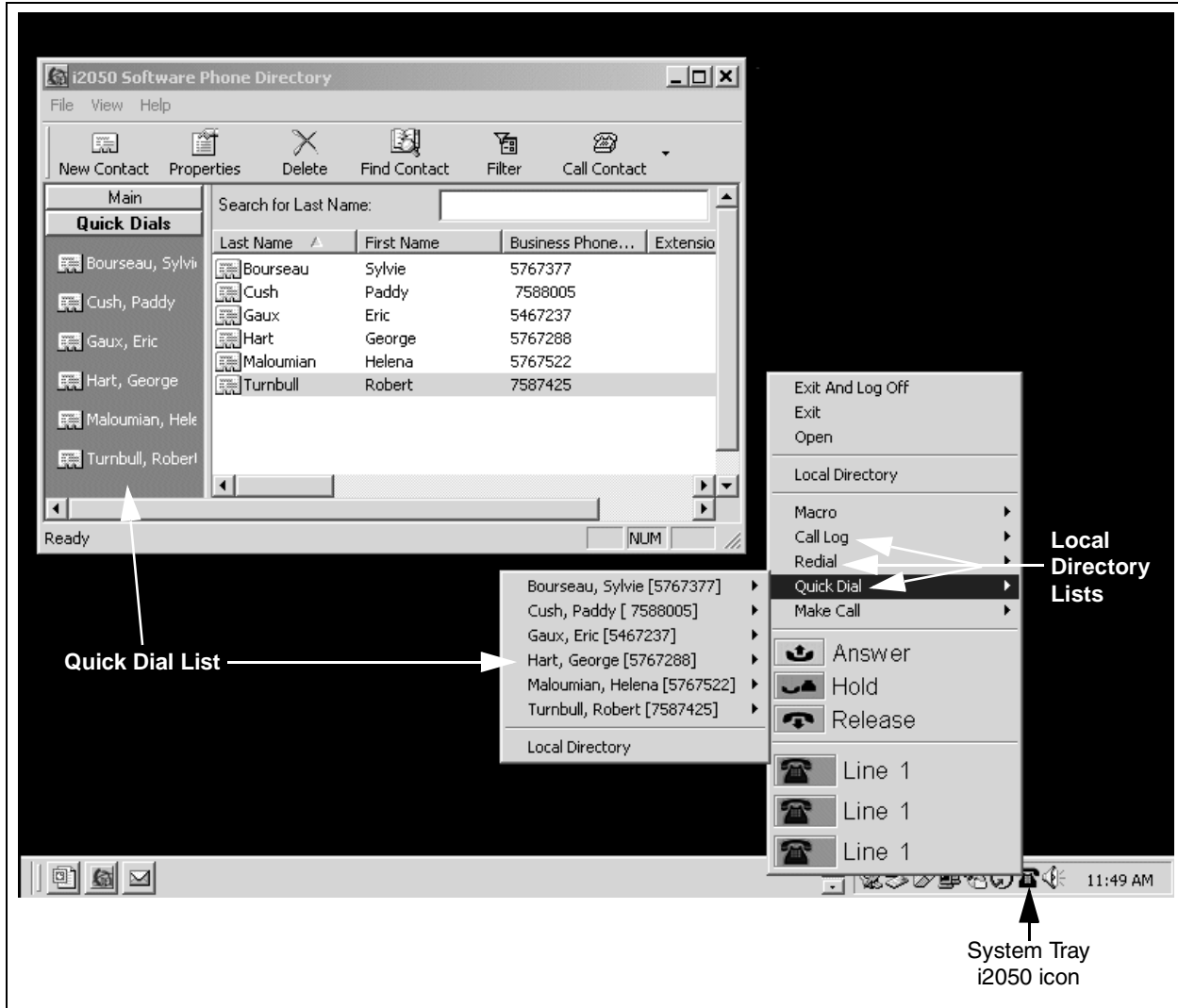
Many of i2050 Software Phone features are available from the i2050's System Tray Interface. This interface allows you to operate the i2050 Software Phone without interrupting your workflow. For example, you can answer an incoming call from the system tray without launching the Primary User Interface.

Figure 8 System Tray Interface



Easy access to the Local Directory's Quick Dial, Redial and Caller lists is provided by fly-out menus.

Figure 9 System Tray Interface - Local Directory Quick Access



Local Directory Interface

The i2050's Directory Interface allows the user to maintain a personal directory for placing calls. The directory may be stored with the i2050 itself (by default in a local file named Directory.mdb); or linked to external directories. Linking to LDAP, Outlook, Windows Address Book (WAB) and ACT! directory types is supported.

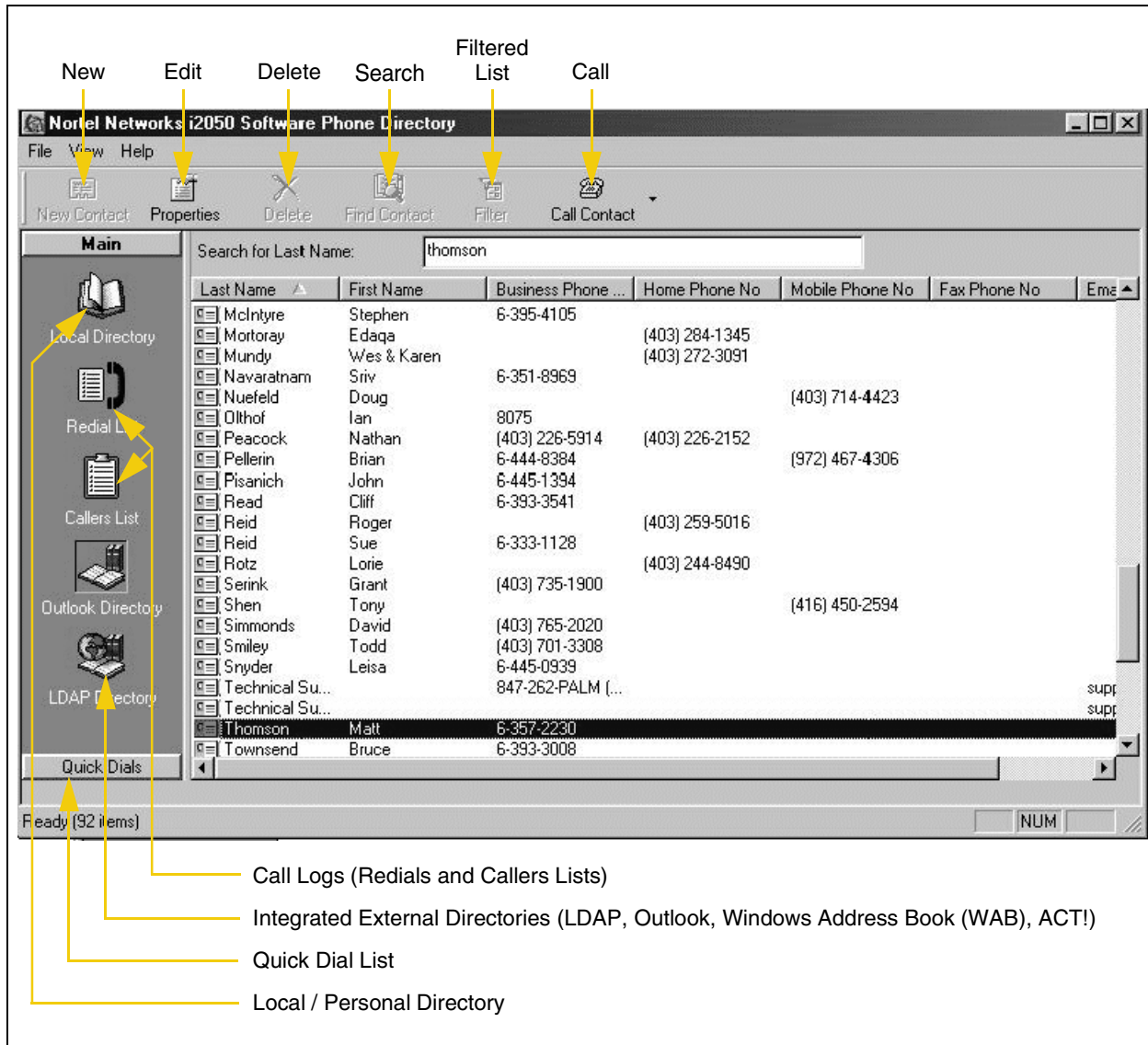
Users can create, modify and delete entries in the local directory and may copy entries from external directories, the redial list and the caller lists into the local directory (select an entry, right click and select "Add to Local Directory ...").

Directory lists can be "filtered" in simple or complex ways to show, for example, people who's last name starts with 'B' and work for "Nortel Networks".

Ten items from each of the Quick Dial, Caller List and Redial List are also viewable from the Primary User Interface and the System Tray Interface.

The Quick Dial list is a shortcut to entries stored elsewhere (in the local directory or in an external directory). Callers list and Redial list are stored as lists within the i2050's directory storage file. Some communications servers do not provide caller identification to the i2050 Software Phone.

Figure 10 Directory interface



Calls can be made by selecting a contact entry and then:

- right clicking and selecting which of the contact's numbers to call; or by
- pressing the call function at the top of the directory window.

Figure 11 Directory interface - make a call

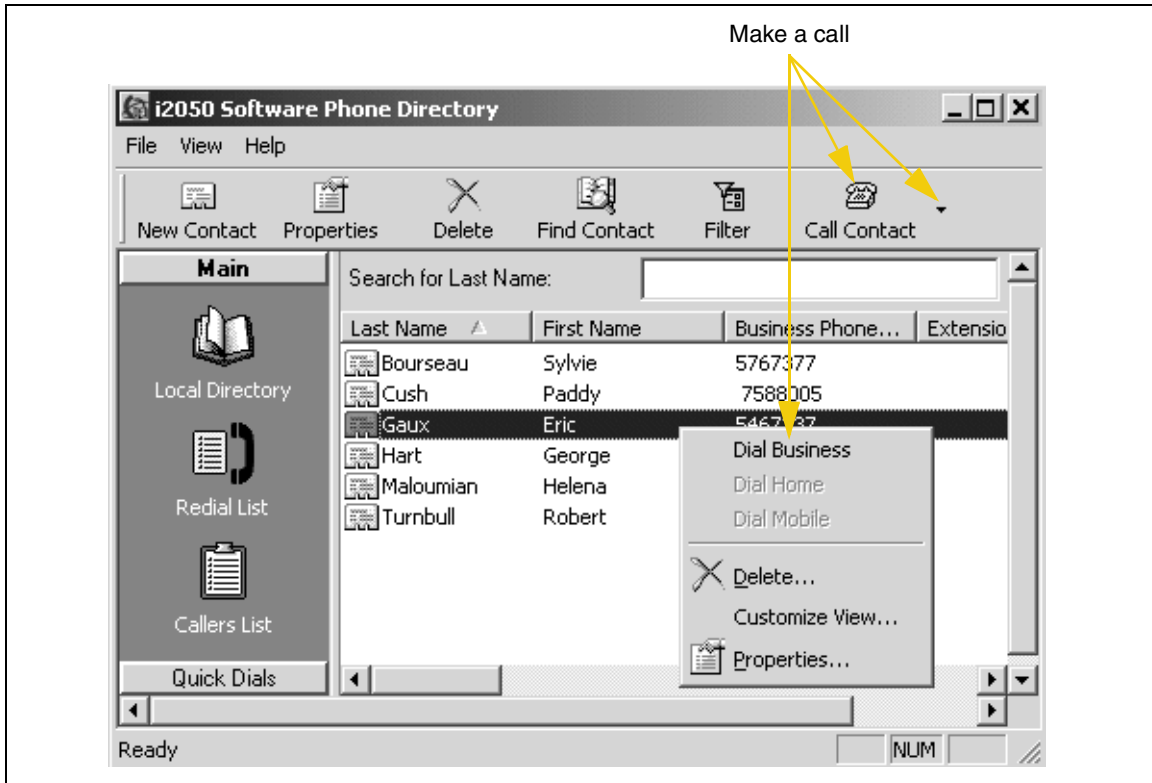


Figure 12 Directory interface - linking to an external directory

