



# **NexPath Telephony Server System Administration Guide**

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PN3098, Rev Revision G  
September 11, 2003

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For Software Release 7.

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The NexPath Telephony Server combines all of the functions of a PBX, voice mail, auto-attendant, automated call distribution (ACD), and network-ready computer telephony server into a single, low cost, easily-maintained, completely integrated system.

The heart of the NexPath Telephony Server is a proprietary IBM-PC-compatible card which digitizes all incoming and outgoing calls. This card allows the system to take advantage of the power, reliability, and low cost of the ubiquitous IBM-PC platform, while allowing all of the advanced telephony features required in a modern phone system to be easily implemented. An additional bonus of using the PC platform and digitizing all telephone traffic is the simplicity and flexibility it allows when integrating the NexPath Telephony Server with other desktop computers within your organization.

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**Note** This manual, along with all other system manuals, are available on the NexPath Telephony Server in Adobe Acrobat format, if you have a web browser and your PC is connected to the LAN. The URL for the list of manuals is *http://<system name>/manuals/*<sup>1</sup>. Other URLs that are useful are available on the NexPath Telephony Server at the URL *http://<system name>/* or *http://<system name>/help/*.

---

The use of standard PC hardware in the NexPath Telephony Server also simplifies maintenance, since many components such as the hard disk, the power supply, the floppy disk, etc. are standard items available from

- 
1. Replace <system name> with the name assigned your specific NexPath Telephony Server by your system administrator, or the IP address of the NexPath Telephony Server. If you use the IP address, you must put in the trailing “/”.

any PC supplier. NexPath provides all of the software necessary to completely reload the hard disk in the event of a component failure.

This manual describes how to install, configure, and maintain your NexPath Telephony Server. It expands on the concepts introduced in the *NexPath Telephony Server User's Guide*. Please read and familiarize yourself with that manual before proceeding.

### *Intended audience*

This manual is written for computer-literate personnel. It assumes that you know how to:

- Connect computers to a network<sup>1</sup> and test network connections using “ping” or equivalent commands.
- Load and test Web browser software on the computers in your building.

Because of the wide variety of networks packages and hardware platforms available, we cannot give explicit detail within this manual on how to perform these operations for your particular system. Check the manuals which came with your networking hardware and software, as well as the Web browser documentation, if you have problems in any of these areas.

This manual only covers the commands and procedures necessary to set up and maintain the NexPath Telephony Server.

### *Requirements*

To install and maintain your NexPath Telephony Server, you will need:

- A clean, dry location for the system with a source of 300 watts of 110V/60Hz AC power nearby.
- Twisted-pair phone wire to run to each telephone, FAX machine, or modem you are going to connect to the NexPath Telephony Server.

---

1. The NexPath Telephony Server comes with the software pre-installed and preconfigured for use right out of the box. To alter any of the system's parameters, though, such as the auto-attendant configuration, you must change the system's configuration with a network connection using World Wide Web browser software.

- In order to administer and customize your telephone system, you will need a computer connected to the LAN with a TCP/IP-compatible network connection, that has a web browser installed such as Mozilla 1.0 or later, Netscape Navigator 4.0 or later, or Microsoft Internet Explorer 4.0 or later, and Javascript enabled in the browser.

### *Software version number applicable to this manual*

This manual is intended for use with software release number 2003.230.09 or later, generically known as Release 7. A later version number is indicated by a larger number in the second number position. You can check which version of software you are currently running on your NexPath Telephony Server in following ways:

- By looking at the bottom of the AdminTool log-in page.
- By checking at the top of the main Menu page of AdminTool.
- By connecting a monitor to the VGA port on the back of the unit. The software Release and version number should be displayed along with the current network parameter settings.

If necessary, please contact NexPath support or your dealer, if you purchased from a dealer, for details on how to upgrade your system.

### *Technical support*

If you have any questions or suggestions related to this equipment, please contact the organization from whom you purchased the system, either your dealer or NexPath Corporation. NexPath provides telephone support for a single contact person (the system administrator) at no charge for a limited period of time (usually 90 days) after the purchase of the system. Extended telephone support and software upgrade services are available for an annual charge.

## *Legal Warnings*

The NexPath Telephony Server has many features that allow a business to adapt the phone system to their individual needs. However, not all features of the NexPath Telephony Server can be legally utilized in all localities. In particular, the feature of Listen-In to an on-going conversation, or Recording of an on-going conversation, without the consent of one or both parties may violate laws in your location. Also, programming the NexPath Telephony Server as an Automatic Dial and Announce Device (ADAD), using the LAN API, and using it for commercial solicitation or without the consent of the called party, is a violation of many state laws, and may violate federal law.

**It is the responsibility of the user of the NexPath Telephony Server to assure that they are utilizing features of the telephone system in a manner that complies with all applicable laws. Seek competent legal advice if you are not sure of the legal uses in your location.**

Probably the most time-consuming task when getting your new NexPath Telephony Server up and running is installing the wiring between your system and all of the phone lines it must support. This chapter covers that installation, along with other hardware-related setup issues. Software configuration is covered in the next chapter.

### *Definitions*

In this document, we will use the term **physical lines** to refer to the twisted-pair telephone wires you will be connecting to the NexPath Telephony Server. **Inside lines** are the physical lines which you will run within your building and connect to your telephones, FAX machines, etc., while **outside lines** (or CO, for Central Office, lines) are the physical lines which come from the phone company. The actual number of inside lines or outside lines available in your system will depend on which configuration of the NexPath Telephony Server you purchased.

---

**Note** *Line numbers are not the same as extension numbers!* Extension numbers are the phone numbers a caller dials to ring a given individual or department. Line numbers identify the physical connection of the wires to the system. Thus, while you may configure your system to have as many different extension numbers as you want, you can never have more than 136 physical lines connected to the system (less if you have less than seventeen cards in your system). Inside and outside line numbers are used, among

other things, to identify which line a call is coming in on or which phone to ring when a caller dials a specific extension number.

---

*Verify that you have been shipped the following components:*

- The NexPath Telephony Server computer itself with the appropriate number of telephone cards.
- The plastic base shoe for the NexPath Telephony Server computer with four 6-32 x 11/32” screws (mini-tower systems only).
- One RJ11-to-RCA-plug hold music cable (PN3108).
- An AC line cord.
- The *NexPath Telephony Server User’s Guide*.
- This book (the *NexPath Telephony Server System Administration Guide*).
- *NexPath Telephony Server System Administration Guide Appendices*, which contains detailed information on settings and hardware configuration for each system type.
- Several *Quick Reference Guides*, small booklets for each user to keep by the telephone.
- A warranty registration card.
- A two page *Quick Start Guide* with *Survival Tips*.
- *Release Notes* detailing information released after this manual was printed.
- A software package with a CDROM and one boot floppy.

If purchased, the following optional components should be included in your package:

- One or more RJ11-to-50-pin cable for use with telephone cards in groups of three (PN3102).
- One or more 25-pair mini patch panels (PN3053) or 25-pair punch-down blocks (PN3055).
- One or more 66-blocks (punch down blocks) (PN3055).



### *Add the “base shoe” (optional, mini-tower systems only)*

If your system is a mini-tower system, included with your system is a rectangular piece of plastic, or “shoe,” which can be added to the base of the CPU chassis for additional stability, additional protection against dust, and additional protection against possible water damage.

To install this base shoe, perform the following:

1. Turn the unit upside-down on a piece of cardboard or some other soft surface so as to protect the finish on the top of the case.
2. Orient the base so that the arrows that are molded into the base are pointed towards the front of the unit and the word “Macase” that is molded into the base is visible. That is, the base should be attached so as to evenly widen the footprint of the unit.
3. Use the four screws supplied with the base to secure the base to the four pre-threaded holes on the bottom of the unit.

### *Determine a location for your system*

While certainly not required, the NexPath Telephony Server is normally installed in a “phone room”, which is usually a small closet where the telephone company’s wires enter your building. This location must be dry and must have a source of either 110V/6A/60Hz or 230V/4A/60Hz AC power. The system should be installed off of the ground; either on a table or a shelf, and care should be taken so as not to block the vent holes on the system’s front and rear panels.

---

**Note** Even though the NexPath Telephony Server is based on PC-compatible hardware, no keyboard or monitor is required for normal system operation. Network and other minimal configuration is possible (and somewhat easier) from the keyboard. For administration of the telephone system, however, you must use the network and a web browser on a client computer.

---

## *Plan your wiring*

To plan your wiring, fill in the worksheet in the appendix to this manual that is appropriate to your system, taking into account the following constraints:

### **AC power-fail bypass relays**

In the event AC power is lost, internal bypass relays on each card inside the system will automatically cause each outside line to be connected to a specific inside line so that basic telephone service is maintained during AC power failures. Before wiring up your system, decide which inside lines (i.e., telephones) you want to remain connected to the outside world in the event of a power outage. This information is in the wiring worksheet portion of the *System Administration Guide Appendices* manual. See the pages that are appropriate to your system (NTS/8 through NTS/136).

### **Determining which jacks are to be used for hold music and the PA system**

Another constraint when assigning physical lines is that one outside line is usually configured as the audio output for a PA amplifier and another line is configured as a hold music input. By default, these are outside lines 1 and 4 respectively, though other outside lines can be used for this purpose, and outside lines 1 and 4 can be reconfigured as general-purpose outside lines during the software configuration process.

## *Hook the system up*

Once you've filled out your wiring worksheet and determined which lines you want to go where, run twisted-pair phone wire to all of the locations you want serviced by the NexPath Telephony Server by running the wires through your ceiling, walls, or floors.

---

**Note** To minimize the risk of fire, Underwriters Laboratories requires that 26AWG or heavier wire be used for all phone-line connections to the NexPath Telephony Server. In addition, all hardware used at the ends of the cables should utilize UL-recognized components.

UL also requires a second earth ground to the telephone system, in addition to the ground on the power connector. Use a #12 or heavier (#10 if possible) copper ground wire, and attached it to a building

ground or cold water pipe. The ground wire can be connected to a screw on the back of the NexPath Telephony Server near the power supply fan or power cord connector. This is particularly important in areas subject to frequent electrical storms.

---

You will probably want to terminate each run of wire that ends at a desktop, FAX machine, or other terminal point with a standard RJ-11 jack (not supplied), connecting the two wires of the twisted pair at each location to the two innermost pins of the jack. It is unimportant which of the two wires goes to which of the two center pins of the RJ-11 jack at the user's end (not polarity sensitive).

At the NexPath Telephony Server end, you will need to connect the twisted pair wires of the physical lines to the RJ-11 jacks on the back of the system using one of the connection methods described below.

- Creating your own custom wiring and connecting directly into the back of the NexPath Telephony Server CPU (not recommended).
- Using one or more RJ11-to-50-pin adapter cables with either new or existing punch-down blocks to bring each line of the NexPath Telephony Server CPU to its own pair of lugs, then cross-connecting from there to either existing punch-down blocks or wiring.
- Using one or more RJ11-to-50-pin adapter cables and 25-pair patch panels to bring each line of the NexPath Telephony Server CPU to its own RJ-11 jack.

---

**Note** NexPath recommends the use of electrical surge suppressors on all telephone lines if you are located in an area with frequent electrical storms. Even though it is impossible to completely defend against nearby or direct lightening strikes, the more additional suppressors that you have in addition to the telco suppressors will help in preventing major damage to your telephone system.

---

**Note** **Be careful not to get electrocuted when connecting outside lines to your system!** The telephone company will be supplying from 24 to 50 volts DC on all outside lines, with the voltage rising to approximately 90 VAC when a line is ringing!

---

**Note** **CAUTION:**

**Do not install or work on the wiring of any telephone system during an electrical storm or when visible lightening is present. Telephone lines (and power lines for that matter) are frequently hit by lightening, which can follow the wires and**

**travel inside buildings, causing significant property damage and voltages and currents that are a threat to life. Discontinue work until the storm and lightning has subsided.**

---

## Details about telephone wiring connections to the NexPath Telephony Server

NexPath recommends that you use the NexPath Custom RJ-11 to 50-pin adaptor cables (PN 3102) to connect the telephone building wiring and central office lines to your systems (see the next section). However, if you prefer to make your own connections directly, the following information is important.

All physical line connections to the NexPath Telephony Server CPU are made through the RJ-11 jacks on the back of the NexPath Telephony Server CPU chassis. While these jacks look like (and are physically compatible with) the normal telephone jacks like those in a private home, with the NexPath Telephony Server, you cannot simply plug one telephone into each jack.

Instead, all jacks on the rear panel of the NexPath Telephony Server have six contacts in them (unlike the normal four-contact RJ-11s used with normal telephones), and you will need to connect from one to three physical lines to each jack. Refer to the diagram in the *System Administration Guide Appendices* that is appropriate for your system for information on which line number is associated with which jack.

In the diagrams found there, the association of the line numbers listed with the pins inside the 6-contact RJ-11 jacks is as follows:

- The line number listed first is connected to the innermost pair (i.e., pins 3 and 4) of the jack. These pins correspond to the red and green wires of a pre-assembled cable.
- A second line number, if listed, is connected to middle pair (i.e., pins 2 and 5) of the jack. In a pre-assembled cable, these pins correspond to the yellow and black wires.
- A third line number, if listed, is connected to outermost pair (i.e., pins 1 and 6) of the jack. In a pre-assembled cable, these pins correspond to the blue and white wires.

So, for example, the jack for card 1 that lines up with the green dot on the lower edge of the case contains the pins for outside lines 2 and 3, with the innermost pair of pins in the jack corresponding to outside line #2, and the next pair of pins out from that inner pair corresponding to outside line #3.

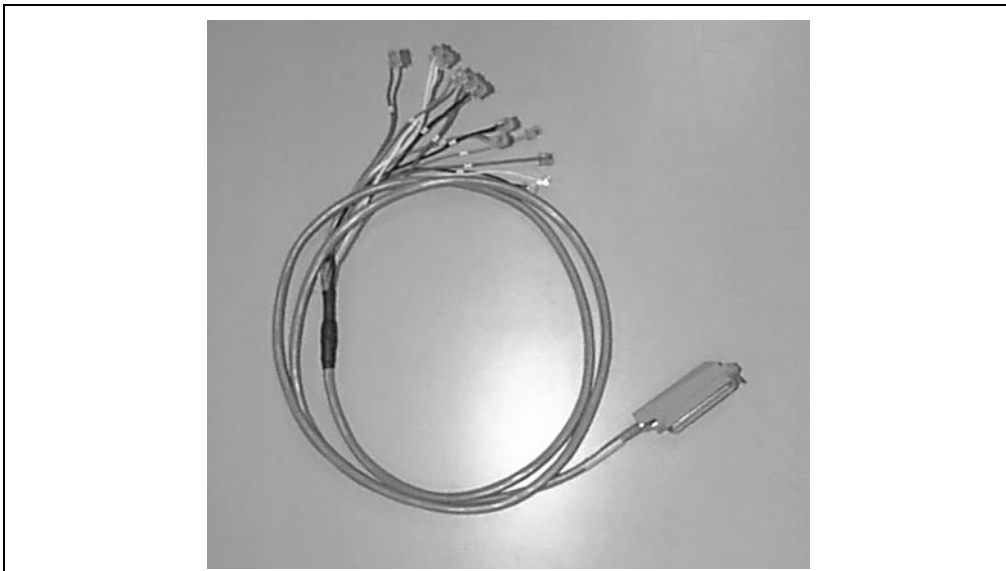
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**Note** The NexPath Telephony Server does not make a distinction as to which is the “tip” wire and which is the “ring” wire within a pair. That is, either of the twisted-pair wires of a given physical line can be connected to either pin of a pair (*i.e.*, polarity does not matter).

---

### Using RJ11-to-50-pin adapter cables (recommended)

The NexPath RJ11-to-50-pin adapter cables (one cable required for each group of three CBTI cards) adapt the RJ-11 jacks at the rear panel of the NexPath Telephony Server CPU to the male 50-pin Centronics-style connectors such as those used with most punch-down blocks and patch panels. A typical example of this cable is pictured below (actual production may vary in appearance). For best reliability, NexPath recommends you use the NexPath cable rather than building your own custom wiring.



**FIGURE 2-1: The RJ11-to-50-pin cable available from NexPath (actual production varies).**

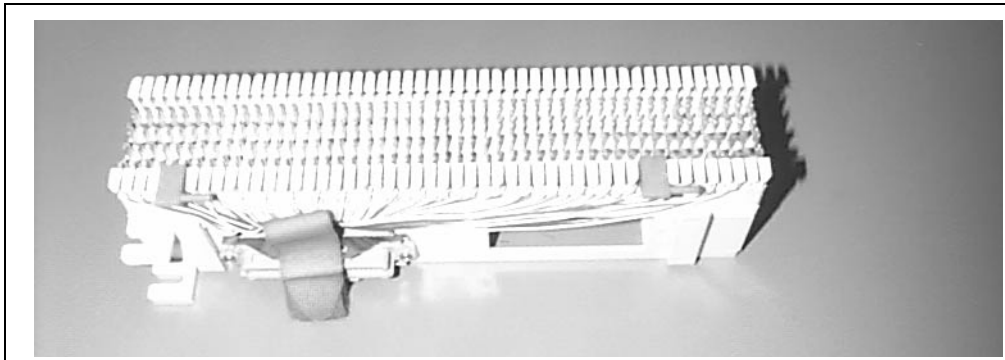
At one end of this cable are twelve RJ-11 plugs, each color-coded and numbered. At the other end is one male 50-pin connector. You may have two cables; the additional cable is an extension cable and is provided for your convenience. Use it if you need the extra length.

To install the cable, plug each RJ-11 plug of the cable into its corresponding color-coded and numbered jack on the NexPath Telephony Server rear panel. For example, the green plug labelled “1” on the cable goes into the “green” jack of card 1, where the card numbers are listed below each card on the rear of the case and the color codes of the jacks are identified by dots at the bottom (or side) of the case. Each cable can bring out the RJ11 jacks of up to three cards. For cards numbered 4 and higher, connect cable #1 to card 4, #2 to card 5, and #3 to card 6, and similarly for groups of three cards until all cards are connected.

See the appendix to this manual that is appropriate to your system for details of the pin-outs of the 50-pin ends of these cables.

## Using punch-down blocks

Many phone rooms use punch-down blocks to connect the lines of a company’s phone system to the company’s PBX, voicemail server, and other components of their system. A picture of the punch-down block available from NexPath is given below (actual production may vary in appearance).



**FIGURE 2-2: The 25-pair punch-down block available from NexPath (PN3055)**

With punch-down blocks, single-strand (i.e., solid conductor) 24 or 26 AWG phone wires are impaled (“punched down”) on lugs which in turn are connected to the components of the phone system either through more solid wire or by bringing groups of the lugs together to 50-pin (i.e., 25-pair) connectors and going from there either to other punch-down blocks or to the components of the phone system through one or more bundled cable(s). You “punch-down” the wire on the lugs of the punch-down blocks (hence the name) using a punch-down tool such as the AT&T Type AT-8762D.

---

**Note** You will have to either create custom wiring as described under “Details about telephone wiring connections to the NexPath Telephony Server” on page 10 or use the RJ11-to-50-pin cables described in “Using RJ11-to-50-pin adapter cables (recommended)” on page 11 to bring the lines from the rear of the NexPath Telephony Server to your punch-down blocks. Be advised that using solid wire for crimping to RJ-11 style connectors is unreliable with moderate temperature variations and/or mechanical stresses.

---

### Using 25-pair mini patch panels

Another method for connecting to the NexPath Telephony Server is to use the RJ11-to-50-pin cable described in “Using RJ11-to-50-pin adapter cables (recommended)” on page 11 in conjunction with a 25-pair mini patch-panel. A picture of the 25-pair mini patch panel is shown below.



FIGURE 2-3: The 25-pair mini patch panel (PN3053) available from NexPath

If you then add an RJ11 jack to each physical line coming into your phone room, you can plug these jacks into the patch panel(s) per the patch panel break-out diagrams in the *System Administration Guide Appendices* that is appropriate to your system.

## Connecting outside lines, inside lines, hold music and paging to the system

Connect your physical lines to the NexPath Telephony Server using one of the methods described above. Note that outside lines will be seized in reverse-line-number order (for example, for a system with six outside lines, the CO line plugged into outside line 6 will be seized first. The next line seized will be outside line 5, etc.).

If your company has a paging system, connect the paging output of the system to the line-level input of the paging amplifier. Outside line 1 is used as the system's paging output in the default system configuration.

If you have a two-card (NTS/16) or larger system, you can also connect a hold music source (such as a radio) to the system by using the hold music cable (PN3100) and connecting it to the system's hold music input<sup>1</sup>. You may want to adapt the headphone jack of your radio or receiver to the phono-plug input of this cable so that you can control the volume of the hold music (line-level outputs receivers are not controlled by the volume knob).

---

**Note** You can connect music on hold to the single card system, the NTS/8, but you must use **AdminTool™** and the LAN interface to change the designation of CO line 1 from a PA output to music on hold input. See "Editing the parameters associated with each line" on page 65 for more details.

---

**Note** The hold music cable contains internal amplitude-limiting diodes, and must be used to insure that the system meets all FCC requirements.

---

## *Apply AC power*

Use the AC line cord supplied with your system to connect your NexPath Telephony Server to an AC outlet capable of supplying either 6 Amps at 110V/60Hz (that is, 660 Watts) or 4 Amps at 230VAC/60Hz (i.e., 920 Watts) AC power. To minimize the risk of local lightening strikes or other electrical surges damaging your system, you may want to install an AC surge arrestor at the AC outlet.

- 
1. Outside line 4 is used as the hold music input line in the default system configuration.



Alternately, you may want to use an uninterruptible power supply (UPS) with the NexPath Telephony Server. Using a UPS gives you time to shut down the system gracefully in the event of power failure so that voice mail messages or other information recently recorded is properly saved to the system's hard disk. The shutdown command can also be triggered automatically using the correct signal cable connected to the UPS.

While any UPS capable of supplying at least 600 Watts can be used, NexPath recommends using an APC SmartUPS SU1000 or APC Back-UPS Pro EP1000.

The APC UPS should be connected to the NTS with **NexPath UPS Cable Part # 3290** (special order), if you want the NexPath Telephony Server to shutdown automatically, upon either power loss or low battery on the UPS.

**Note** **Do not connect the cable that came with the UPS.** The APC 940-0020C cables can cause the NexPath Telephony Server to prematurely shutdown as soon as it boots and interfere with the NTS Reset button operation.

If you would like to build your own UPS cable to connect an APC UPS to the NexPath Telephony Server, it can be constructed as shown below in Figure 2-4 (note that a 1.2 kilohm resistor is required from pin 7 to pin 1 on the NTS end).

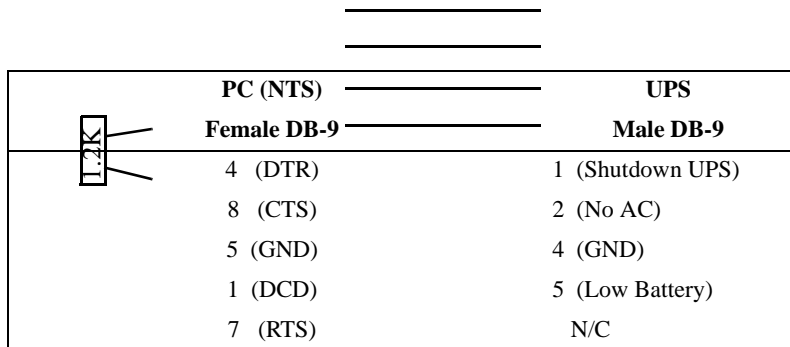


FIGURE 2-4: APC UPS to NTS Interface Cable

By connecting the correct interface cable between the Computer Interface Port of the APC UPS and the DB9 connector labelled "COM2" on the back of the mini-tower NexPath Telephony Server (COM1 on rack mounted systems), the UPS will signal the NexPath Telephony Server when AC power is lost and the battery

is low, and the NexPath Telephony Server will automatically perform a graceful shutdown, and then turn the UPS off. Some UPS units (e.g., the APC BackUPS 650), do not have a delayed shutdown, and will turn off immediately when signalled by software. These units must leave the Shutdown UPS signal (Figure 2-4) disconnected, or disable the UPS shutdown command using the Console program (see next paragraph). Otherwise the UPS will turn off before the software has completely synchronized the hard disk. Also, if the UPS is not turned off when the software shuts down, it will require operator intervention in the event of a loss of AC, to reboot the NTS. The best choice of UPS's are units similar to the SmartUPS which have delayed shutoff and can be turned off by the software.

---

**Note** If the COM ports on your PC chassis are unlabeled, COM2 is the COM port connector nearest the keyboard connector and farthest from the VGA connector (mini-tower systems only).

---

You can adjust the UPS shutdown parameters using the NexPath Console. Further details are provided in the Console screens. Information on connecting a VGA monitor and keyboard to access the console are provided in the section **Setting the network parameters using the NexPath Telephony Server Console** on page 26. UPS settings entered with the console take effect immediately and do not require a reboot of the NTS.

---

**Note** To meet UL requirements, a second ground connection must be connected to the case of the NexPath Telephony Server in the event the earthing connection in the AC cord is miswired or fails. To make this connection, attach one end of a 12 AWG or heavier wire to a source of earth ground and the other end to a screw (lug not provided) located on the rear of the case near the power supply fan.

---

After wiring the system to a source of AC power, boot up the system by turning on the UPS (if used) and pressing the AC power switch on the front panel of the NexPath Telephony Server. Allow about two minutes for the system to come up fully. You can tell when the system is finished initializing by listening for a dial tone on an inside line that is not otherwise bypassed to an outside line during the power-down state.

---

**Note** **Always press the RESET switch (the NTS Reset switch, or small red reset switch on some older models) on the front panel, and wait for disk activity to cease and the status light to turn red, before removing AC power!** This insures that no voice mail files or other data is lost. The RESET switch is monitored by software, so that pressing the RESET switch starts an orderly shut-down sequence, and the system will indicate when it is safe to remove AC power by turning the Status indicator (NTS Status on rack mounted systems) from green to red. If you do not remove AC power within few seconds after the Status indicator turns red, the system will automatically restart, and you

---

will have press RESET and wait for the NTS Status to return to red again. It is also a good practice to wait for disk activity to cease after the status light turns red, by observing the red HDD indicator.

---

## *Test the system and the wiring*

Test all inside lines by picking up each inside line telephone, checking for dial tone, then entering the Announce Line and Extension Numbers sequence **# 8** and verifying that each phone is connected as planned in your wiring worksheet.

To test the outside lines, pick up telephones on as many inside lines as you have outside lines and press **9** to seize outside lines on all of them.

Test your paging output (if connected) by picking up an inside line, dialing the default paging extension 111, and making an announcement.

To test your hold music input (if used):

- Have someone call in from outside your building.
- During the auto-attendant greeting, have them enter your extension number.
- While talking to them, put them on hold using the Put Call on Hold sequence **Flash 1**. You should hear a dial tone while they are on hold.
- After a few seconds, take them off of hold by entering the Retrieve Call from Hold sequence **\* 1** and verify that they heard hold music.

You can also test hold music by assigning an extension to the hold music line, as described in “Music on Hold Extensions” on page 50, and dialing this extension number from any telephone.

If the system fails any of these tests, check the chapter ***Troubleshooting*** for information. If that chapter either doesn’t address or doesn’t solve your problem, contact your dealer or NexPath telephone support for assistance.

---

**Note** Hold music only works if (1) the line that is put on hold has been configured for hold music (See ***Line administration*** on page 61 in the chapter ***Software Configuration***), and (2) the hold sequence above (or transfer to park orbit, or placed in queue in an ACD group) is properly entered. In particular, the HOLD

button on a regular telephone will not work, since the NexPath system has no knowledge that this button was pressed. Only the Hold Sequence above can be used, or similar sequence from network programs such as **NexDial™**, **NexDirector™**, or other network clients.

---

### *Change the system administrator and operator passwords (recommended)*

To protect your system from inadvertent changes or other meddling, we recommend you change the system administrator password and operator passwords as soon as possible. To change the system administrator password:

1. Pick up an inside line.
2. Enter the Change Password sequence **# 4**.
3. At the prompt, enter the factory-default for the system administrator's password (1000), then enter a new password that only you will know about.

Repeat the operation to change the operator's password (the factory default for the operator's password is 1099).

---

**Note** **Do not forget the new system administrator password!** The system administrator has the necessary privileges to reset other user's passwords if they get lost, but if the system administrator password gets forgotten, you will have to re-install the software or contact NexPath for help in restoring the original password file!

---

If you wish, you can record your new system administrator password here, to avoid forgetting it:

System Administrator Password: \_\_\_\_\_.

## *Re-record the auto-attendant greeting (recommended)*

The factory default configurations for both the day-mode and night-mode auto-attendants are as follows:

| <b>An incoming caller enters</b> | <b>The call is connected to</b>  |
|----------------------------------|--|
| 0                                | Operator (extension 300)   |
| 1                                | Extension 301  |
| 2                                | Extension 302  |
| 3                                | No action (waits for rest of extension number). Incorrect or incomplete entries take the caller back to the beginning of the auto-attendant greeting.              |
| 4                                | Extension 304  |
| 5                                | No action (waits for rest of a voice mail extension number). Incorrect or incomplete entries take the caller back to the beginning of the auto-attendant greeting. |
| 6                                | Extension 306 (dials the operator in NTS/8 systems)  |
| 7                                | Extension 307 (dials the operator in NTS/8 systems)  |
| 8                                | Extension 308 (dials the operator in NTS/8 systems)  |
| 9                                | Operator (extension 300)   |
| *                                | Operator (extension 300)   |
| #                                | Operator (extension 300)   |

You may want to use this information to re-record the auto-attendant greeting to be more meaningful for your company's configuration (for example, add something like, "Press 1 for Dave"). To change the greeting heard by people calling in from outside while the system is in Day Ringing mode, do the following:

**Note** The following will not work if you have activated a configuration using a web browser from the network. The connection between extension 130 and 131, and the day and night mode greetings is setup by the factory, and is deleted after the first network activation of a configuration. From then on, you must use the web browser and the **AdminTool**<sup>TM</sup> software. See the chapter [Auto-Attendant Programs](#) starting on page 99.

1. Press the Enter Password sequence **# 3**.
2. When prompted, enter the system administrator's password (the default is 1000).
3. When the system announces that your password is accepted, dial 130, which is the day auto-attendant's voice mailbox extension number.

4. After the system announces the number of messages, press **4** (Record Greeting) and then select the main greeting, then record a new greeting when prompted.
5. This approach will change the auto-attendant greeting to your own recording, but will only work if you have never activated a configuration from the network. See the note above.

Operation for the Night Ringing greeting is similar, except the Night Ringing voice mail extension is 131.

---

**Note** In case you missed the note above:

The greetings for voice mail extensions 130 and 131 are **only used** for customer situations **without** a **network connection**. Once a configuration is activated via the network, the connection between the voice mail greetings on these extensions, and the automated attendants greetings, is deleted.

---

Connecting the NexPath Telephony Server to the network is essential if you wish to access the most important features of the system. A network (also called LAN or TCP/IP) connection is required for email notification from voice mail, to customize the system configuration, and to use client software programs such as **NexDial™** and **NexDirector™**.

However, a network connection is not mandatory; the NexPath telephone system will function in its entirety (except for email notification) with the LAN cable disconnected. So it is possible, for example, to connect the network and configure the system using a web browser from a client PC, and then disconnect the network. This is a good way to run the system if you are very concerned about network security.

Connecting the network requires knowledge about IP addresses and other TCP/IP parameters. If you are not familiar with connecting devices to a standard TCP/IP LAN, then you should get assistance from a network administrator or from your Internet Service Provider (ISP).

## *Information required*

The following information is required to as a minimum connect your system to the LAN:

IP Address for the NexPath System: \_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_

Netmask for the NexPath System: \_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.

The netmask defaults to 255.255.255.0 if not entered or left blank. It is used to determine the range of IP addresses that can be contacted directly on the local subnet, and which IP addresses must be contacted through a router or gateway.

If you want to access your NexPath system from outside of the subnet that the NexPath is on, such as at a location from the Internet, or, if your NexPath system must contact an email host outside of your subnet (as set by the netmask above), then you need the following:

Gateway (also called a router): \_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.\_\_\_\_\_.

If you are going to use email notification, many mail servers require a valid domain name that is accepted by you email host. The domain name will default to `nexpath.com` if it is not entered, and your email host (SMTP host) may not accept this.

You can also program a DNS IP address, for a Domain Name Server, in addition to a domain name. This is only used when networks clients, such as **NexDial**, refer to the email host by name rather than by IP address.

If you do not know or understand the above parameters, then you should obtain the assistance of a network consultant or your Internet Service Provider. Many ISPs provide assistance to their customers in setting up various network devices.

You may also want to set the system name, which is only used locally on the system. It cannot contain spaces or special characters. You can set the local time zone, for automatic daylight savings time changes.



## *Connect the system to a network*

To physically connect your system to a network:

1. Connect the necessary physical wiring to the 10BaseT (RJ45) connector on NexPath Telephony Server's built-in LAN card. If you are not already using 10BaseT connections in your network, you may need an AUI-to-10BaseT or a BNC-to-10BaseT adapter to complete the connection. Many NexPath Server models have 10/100BaseT auto-sensing LAN connections. Be sure to use a standard network cable to connect to a hub, or a special *cross-over cable* if you are connecting the NexPath Telephony Server directly to another computer without a hub.

---

**Note** Do not use the BNC connector (if present) on the LAN card to connect the NexPath Telephony Server to your network. The NexPath Telephony Server software does not support this connector.

---

2. Set the network parameters as described in the next section.

## *Setting the IP address and other network parameters*

You can set the network parameters on the NexPath Telephony Server in one of three ways:

1. Using a DOS formatted floppy disk.
2. Using the NexPath Telephony Server console, which is accessed using a standard PC keyboard and VGA monitor connected to the NexPath Telephony Server.
3. Using **bootp**, a subset of the DHCP protocol. The **bootp** protocol must first be enabled using the console or a floppy disk. By default, it is disabled on the NexPath Telephony Server. You should only use **bootp** if you are a network expert and very familiar with network issues, since a static IP is best for the NexPath system. The IP address of the NexPath system must be known by all users of the network interface in order to communicate with the server. Dynamic IP assignment makes this much more difficult unless your DHCP settings are automatically propagated to DNS, since the network address will be different each time the NexPath Telephony Server is booted (without special setup on you DHCP server).

The network settings from the floppy/console and **bootp** are stored in separate files on the hard disk and used each time the system is booted. The following order is used to set the network parameters for each boot sequence. If a valid IP address is not obtained at one step, the next in the sequence is tried:

1. **bootp** broadcast, if **bootp** is enabled,
2. The last setting from the floppy or console (both change the same file),
3. The last setting when **bootp** was answered.

Most NexPath users will set the network parameters using either the floppy disk or the console. Only network experts should consider using **bootp**. Note that the local timezone can only be set from the floppy disk or the console, not from **bootp**.

If all of the above attempts to set the IP address fail, then the IP address defaults to 192.168.0.2 with a system name of *nexpath*.

### *Setting the network parameters using a floppy disk*

1. If your system is not already up and running, turn it on and wait about two minutes (i.e., until the software finishes initializing).
2. Insert a blank but pre-formatted, writable DOS-compatible floppy disk (must be a 2HD or 1.44MB floppy; other formats will not work) into the NexPath Telephony Server's floppy drive.
3. Press the RESET switch (or NTS Reset button, or small red reset switch on some older models) on the NexPath Telephony Server front panel.
4. The system will indicate that it is done copying the template file to the floppy by beeping 10 times. Remove the floppy disk when the system beeps.
5. Take the floppy to a DOS-compatible system and use a standard text editor such as DOS's EDIT.COM or Windows Notepad to edit the file SETUP.TXT on the floppy. This file will have instructions and keywords for setting the network parameters as described above. You can also set the local time zone using this floppy.
6. When you have finished editing the file and saved the results to the floppy, take the floppy back to the NexPath Telephony Server and insert it in the floppy drive.
7. Press the RESET switch (or NTS Reset button, or small red reset switch on some models) on the front panel again.
8. When the Status LED on the front panel begins to flash red and green, remove the floppy disk.

**Note** If the Status LED does not flash red and green as indicated in Step 8, and instead you get 10 beeps again, it is an indication that the Server did not properly read the floppy. Most of the time this is due to bad floppy disks. If this occurs, try another floppy.

---

9. Press the RESET switch (or NTS Reset button, or small red reset switch on some models) one more time, and wait for the system to re-boot, and the software to re-initialize (1-2 minutes).

**Note** If the NexPath Telephony Server has trouble with the information added to SETUP.TXT in step 5, it will create a problem report file on the floppy called LOG.TXT.

---

**Note** If you ever need the LAN hardware interface address (MAC address), it is written on the floppy in a file named ADDRESS.TXT. It is also available on the screen, if you connect a VGA monitor to the NexPath Telephony Server. You can also find the MAC address on the label on the back of the system.

---

## Setting the network parameters using the NexPath Telephony Server Console

To use the NTS console, you must connect a standard PC keyboard, and a VGA compatible monitor, to the NexPath Telephony Server. A console should appear, that has menu items that can be accessed using the arrow keys on the keyboard. More information on using this console is available under the Help menu item.

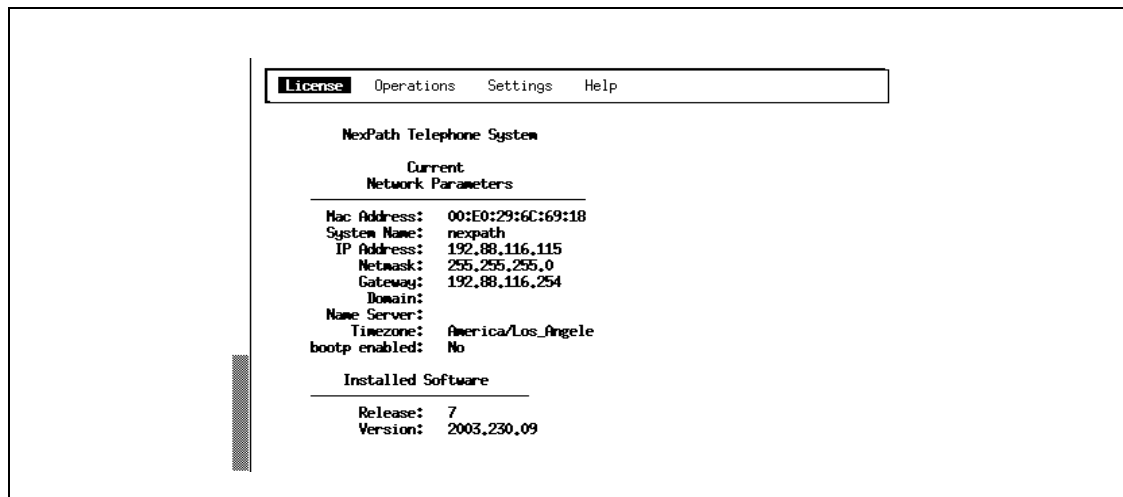


FIGURE 3-1: NexPath Telephony Server Console

Network parameters (including the local time zone) that are changed using the NexPath Telephony Server console do not take effect until the system is rebooted. You can reboot the system by pressing the Reset button, or by selecting Restart on the Operations menu on the console. Either method will immediately disconnect any calls in progress. Your users will lose dial tone for 1-2 minutes.

The NexPath Telephony Server console can also be used to set the local time zone. Follow the instructions on the console screen

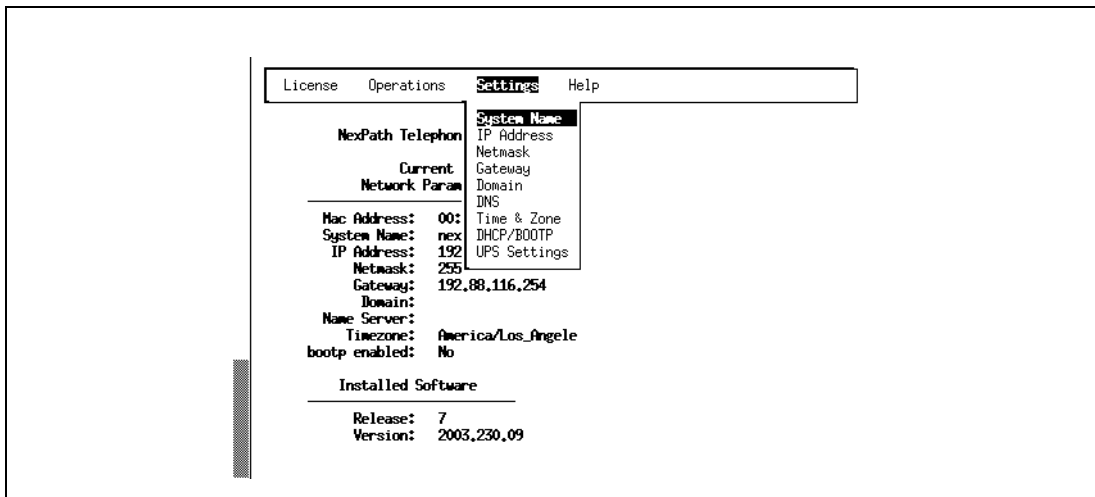


FIGURE 3-2: Setting network parameters and the time and timezone with the NTS console

### *Setting the network parameters using the BOOTP/DHCP protocol*

When **bootp** is enabled (it is disabled by default), the NexPath Telephony Server will issue a **bootp** broadcast during the first 30 seconds of boot initialization. If the broadcast is answered by a **bootp/dhcp** server, then the NexPath system will set its network parameters based on this information provided in this protocol. The following parameters can be set using **bootp**:

1. System name
2. System IP address
3. Router (gateway)
4. DNS Server
5. Subnet Mask

If the IP address is supplied by **bootp**, then *all* of the parameters are set by **bootp**, and these will override any console or floppy settings. The system will beep three times if the network IP address is set via the **bootp** protocol. Only network experts should consider using the **bootp** protocol. Note that **bootp** is by default disabled, and can only be enabled from the Console or by using the floppy disk (see “Setting the IP address and other network parameters” on page 23).

### *Testing your network connection*

Check with your network administrator to see if the “ping” command is available on your computer. If so, issue the following command from your computer:

```
ping <NexPath Telephony Server system IP address>
```

where *<NexPath Telephony Server system IP address>* is replaced above by the IP address that you assigned the NexPath Telephony Server in step 5 of “Setting the IP address and other network parameters” on page 23. You should get a response similar to:

```
<NexPath Telephony Server system IP address> is alive
```

Next, in a web browser, open the URL:

```
http://<NexPath Telephony Server system IP address>/
```

For example, if you gave your NexPath Telephony Server IP address of 192.168.0.2, you would open the URL:

```
http://192.168.0.2/
```

The NexPath NTS Server main page should appear. Check in the chapter ***Troubleshooting*** if you have problems “pinging” the NexPath Telephony Server or opening the URL.

---

**Note** You can also assign the NexPath Telephony Server a system name, to make it more convenient to type in the web browser. This name can only be used if you have programmed the `hosts` file or setup DNS with the host-IP Address correspondence. Otherwise, use the IP address of your system for all URLs, and be sure to include a trailing slash “/” for all URLs. See the next section.

---

## *Using your System Name rather than the IP Address*

In order to use a system name to refer to the NexPath Telephony Server, rather than the IP address, in programs such as the Netscape or Mozilla web browser and other network tools, you should put the IP address to system name correspondence in your DNS (Domain Naming System) Server. If you do not have a DNS Server, or do not know what this is, you can still use the system name by putting the information in the **hosts** file on each client computer on the network. The **hosts** file is a text file located at **C:/Windows/hosts** on Win95/Win98/WinME, and at **C:/Winnt/system32/drivers/etc/hosts** on WinNT4.0/Win2K. You can create this file using Notepad or Wordpad, but these programs may insist on putting a “.txt” at the end of the filename. You must rename it to just plain **hosts** (no extension) for it to work, using the Windows File Explorer. Also take care that you are **not** using the *hosts.sam* file, which is a sample file Microsoft puts on the system. The filename must be **hosts** (upper or lower case does not matter) with no file extension. You can copy the *hosts.sam* file to a file named **hosts**, and edit this to make things simpler. The contents of the file should be similar to the following:

```
127.0.0.1      localhost
192.168.0.2    nexpath
```

The columns are separated by spaces or tabs. The second line should be your IP address and your system name for the NexPath Telephony Server. The **hosts** file must be copied or created on each client computer on the LAN where you are using NexPath software.

---

**Note** When you assign the IP address to the NexPath system, using any of the methods on page 23, there is also a place to enter the system name. Actually, this name is only used locally on the NexPath system and can be anything you choose. The only time a name is used in TCP/IP protocols is when a DNS server is contacted to convert a name to an IP address. Otherwise, only numbers (IP addresses) are used in TCP/IP communications. NexPath recommends that you use the same name on the NexPath Telephony Server, the **hosts** file, and DNS (if used), to avoid confusion, but there is no requirement that all of these names have to agree.

---

After you create the **hosts** file, it is not necessary to re-boot Windows to get programs to use it, but you must exit and re-start any program that is already running. For example, if Netscape was running when you changed or created the **hosts** file, then you must exit Netscape and re-start it in order for it to use the new information in the **hosts** file

According to the Microsoft manual, Windows may not look at the **hosts** file unless DNS is enabled. You can enable DNS by putting in a Domain name and Host name in the Windows networking TCP/IP setup page under the Control Panel -> Networking folder. It is not necessary to put in a DNS Service Search Order IP address, unless you have a DNS Server.

All NexPath programs should work properly with the IP address in the location where the host name is programmed, but certain web browser URLs will require a trailing slash “/” if the system name is an IP address rather than a system name.



---

Though the NexPath Telephony Server comes pre-configured for use right out of the box, you may find that you want to make changes to the configuration so that the system better meets your needs. Configuration changes are accomplished via a web browser from a LAN connected PC. Access to the NexPath Telephony Server from a console CRT and keyboard directly connected to the system is for setting network parameters only.

---

**Note** Except for changing greetings and passwords, modifying the bulk of the telephone system's configuration requires that you connect the NexPath Telephony Server to a desktop computer using a TCP/IP network connection. You will also need a Netscape/Mozilla 4 or later, or Microsoft Internet Explorer 4 or later, web browser. See the chapter *Network Installation* starting on page 21 for information on how to connect the NexPath Telephony Server to a network and test the connection.

---

### *Basic procedure for performing system administration*

We recommend you perform the following steps when creating a custom configuration for your system:

1. **PLAN YOUR SYSTEM!** It is a lot easier to make changes on paper than it is to perform multiple iterations in software. Decide ahead of time how many phones you want your system to support, what extension numbers you want to assign to whom, and who will and who won't have a voice mailbox.

**Note** You will find it extremely helpful later if you create a complete list of all users and their extension numbers you plan on having in the system, along with what line and/or voice mail box each is associated with. Also, make sure that you are assigning inside lines such that, when AC power to the NexPath Telephony Server is turned off, the power-fail bypass connections made between outside lines and inside lines will leave the desired group of phones connected to the outside world.

---

2. Create an editable configuration file (see “Creating an editable configuration” on page 36).
3. Make any changes or additions to the access authorization groups (see “Access Authorization groups” on page 79), then perform user administration (see “Users, user names, and user permissions” on page 39). Remember that at least one user should have system administration privileges, and that one user may own more than one extension and/or voice mailbox.
4. If you are going to use ring groups, create or modify the ring groups (see “Ring groups (Pickup Groups)” on page 70). This step is a bit tricky, because you have to know what lines will be going to which desk before you can create the ring groups, plus you have take into account the NexPath Telephony Server’s power-off bypass connections between outside lines and inside lines when deciding what inside line to assign to which extension.
5. Make any changes or additions to the Extensions as required (See “Extension numbers” on page 43). In particular, you will want to change the name of the extensions so that the Dial By Name auto-attendants will function for your company. See ***Dial By Name*** on page 112 in the chapter ***Auto-Attendant Programs*** for more details.
6. Make any changes or additions to the voice mail boxes (see “Voice mail” on page 52). You may want to change the maximum message size or total mailbox size of various voice mail boxes.
7. Perform line administration (see “Line administration” on page 61). In particular, make sure the central office line type (CO line type) is correctly set for your system.
8. Create your auto-attendant(s) and associate them with extensions in your configuration (see “Associating an auto-attendant program with a configuration file” on page 88).
9. Enter any final details of your configuration (see “System limits” on page 73 and “Seize Order and Seize Groups” on page 77).
10. Save and activate your configuration (see “Activating a particular configuration file” on page 90). Configuration file changes and auto-attendant program changes do not take effect until the configuration has been activated.

## *Starting AdminTool, the system administration program*

Configuration and administration of the NexPath Telephony Server is done using a Web browser to access the **AdminTool™** program.

To start **AdminTool™**:

1. Start you web browser on a computer which is connected to the NexPath Telephony Server over the network.
2. Select “Open URL” in your Web browser.

---

**Note** The NexPath Telephony Server is an embedded system, and is administered **only** from a client PC with a network connection. The Console screen and keyboard are only used for setting network parameters and shutting the system down.

---

3. Specify the location to open as **http://<system name>/Admin/**. Note the capital “A” in Admin. The trailing “/” is required if you are using an IP address instead of a system name. The following screen should appear within your browser:

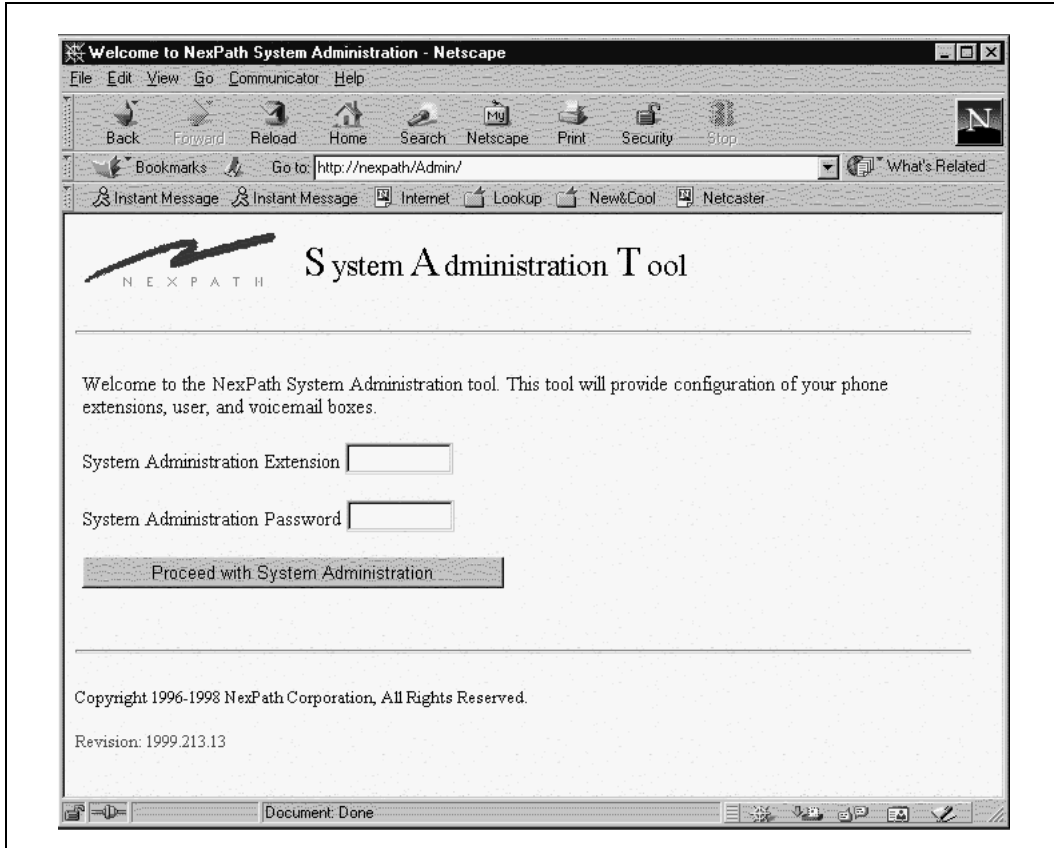


FIGURE 4-1: The AdminTool™ log-in page

4. Enter an extension number and a password which has been assigned system administration permissions. Any valid system extension can be used (such as 301), but we suggest you use the extension number of the telephone near your computer. The extension you login with will be the one that the software expects to be used for recording custom messages. (The factory default password is 1000, though we suggest you change the default password as soon as possible to avoid unauthorized access to your system).
5. After entering an extension and password with system administration permissions in the **AdminTool** login screen, the following screen will appear:

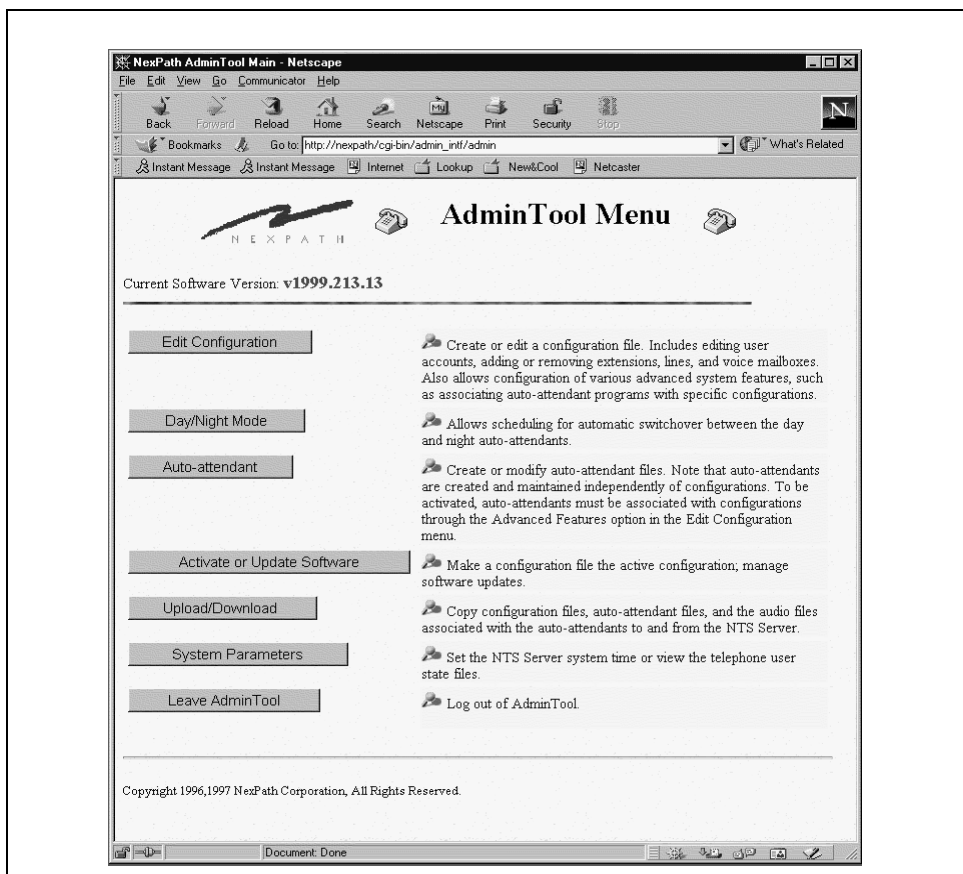


FIGURE 4-2: AdminTool menu

## *Creating an editable configuration*

The NexPath Telephony Server uses configuration files to specify such things as what extension numbers are valid in your system, which phone or phones will ring when a specific extension is dialed, who has a voice mailbox, who does not, and all other items (with the exception of the auto-attendant programs) that define your NexPath Telephony Server’s “personality<sup>1</sup>.”

You can create and maintain multiple configuration files, and then switch between them by selecting and activating any one of them. One important note: when you select and activate a specific configuration file; it is copied to a special file named “config”. This is intended to help avoid confusion as to which file is active. This special configuration file can be viewed using the same tools available for creating new configurations, but it will not be editable.

When you first begin system administration, the only file listed in Configuration File Administration page is the file “config”, which in turn holds the default configuration. You can create a new configuration from scratch using the **Create new configuration** button, or you can use the default configuration as a starting point. NexPath recommends that you make copies of the default configuration, and use this as a starting point, until you become familiar with the system. The Create new configuration option makes a rather empty configuration file, with no extensions filled in, and is for situations where you intend to completely change the system number plan.

To use the default configuration as a starting point, though, you must first copy “config” to a new file for editing. To create an editable version of the “config” file:

1. From the **AdminTool™** Menu, click the **Edit Configuration** button.
2. Click on the file “config”, then click on **Edit selected file**.
3. Click on **Save** in the Edit Configuration menu.
4. Add a new file name in the **Save file as** box (for example, “myconfig”), then click on **Save, return to the AdminTool™ menu** to return to the AdminTool menu, or on **Save, return to the Edit Configuration menu** to edit your new file.

---

1. The association of auto-attendant programs with extensions is done in the configuration files. The auto-attendant programs themselves are files that are defined independently of configuration files, as explained in “Associating an auto-attendant program with a configuration file” on page 88.

**Note** We recommend you copy the default “config” file to a file called “default” before creating any other editable files, and then create a second, working copy with a different name for your edits. This way, you can get back to the default configuration at some future time if necessary. Standard configuration files are also on the CDROM that came with your system, under the directory *Release 7/Support*, which can be uploaded to the server using the procedures described in “Uploading and downloading files from the NTS server” on page 91.

---

Changes can be made to your new, editable file and then the new file can be scheduled to become the running configuration using the **Activate or Update Software** procedure. See “Activating a particular configuration file” on page 90 for details. Editing a configuration file has no effect on the running system until this file is activated using the **Activate or Update Software** procedure.

**Note** If no auto-attendants are defined, activating your first configuration as described above will cause the NexPath Telephony Server to perform all the necessary steps to copy the default day and night auto-attendant programs to the files *Day\_Program.au* and *Night\_Program.au*, respectively. These files will be associated with extensions 120 and 121, respectively, in the configuration you are activating.

Also, the voice prompts recorded in the voice mailboxes at extensions 130 and 131 will be copied to the audio files *GeneralGreeting.au* and *GeneralNightGreeting.au*, and these audio files will be used as the greeting for the auto-attendant files created. These prompts can be re-recorded and customized using the **Auto-Attendant -> Audio Processing** page, as described on [Recording Custom Greetings and Prompts](#) on page 130 in the chapter [Auto-Attendant Programs](#).

Note that these auto-attendant programs are not really identical to the default auto-attendant programs shipped with the system, as you will no longer be able to re-record the auto-attendant greetings by recording new greetings at extensions 130 and 131. Instead, all further administration of these auto-attendants will have to be done through **AdminTool™**, and changes to the greetings must be done using a telephone and the **Auto-Attendant -> Audio Processing** page as described above.

---

Upon selecting a configuration file to edit, the following screen appears:

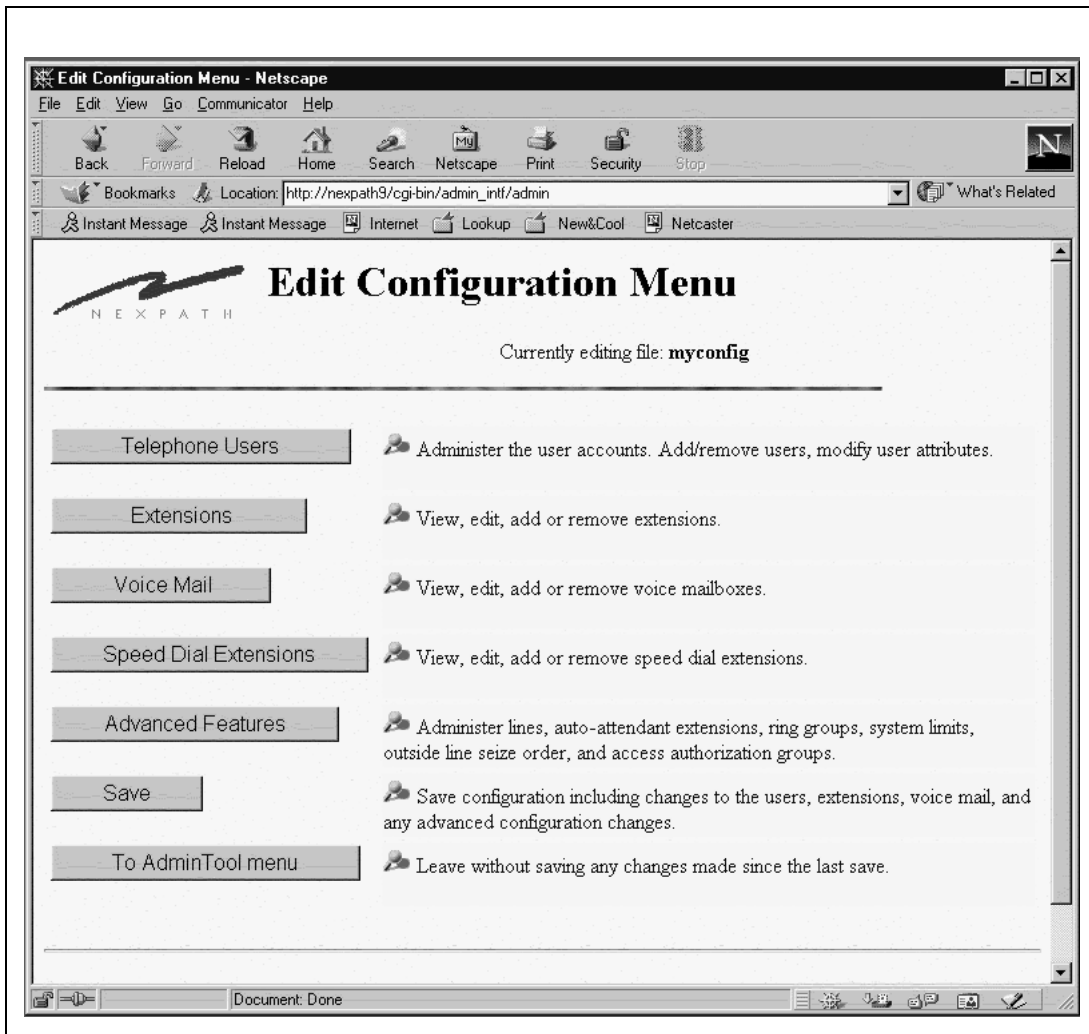


FIGURE 4-3: Edit Configuration in AdminTool™



## *Users, user names, and user permissions*

The NexPath Telephony Server cannot tell, when someone picks up a telephone on a desk, whether that someone is the CEO of the company or the night janitor. To help determine who is using the system, the NexPath Telephony Server uses the concepts of individual users, where each user has a unique password and can be assigned an appropriate set of permissions.

Users are identified by their password. The password is used for logging into LAN based programs such as **AdminTool™**, for accessing voice mail, and for providing permission to make changes to extensions such as forwarding calls, or permissions to make long distance calls.

An inside line in the system has a set of default privileges, and the system uses these default privileges when that phone goes off-hook and a call is attempted. A user can gain access to his or her own privileges by entering the password sequence **# 3** and then the password, as described in the *Users Manual*, to go under “password protection”. From then on, until a hang-up, the line has the privileges of the user whose password was entered.

Specifically, each user account within the NexPath Telephony Server is assigned the following parameters:

- **An initial password.** The value of the initial password is set by the system, and cannot be changed from **AdminTool™**. Instead, users should be instructed to change their passwords as soon as possible so that no one else can, for example, access their voice mail.
- **Access authorization.** where users can be allowed to make any long distance call, no long distance calls, or only long distance calls to within the area codes defined in a specific access group. Access groups are defined using the operations described on “Creating and modifying the access authorization groups” on page 81.

Access authorization permissions for individual users are particularly useful in the following circumstance: if you configure your system so that, say, the inside line connected to your lobby phone has all long-distance calls blocked (as described in “Line administration” on page 61), then a user with wide-ranging access authorization can override the phone’s block on long distance calls by picking up the phone, then identifying himself to the system by entering **# 3** and his password, then dialing **9** to seize an outside line and then dialing his number.

- **Enable day/night ringing.** Users who have this permission can switch the system between the Day mode and Night mode. Both lines and extensions (covered later in this chapter) have parameters, such as which phone to ring when an extension is dialed, that can be take on different values depending on whether the system is in the Day mode or the Night mode.

- Admin privileges. Users with admin privileges can perform phone system administration. Only users with admin privileges can access **AdminTool™**. Additionally, users with admin privileges can access all voice mailboxes, set and cancel call forwarding for any extension, and have access to all other user's passwords.
- Barge-in/ Listen-in/Record. Users with this permission can barge into, or listen into, another party's calls by entering the barge-in sequence **# 2** and an extension number, or the listen in sequence **# 5**, from the telephone keypad. This does not affect the ability of a user to listen-in or barge-in to his or her own voice mail; it only applies to two party calls or mailboxes not owned by the user. Users with the Barge-in/ Listen-in/Record permission can also record a call they are connected to, using the Record Call sequence, **Flash 2**. **WARNING:** *Recording or Listening-in to a conversation without the consent of one or both parties may be a violation of local, state, and federal privacy laws. It is the responsibility of the user of the NexPath Telephony Server, when using features of the system, to assure that he or she is in compliance with all applicable laws.*
- External features. This permission field is not currently in use, but is reserved for future product enhancements.

---

**Note** While users must be defined in the system before they can be assigned an extension number or voice mailbox, they do not **have** to be assigned an extension number or voice mailbox. For example, many people configure their systems with only one user account (and therefore only one password) having admin privileges, but do not then assign this user account to any extension numbers.

---

The **Telephone Users** screen is accessed from **Edit Configuration -> Telephone Users** and appears as follows:

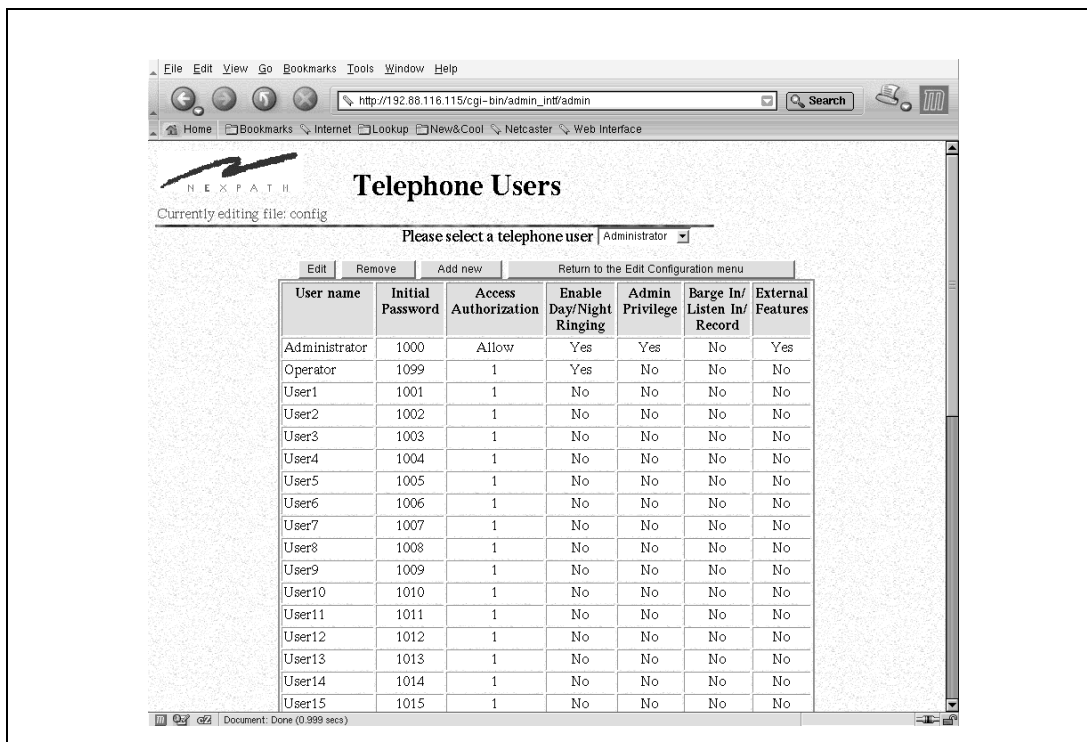


FIGURE 4-4: Telephone System Users Screen

## Viewing, adding, editing, and removing user account information

To view, add, edit, or remove user accounts:

1. From the AdminTool menu, click on **Edit Configuration**.
2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.

3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Telephone Users**. A list of all users defined for the configuration selected is shown.
5. Click **Add new** to add a new user, or select an existing user account from the pull-down list of users and click **Edit** to edit the user's permissions or **Remove** to remove the user.

---

**Note** If you are using the default configuration and want to change the user names to be more descriptive, you can determine which user names are currently being used for the names you want to change by comparing the passwords for each user as shown in the wiring worksheet against the **initial password** column of the Telephone Users page.

---

---

**Note** Before a user can be removed, all extensions associated with the user must be removed. When you click on **Remove**, a list of the extensions still associated with this user will be displayed. See "Voice mail" on page 52 for information on removing or re-assigning these extension numbers.

---

6. If creating or editing a user's account, review/change the user's permissions in the Modify Telephone Users and/or Attributes page that appears, then click **Keep changes and return**.
7. Continue adding, editing, or removing user accounts until you are satisfied with the information displayed in the Telephone Users page.
8. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in "Activating a particular configuration file" on page 90.

---

**Note** After removing a user, all voice mail associated with the user will be removed when the new configuration is activated.

---

## Extension numbers

The NexPath Telephony Server allows you to assign extension numbers to:

- **Inside lines**, where dialing the extension number associated with a particular inside line will ring the phone (or FAX or modem) at that inside line.
- **Outside lines**, where dialing the extension number of an outside line will seize that specific outside line.
- **Paging (public address) lines**. One line per CBTI card can be configured to support public address paging. By dialing the extension number of the paging line, you will be connected to the PA system. An external amplifier is required.
- **Voice mailboxes**. Users can get into their voice mailboxes by dialing their voice mailbox extension number, pressing **#** during their greeting, then entering their password during their greeting.
- **Auto-attendants**. To enable an auto-attendant program file, the NexPath Telephony Server requires that you associate the auto-attendant program with an extension number. The extension number of the auto-attendant can be dialed from any line to activate the auto-attendant program. Many different auto-attendant extensions can be created and associated with various auto-attendant programs. The default configuration creates extensions 120 and 121 as the default Day and Night auto-attendants.
- **Speed Dial Extensions**. Speed dial extensions translate a three digit number to a seven or more digit number for off-site dialing. They can be used to simplify off-site calls, or as a means of dialing off-site numbers from an auto-attendant.
- **Park orbits**. Park orbits are a kind of public hold, where a call can be parked and picked up in another location.
- **Ring groups**. Extensions are associated with ring groups for either the Day mode, Night mode, or both, and will ring all of the phones in the ring group when this extension is dialed.
- **ACD (Automated Call Distribution) Groups**. ACD groups are accessed through auto-attendants. See the chapter [\*Auto-Attendant Programs\*](#) starting on page 99.

---

**Note** The **AdminTool™->Edit Configuration->Extensions** page described in this section is used only to administer the extension numbers associated with inside lines, outside lines, and public address (paging) outputs. Administering the extension numbers associated with voice mail boxes is described in “View, edit, add, or remove voice mailboxes” on page 55, while the assignment of extension numbers to auto-attendant programs is described in “Associating an auto-attendant program with a configuration file” on page 88. Administering speed dial extensions is described in “Speed Dial Extensions” on page 56. Park orbit extensions are defined as a range of extension numbers; the default is 100 - 110. The range can be changed in the section “System limits” on page 73

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The **Extensions** screen appears as follows:

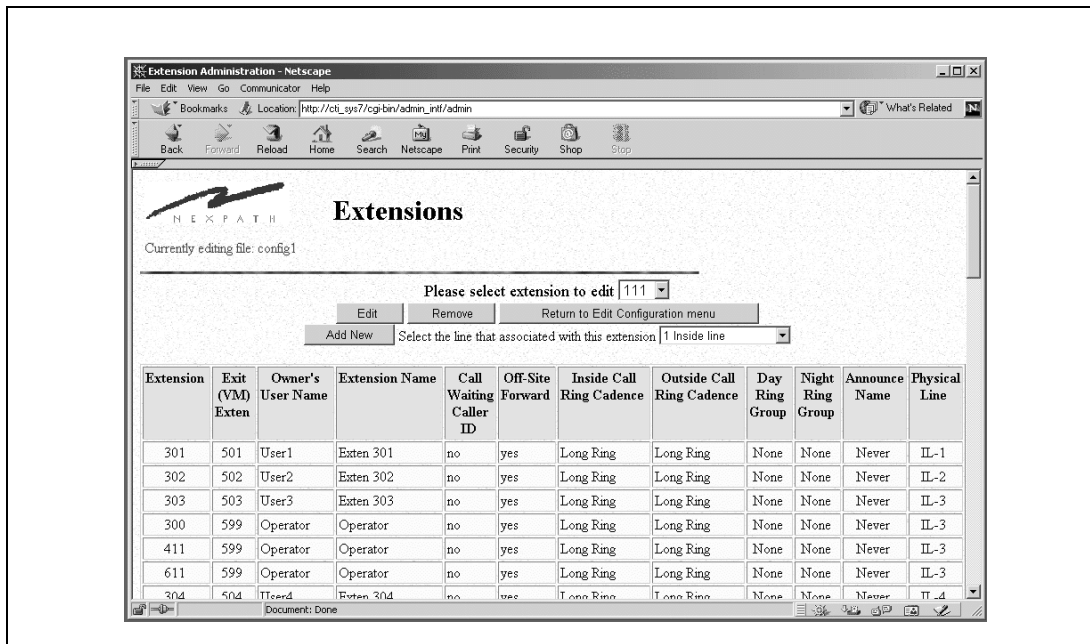


FIGURE 4-5: Extensions Screen

### View, add, edit, or remove an extension number associated with an inside, outside, or public address (paging) line

To view, add, edit, or remove an extension:

1. From the AdminTool menu, click on **Edit Configuration**.
2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.
3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Extensions**. A list of all extensions currently defined for the configuration selected is shown.

5. Select the extension you want to edit, then click **Edit** to edit the extension's parameters, or **Remove** to remove it. Alternately, to add a new extension, select the line you want associated with a new extension, then click **Add new**.
6. If editing or creating an extension, review/change the parameters for the extension, then click **Keep changes and return**.
7. Continue adding, editing, or removing extensions until you are satisfied with the information displayed in the Extensions page.
8. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in "Activating a particular configuration file" on page 90.

## *Inside Line Extensions*

Parameters for inside line extensions are administered using the **Edit Configuration -> Extensions** web page from **AdminTool™**. This page displays a summary table of the inside and outside line extensions currently defined in this configuration file. An individual extension can be edited by selecting the extension number in the selector box beside the legend "Please select extension to edit", then clicking on the **Edit** button. New extensions can be added by selecting the physical line number in the selector box along side this legend, and clicking the button **Add New**.

## **Creating more than one extension per physical inside line**

When configuring your system, an important feature of the NexPath Telephony Server to remember is that you can assign more than one extension to a given physical line. This allows you to have two people share one phone, or assign one person more than one extension. You can then control how the phone rings depending on which extension is dialed by assigning different ring cadences to the different extensions.

An example of when you may want to assign an individual more than one extension is if you want the operator's phone to ring one way if a call is coming from outside, and another way if the call is from an inside line (outside callers could be connected to extension 300, say, while inside callers get connected to 303).

## Announce Name

One of the choices for inside extensions is whether to require the caller to announce (record) their name before the call is directed to this extension. With this option enabled, when the call is answered at the extension, the system announces that a call is available from..., and then it plays the recording of the person saying their name. The person answering the call can press **1** to accept the call or **\*** to cancel. During this period of time, the caller hears a ringing sound.

The Announce Name option can be set to always require a name, or only in the case that the caller ID is private or unavailable.

## Inside and Outside Call Ring Cadence

You can select the ringing pattern of a call to be different depending on whether it is a call from an outside line, or from an inside line. Six different ringing patterns, or *cadences*, are available.

## Call Waiting/ Caller ID

Without this option selected, call waiting produces two short beeps when a caller is trying an extension that is in use, and call waiting is enabled for that extension. If Call Waiting/ Caller ID is enabled in the configuration for this extension, then instead of two short beeps, the caller ID of the caller trying the extension is provided. Telephones that are enabled for Call Waiting/ Caller ID (sometimes called Visual Caller ID), will show the caller ID of the caller trying the extension. This feature also causes about a one second block of the conversation.

A telephone that is not Call Waiting/Caller ID compatible will not block the data transmission sounds, and will produce an objectionable modem-like noise in the receiving party's ear. Do not use this option unless you have a compatible telephone. Compatible telephones should silence this sound.

For desktop computer applications like **NexDial**, the caller ID is always provided. This option does not affect desktop applications; it only affects the telephone.



For editing inside lines, the following page is displayed:

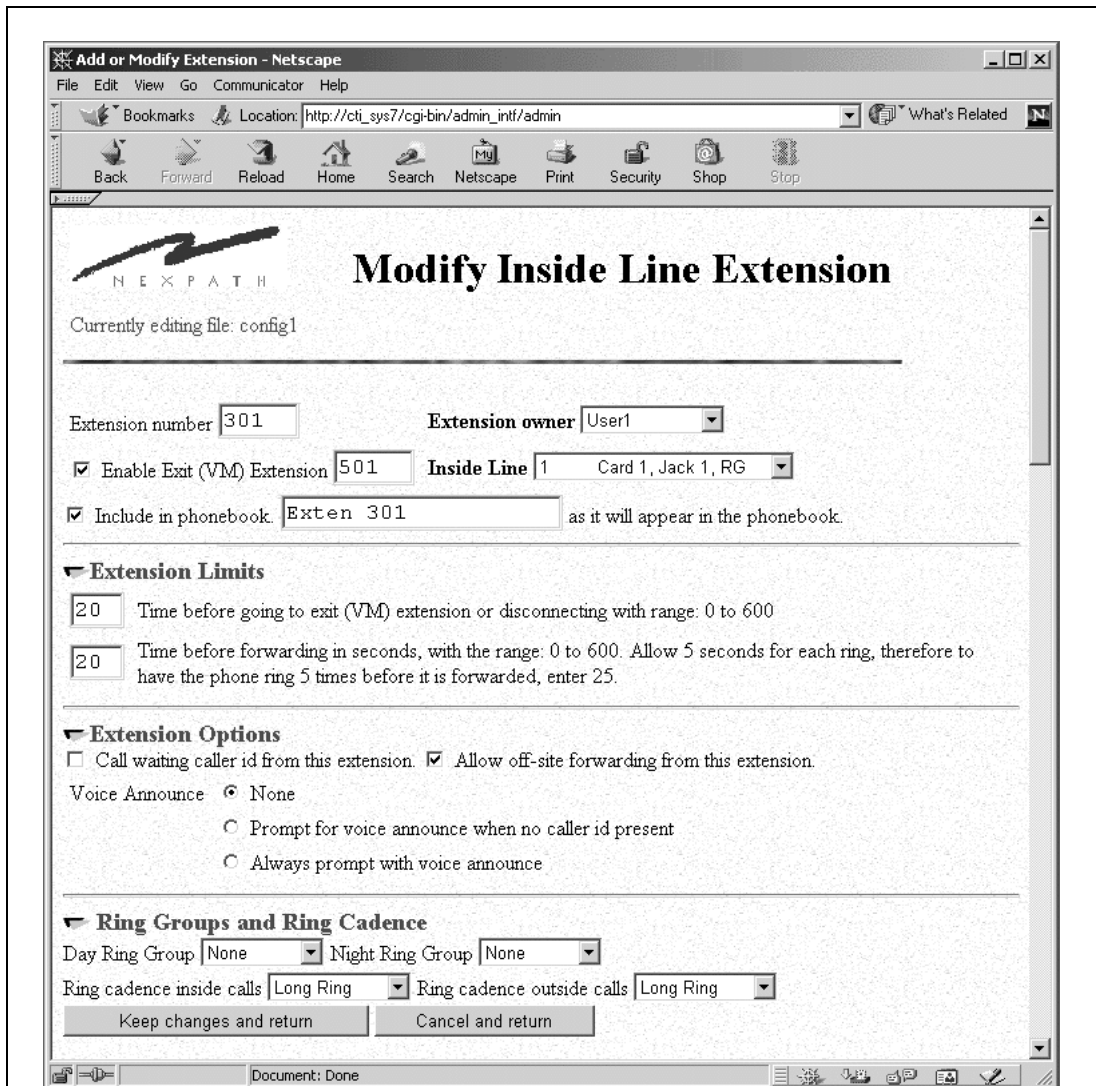


FIGURE 4-6: Editing Inside Line Extension Settings

The parameters that can be defined for extensions assigned to inside lines

The following parameters are associated with extension assigned to inside lines:

- The extension number.
- The extension's owner. This information is used when someone tries to perform the following operations:
  - enable or disable call-forwarding for the extension
  - enable or disable call-waiting for the extension
  - put an extension in the "Accepting Calls" or "Do Not Disturb" mode
  - barge into a call in progress at the extension

In each of these instances, the system will ask for the user's password. The user must then either enter the password of the extension's owner or of an account with admin privileges.

- The (optional) extension number of the voice mailbox or other exit extension associated with the extension. Although most commonly a voice mail box extension, the exit extension can also be an auto-attendant or any other system extension. The system will transfer to the exit extension in the condition of ring-no-answer or busy, after the forwarding extension has been attempted, if forwarding is enabled
- The name of the extension as it appears in the phonebook, used with other LAN based programs such as **NexDial**, **NexDirector**, and **TelOper**. This is also the name that is used for **Dial by Name** in the auto-attendant. See *Dial By Name* on page 112 in the chapter *Auto-Attendant Programs*. If the check box is not checked, the extension will not appear in the system phonebook and will not be viewable from LAN based programs.
- Which inside line the extension is to associated with.
- The time delay before calls to the extension roll over to voice mail or are disconnected.
- The time delay before calls to the extension are forwarded.
- Whether forwarding of this extension to off site (7 or more digit) numbers is allowed
- Whether Call Waiting/ Caller ID (Visual Call Waiting) is enabled on this extension
- Whether calls to this extension should first have the caller announce their name. You can choose to always do this, or only in the event the caller ID is private or not available.
- Optional ring group number, instead of the inside line associated with this extension, to be used when the extension is dialed while the system is in either the Day mode or Night mode. This will cause a group of lines to ring when the extension is dialed. Lines are grouped into numbered ring group at **Advanced Features -> Ring Groups**, as described in "Ring groups (Pickup Groups)" on page 70.
- The ring cadence to be associated with calls to the extension if it is a call from an outside line.

- The ring cadence to be associated with calls to the extension if it is a call from an inside line.

## *Outside Line Extensions*

Outside lines are the lines coming in from the telephone company. These are at various times called central office or CO lines, trunk lines, or telco lines. All of these terms are interchangeable, and simply refer to the line that the telephone company brings to your office. With the NexPath Telephony Server, you can assign extension numbers to outside lines, much like you do for inside lines. In the standard configuration shipped with the system, outside line extension numbers are in the 200 range; 201, 202, etc.

Normally, to seize an outside line from any NexPath inside extension, a user picks up a phone and enters **9**. This will get the user the next available outside line in the seize order assigned to that line (see “Seize Order and Seize Groups” on page 77). By assigning an extension number to each outside line, though, specific outside lines can be seized simply by dialing their extension numbers. Also, using LAN based applications such as **NexDial** or **TelOper**, one can type in the outside line extension number, a comma, and then the number to be dialed, to cause an outside call to be placed on a particular CO line.

An extension number must be assigned to an outside line, and the outside line included in the system phone-book, in order for the line to appear in the **NexDirector** display.

## **Public Address Extensions**

One outside line per card can be configured as a public address (PA) or paging output line. See “Line administration” on page 61 for details on setting the outside line type. By assigning an extension number to the PA output, a user can dial this extension number and be connected to the PA amplifier to make an announcement. An external amplifier is required.

By putting the PA line in a ring group (the default configuration is ring group 1), and assigning an extension to this ring group, calls to this extension generate a “ringing” sound over the PA amplifier. See “Ring groups (Pickup Groups)” on page 70 for further details. The call can be answered by entering the pickup group sequence, **\*01**, for example, to pickup ring group 1.

Also, a PA line can play hold music, interrupted only by PA announcements or the ringing sound of calls to the PA ring group. See “Line administration” on page 61 for details on enabling hold music on a line.

## Music on Hold Extensions

One outside line per system can be configured as a music on hold (MOH) input. By connecting a music source to this line as described in “Connecting outside lines, inside lines, hold music and paging to the system” on page 14, callers will hear hold music (if enabled) when they are put on hold, placed in a park orbit, or waiting in an ACD queue.

An extension can optionally be assigned to the hold music line. If you dial this extension from a telephone, you will be connected to the hold music source. This can be useful if you are testing hold music, or just want to listen to music while working.

The following is the page displayed when you are editing an outside line extension number:

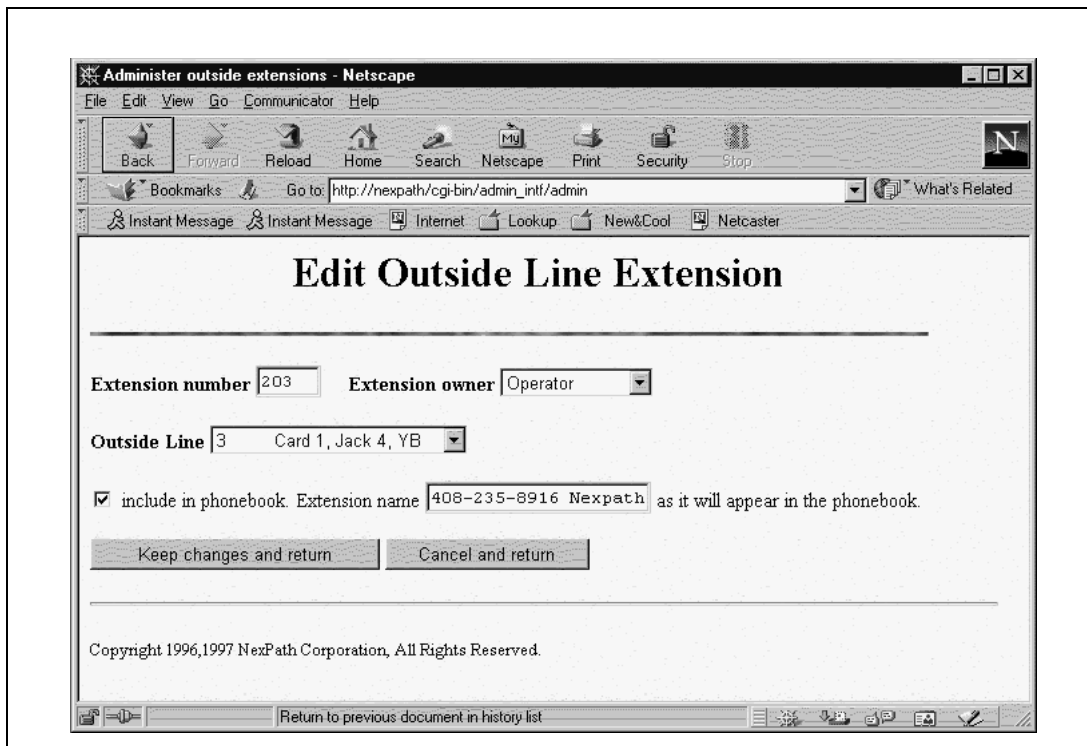


FIGURE 4-7: Editing Outside Line Extension Settings

### The parameters that can be defined for extensions assigned to outside lines

The parameters that can be edited for extensions associated with outside lines (including the paging output and hold music input lines) are:

- The extension number to be associated with the extension.
- The owner

- Which outside line the extension is to associated with.
- The name of the extension as it appears in the phonebook associated with LAN based programs such as **NexDial**, **NexDirector**, and **TelOper**. If the check box is not checked, the extension will not appear in the system phonebook and will not be viewable from LAN based programs.

## *Voice mail*

Each voice mailbox is associated with a specific user, and is assigned a unique extension number. This allows users to dial their mailboxes directly, and allows access to each mailbox to be password-controlled. Assigning each mailbox its own extension number also allows you to configure the auto-attendant to send calls directly to voice mail extensions without first ringing a phone.

The NexPath Telephony Server allows you to assign more than one mailbox to a given user, just as you can assign more than one extension to a given user. This is useful if the user is acting as both, say, the operator and the receiving department. You could set up two extensions and two voice mailboxes for the individual, and associate one voice mailbox with one extension, the other voice mailbox with the other extension. As mentioned in “Inside Line Extensions” on page 45, you can assign two different ring cadences for the two extensions, so the individual can tell which “hat” to wear when answering the phone. If the individual misses a call, he or she can access either voice mailbox with the same password by entering one or the other voice mailbox extension number.

The Voice Mail screen appears as follows:

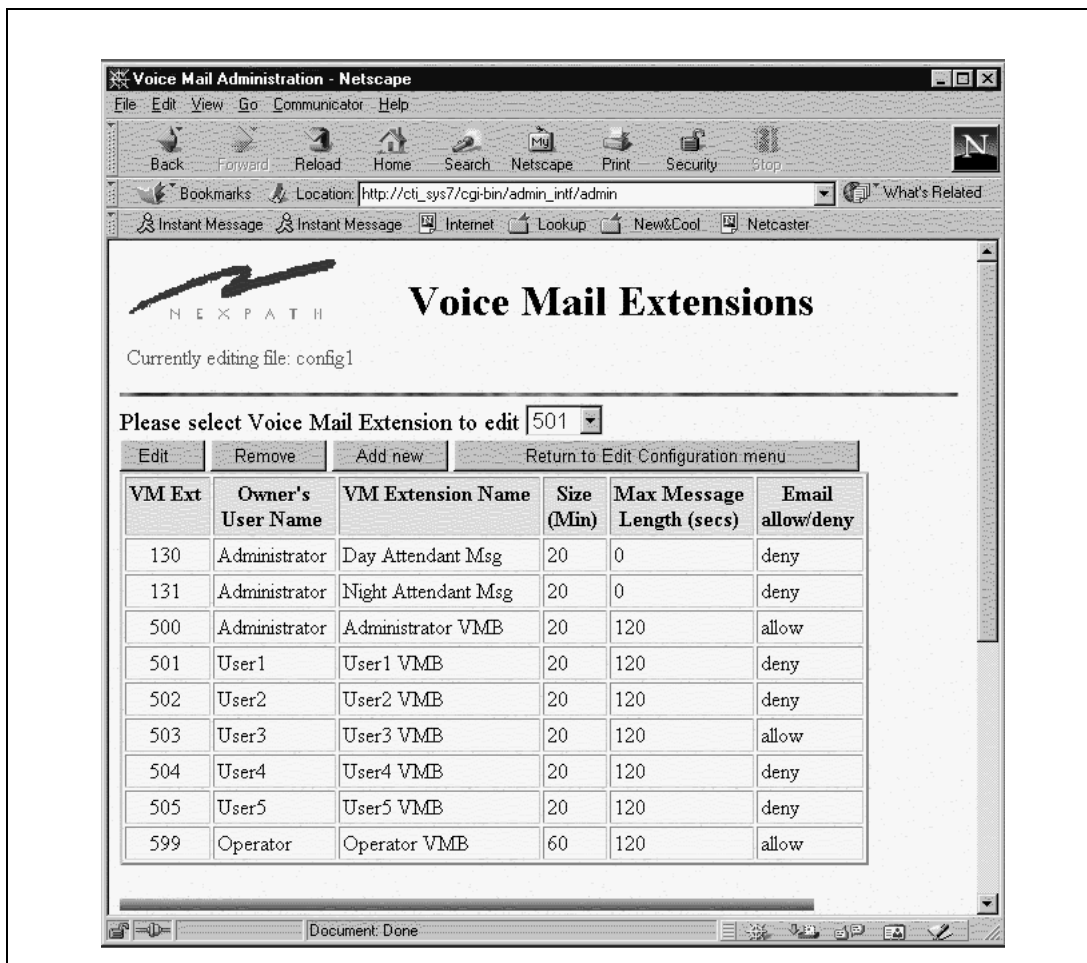


FIGURE 4-8: Voice Mail Box Extension Administration

When editing the parameters for a voice mailbox, you can set:

- The extension number to be used to access the voice mailbox.

- Which user owns the voice mailbox.
- The name of the mailbox as it appears in the phonebook in **NexDial** or **TelOper**. This is the name that a user sees when he or she copies a voice mail message from their mailbox to someone else's mailbox using the **Voicemail** button in **NexDial** or **TelOper**.
- The maximum length (in seconds) of any one message that can be left in the mailbox.
- The maximum size (in minutes) of the entire mailbox.
- If this mailbox permits email to be sent when a new message arrives. Email is configured for each user using the LAN programs **NexDial** or **TelOper**, but the setup is only permitted if the mailbox is set to "allow".

Various types of voice mail box extensions may be programmed. Some examples are:

- Personal-** Associated with an extension (See "Inside Line Extensions" on page 45 where a voice mail box may be programmed as the exit extension for a ring no answer or busy condition on an extension.).
- Announce Only-** Announce only mail boxes are created by setting the Maximum Message Length to zero seconds, and the Voice Mail Box size to the length of the announcement (in minutes). To record the announce only greeting, dial the voice mail box from any telephone, and change the greeting as described in *To record your standard or alternate greeting* on page 57 in the chapter *Voice Mail* of the *Users Guide* manual.
- General Delivery-** This type of mailbox is used for general messages not directed at a specific person. More than one person may need to access this box. Usually, the size of this mailbox is bigger than for the personal phone mailbox. The recommended size setting is 30 minutes. In order to allow more than one person to access this mailbox while keeping the integrity of the personal voice mailboxes, it is suggested that another user is created, such as "receptionist", who owns this voice mail extension. The password for this mailbox can be made available to all persons who need to access the messages.



The Voice Mail Box Edit screen appears as follows:

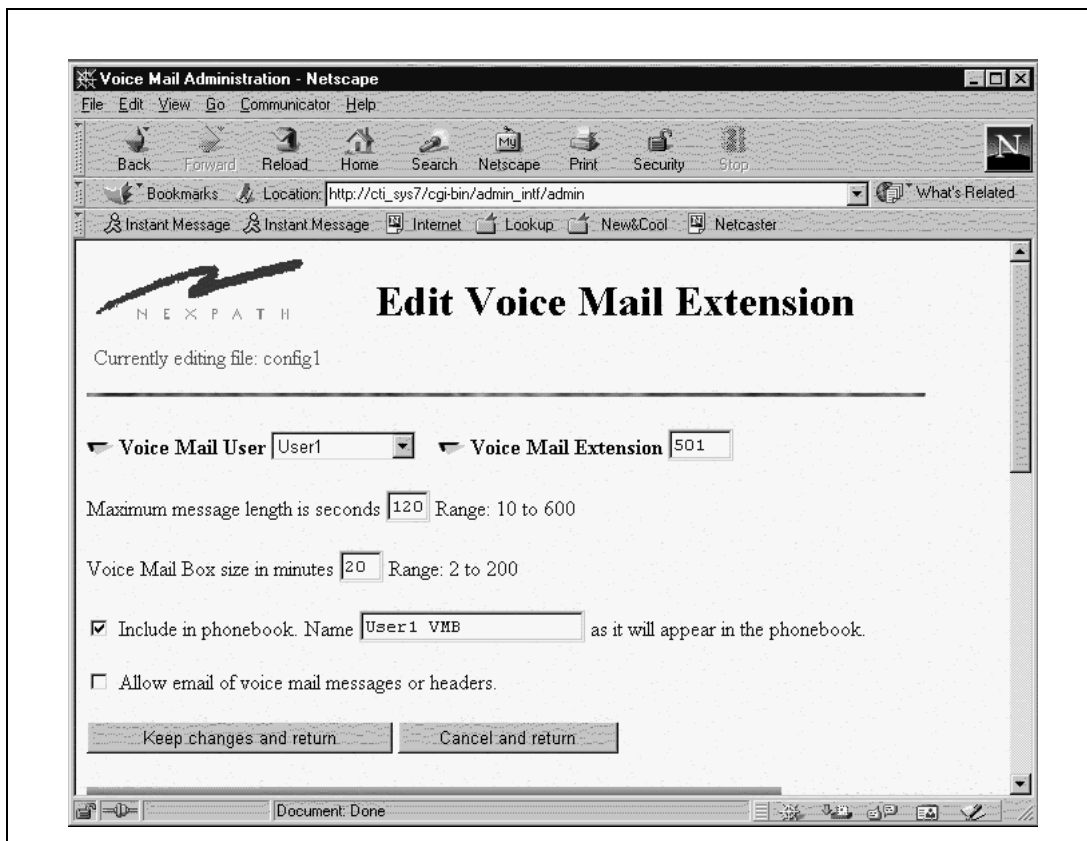


FIGURE 4-9: Editing a Voice Mail Box Extension

## View, edit, add, or remove voice mailboxes

To add, edit, or remove voice mailboxes:

1. From the AdminTool menu, click on **Edit Configuration**.

2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.
3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Voice mail**. A list of all voice mailboxes currently defined for the configuration is shown.
5. Select the voice mailbox extension you want to edit, then click **Edit** to edit the mailbox, or **Remove** to remove it. Alternately, you can click **Add new** to add a new voice mailbox.
6. If editing or creating a mailbox, review/change the parameters for the voice mailbox, then click **Keep changes and return**.
7. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

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**Note** All voice mail stored in the system for a given voice mail box is removed when a voice mail box extension is removed from a configuration, and that configuration is activated.

---

## *Speed Dial Extensions*

Another class of extensions in the NexPath Telephony Server are called Speed Dial Extensions (sometime referred to as Ghost Extensions). These extensions can be dialed from a telephone or from an auto-attendant, and cause the system to perform the actions specified by the speed dial string. Speed dial strings are only for seizing and dialing outside numbers.

Speed Dial Extensions are programmed into the system by the system administrator using **AdminTool**. Go to **Edit Configuration -> Speed Dial Extensions** to get the display below. The screen shows an example of a speed dial extension already programmed.

The Speed Dial Extension Edit page appears as follows:

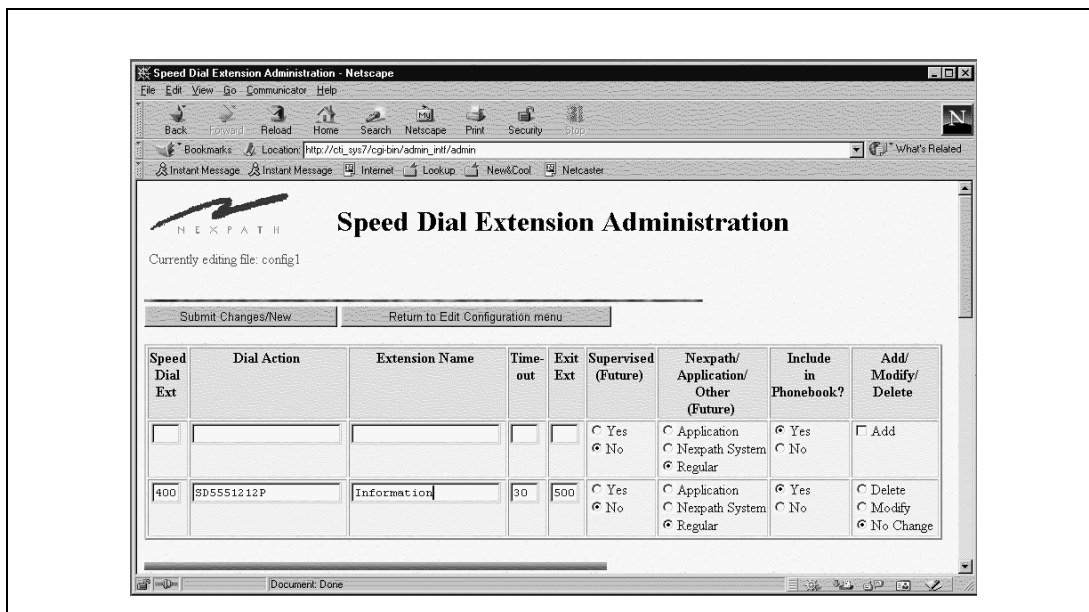


FIGURE 4-10: Speed Dial Extension Edit Screen

The following table lists the character and numeric codes that are valid in speed dial number strings:

| Character      | Action  |
|----------------|---|
| <b>0-9 * #</b> | Dial the digit specified                        |
| <b>,</b>       | (a comma) inserts a two second delay per comma. |
| <b>S</b>       | Seize outside line                              |
| <b>D</b>       | Wait for dial tone                              |

| Character | Action  |
|-----------|---|
| <b>P</b>  | Positive acknowledgment required for connection. A system message will be played to the called party, and the called party must enter an “*” in order for the call to complete. This is the <u>access code</u> for accepting a call. This is only valid for Centrex and CLASS type lines. For Normal lines, a <b>P</b> defaults to a <b>C</b> . |
| <b>C</b>  | Wait for a connection (absence of busy tone or ring back tone)  |

Speed dial extensions may be dialed from an auto-attendant. This allows a caller from an outside line, to be transferred to another outside line, using a speed dial extension. If the line is marked as a Centrex line, the system will use a Centrex transfer to connect the call, and the NexPath system will release the trunk (central office) line. See “Editing the parameters associated with each line” on page 65.

---

**Note** Speed dial extensions cannot be conferenced, cannot be the Day or Night action in the LINES table, nor can they be used in call distribution groups.

---

The positive acknowledgment (**P** in the dial string) is only valid on Centrex and CLASS type lines. For these line types, the **P** will cause the NexPath system to play the following audio announcement: “This is the NexPath phone system; press the pound sign key to complete this call or enter your access code...”. If you are receiving this call, at your cell phone, for example, you should enter the “\*” (star) key, which is the access code to accept the call. The reason the message also directs the listener to enter a pound sign, has to do with failed calls getting redirected back to the calling party. In the event a cell phone drops the call, it is possible for the caller to hear this message rather than the intended called party. The caller will hear the message, and generally not know what the access code is, hit the pound sign key, and go to voice mail. The called party is normally a person that is knowledgeable about getting NexPath calls, and will know that the access code is “\*”. This is also useful if the call inadvertently gets directed to an unintended party, it will not connect since the party does not know the access code. A pound sign will reject the call and send it to voice mail.

**Note** The Positive acknowledge feature (**P**) is only functional on lines designated as Centrex or CLASS. It defaults to a “**C**” for lines marked as Normal.

---

To add a new speed dial extension, enter the extension number you want to use (make sure it does not conflict with any other on the system), the dialing string as described above, and the other parameters as indicated. The *Supervised* and *NexPath System* columns are for future capabilities and are not used at this time. Be sure to check the **Add** checkbox, if the program has not automatically checked it for you. Then click on **Submit Changes**, and the extension will be added to the table. You can modify or delete other speed dial extensions in the table at the same time by making your changes, and clicking on the appropriate radio button in the table.

## Advanced Features

A number of features that are less commonly changed are under the **Advanced Features** button. These are shown in the figure below and explained in the discussion that follows:

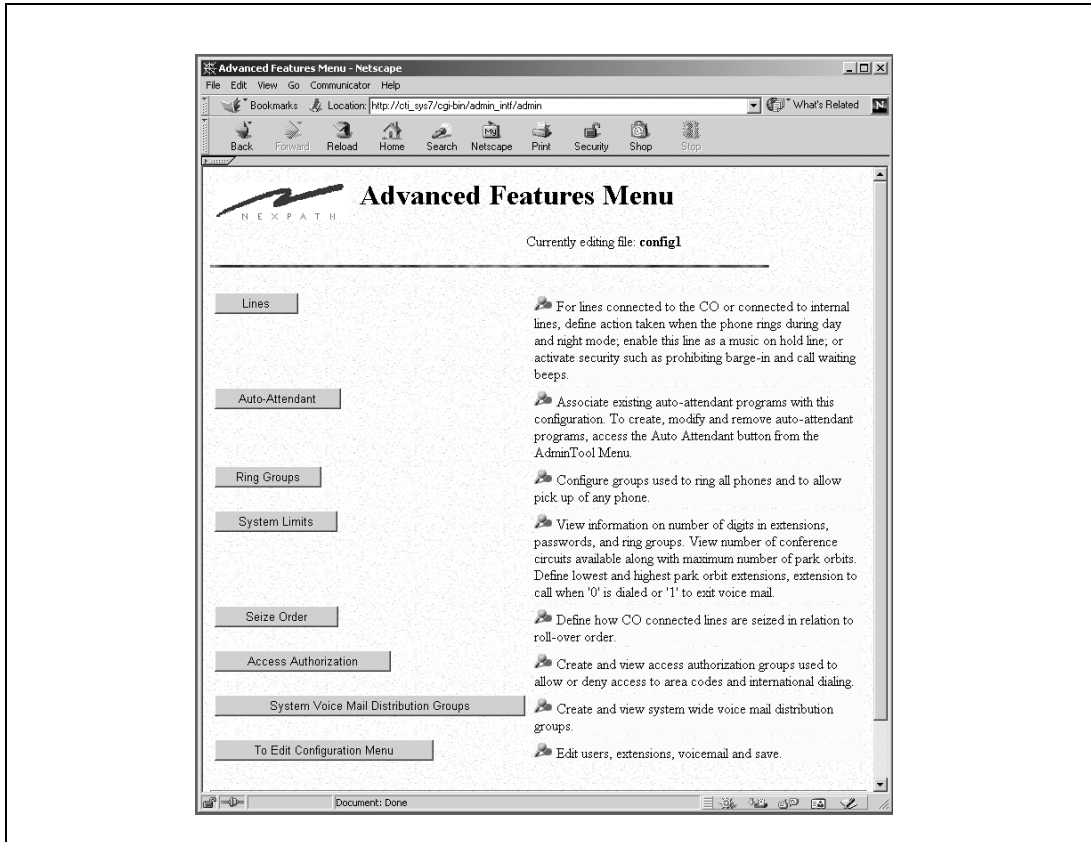


FIGURE 4-11: Advance Features Menu in AdminTool™

## *Line administration*

When you connect your phone system up to the physical wires in your building, you are connecting *lines*, that is, two-wire twisted pairs that run either to the phone company's central office (outside lines), or to phones, computers, FAX machines, etc. inside your building (inside lines). It is important to remember that the outside lines come in and **end** when they enter the NexPath Telephony Server<sup>1</sup>. While the phone company supplies ringing voltage, dial tone, etc. to the outside lines, this is **not** the ringing voltage, dial tone, etc. supplied to the phones within your building. Instead, all inside lines receive ring voltage, dial tone, etc., from an internal power source inside the NexPath Telephony Server itself.

An example might make this clearer: When a caller dials your company's number, the phone company sends ring voltage the NexPath Telephony Server just as if there were a normal telephone at the end of the line. The NexPath Telephony Server senses the ring voltage, and "takes the phone off-hook", signalling the phone company that the call was received. **At this point, no phone within your building has actually rung.** Simultaneously, the NexPath Telephony Server looks up what extension it is supposed to dial when a call comes in on that outside line, and dials it.

- If the extension specified is associated with an auto-attendant, the incoming caller is connected to that auto-attendant.
- If the extension is an individual's phone, the NexPath Telephony Server uses its internal ring generator to ring the phone specified.
- If the extension is a voice mailbox, the caller will hear the greeting recorded for that voice mailbox.
- If the extension is assigned a Day Ring Group number and the system is in the Day mode, then when that extension is dialed, all phones in the ring group will ring except those already offhook. Operation is similar when a Night Ring Group number is assigned an extension and that extension is dialed while the system is in the Night mode. Note: ringing the ring group assigned to an extension takes precedence over ringing just the inside line with which the extension is associated.

The lines available for viewing and editing are determined automatically by the NexPath Telephony Server every time the system is powered up. The parameters that can be controlled for each line includes:

---

1. The only time there is a direct connection between outside lines and inside lines is when power to the NexPath Telephony Server is removed, at which time bypass relays inside the NexPath Telephony Server force connections between each outside line and a specific subset of inside lines.

- What the **day and night action** for the line are; that is, whether or not incoming calls ring a particular extension (including an extension associated with an auto-attendant) or whether they go right to an inside line dial tone. This way, the system can then be configured so that, for example, incoming calls on specific outside lines dial the operator's extension when the system is in the Day mode, but dial the night auto-attendant program's extension when the system is in the Night mode. Furthermore, the operator's extension can be forwarded to the auto-attendant extension so that if the operator is unavailable, calls automatically get forwarded to the auto-attendant.
- **Access Authorization:** the area codes that can or cannot be dialed when someone picks up a phone and presses **[9]** to seize an outside line. See "Creating and modifying the access authorization groups" on page 81 for details on how to define the access authorization groups that appear here.
- Whether or not **hold music** is played when a call on this line placed on hold. Note that if this parameter is set on an outside line, then callers from outside will hear hold music when you put them on hold. On the other hand, if the inside line connected to your phone has this parameter set, then you will hear hold music if you are on your phone and someone else within your building puts you on hold. If you set this parameter on a paging (public address) line, then hold music will play on the PA speaker, interrupted only by announcements or a call ringing in.
- **Secure Line**, *e.g.*, whether or not barge-in, listen-in, and call-waiting beeps will be allowed on a line. This parameter should be set on inside lines that go directly to a FAX machine or modem so that the data stream is not inadvertently interrupted.
- **Listen-in:** enabling this permission allows a user to listen-in to calls on this line. For listen-in to function, the user must have permission (see "Users, user names, and user permissions" on page 39), and both lines involved in the call must have listen-in enabled.
- **Allow Recording:** enabling this permission allows recording of conversations on this line. For **Recording** to function, the user initiating recording must have permission (see "Users, user names, and user permissions" on page 39), the line that the user is talking to must have the **Allow Recording** permission set, and the system wide **Record Conversation** permission must also be enabled (See "System limits" on page 73.)

---

**Note** Since any one call takes either one inside line and one outside line, or two inside lines, then if either line in a call is **secure**, no **barge-in** will be allowed into that call. Call-waiting beeps, on the other hand, can still be heard on any inside line that is not programmed as a **Secure Line**.

**Listen-in** permissions are similar: both lines involved in the call must have listen-in permissions enabled in order to listen-in to a conversation on those lines. The line that is actually performing the listen-in does not have to have the permission enabled, only the lines into which listening is being done. The user (identified by his or her password), must have barge-in/listen-in/record permission.



**Recording a conversation**, however, can only be initiated by one of the lines involved in the call. This is done either via a hookflash sequence (see the *Users Guide*), or via the **NexDial™** program. In this case, **NexDial** must be logged in on one of the lines in the call. In order for recording of the conversation to be allowed, in addition to the system-wide recording permission, two permissions are necessary: (1) the user that is initiating the recording must supply a password that has the barge-in/listen-in/record permission, and (2) the other line in the call must have the **Allow Recording** permission enabled on the line.

---

**Note**     **WARNING:** *Recording or Listening-in to a conversation without the consent of one or both parties may be a violation of local, state, and federal privacy laws. It is the responsibility of the user of the NexPath Telephony Server, when using features of the system, to assure that he or she is in compliance with all applicable laws.*

---

### The following only apply to outside lines:

- **Always Decode Caller ID.** The NexPath system after each activation, or after a new central office line is connected, will look for the caller ID signals which come from the central office between the first and second ring. The system will answer the call after it detects and decodes caller ID, or after the second ring. If no caller ID has been subscribed to from the telephone company, and this parameter is set to **No**, then the NexPath system will cease to look for the caller ID signals after it determines none is present. It will answer the call after the first ring on all subsequent calls. It will continue to do this until a reactivation, a re-boot, or a CO line has been removed and later reconnected. The process of disabling looking for caller ID, and hence answering more quickly in the event no caller ID is present, can be defeated by setting this parameter to **Yes**. The parameter is normally defaulted to **No**. Setting the parameter to **Yes** will cause the system to always look for caller ID regardless of whether it has previously been detected on this line. In this event, if no caller ID is present, the system will answer after the second ring.
- **Centrex/CLASS/Normal.** You can designate lines as Centrex line to facilitate transfers that do not tie up a trunk line. CLASS line designation permits a hookflash to be sent to the CO line, by entering the telephone keypad sequence **Flash** **9**. This parameter is set by default to **Normal** which disables CO hookflashes. See “Centrex and CLASS Feature Integration” on page 68 for a further discussion of this line setting.

**The following only apply to inside lines:**

- **Seize Group.** Each inside line can have a different group of trunk lines that are seized when a caller dials “9” from this line.

In addition, for outside lines, you can determine whether the line is to be used as a normal outside (CO) line, a paging output line, or the music-on-hold input (only one music-on-hold input can be defined per system).

---

**Note** You can configure the system to have multiple simultaneously active auto-attendants by assigning some outside lines to ring at one auto-attendant extension number, others to ring a different auto-attendant, etc. This can be useful if you are doing business as more than one company or several companies are sharing the same system.

---

Lines are administered from the page at **Edit Configuration -> Advanced Features -> Lines** which appears as follows:

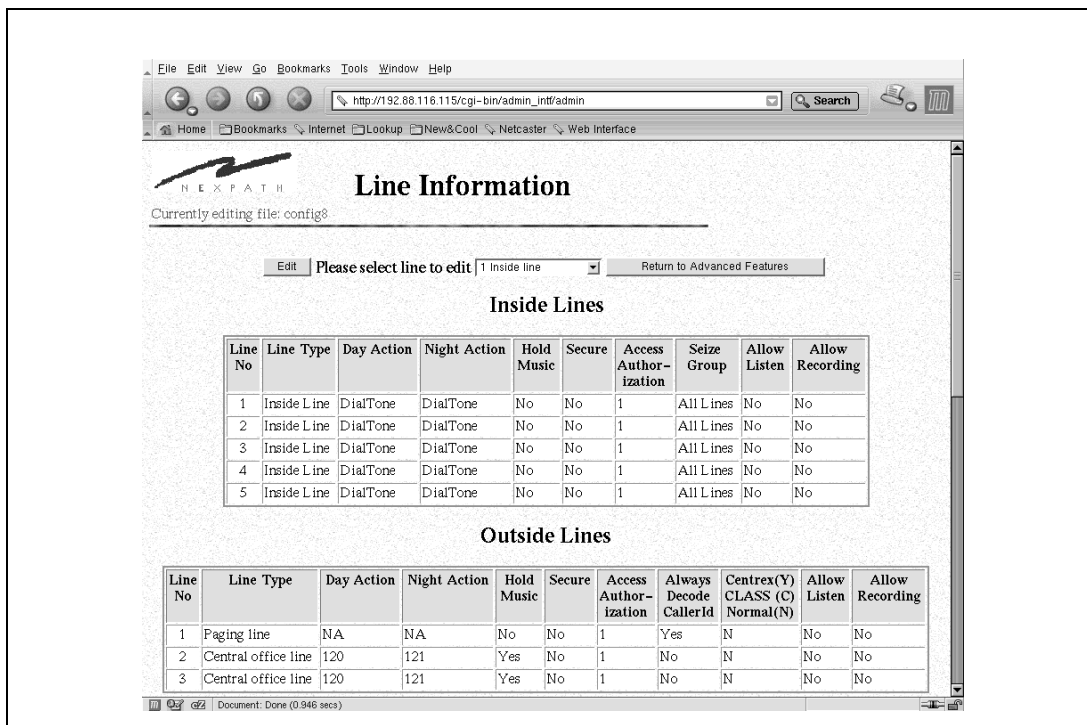


FIGURE 4-12: Line Information Screen

## Editing the parameters associated with each line

To perform line administration:

1. From the AdminTool menu, click on **Edit Configuration**.
2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.

3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Advanced Features** in the Edit Configuration menu.
5. Click on **Lines** in the Advanced Features menu.
6. Select the line you wish to edit from the pull-down list, then click **Edit**.
7. Make your changes, then click **Keep changes and return** to return to the Line Information page.

---

**Note** If you are changing a paging line into something other than a paging line, you will need to select both a day and night action for the line before you will be able to save your changes.

---

---

**Note** Creating or editing a hold music input will have no effect unless you enable hold music in the other lines.

---

8. Continue to select lines and make your edits until you are satisfied with the configuration of all lines.
9. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

When editing an Inside Line, the following page appears:

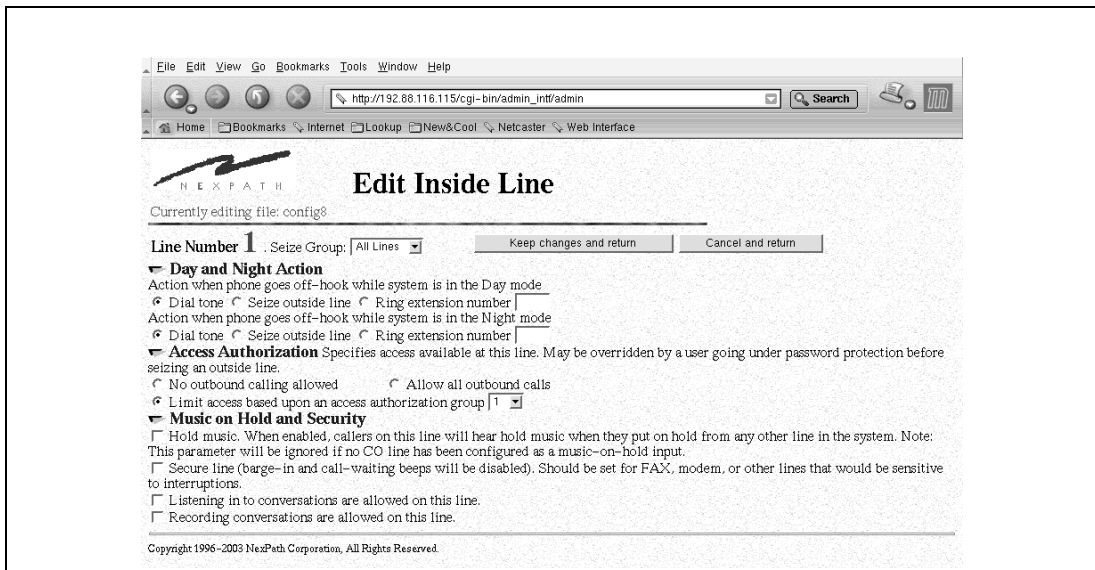


FIGURE 4-13: Edit Inside Line Screen

When editing an Outside Line, the following page appears:

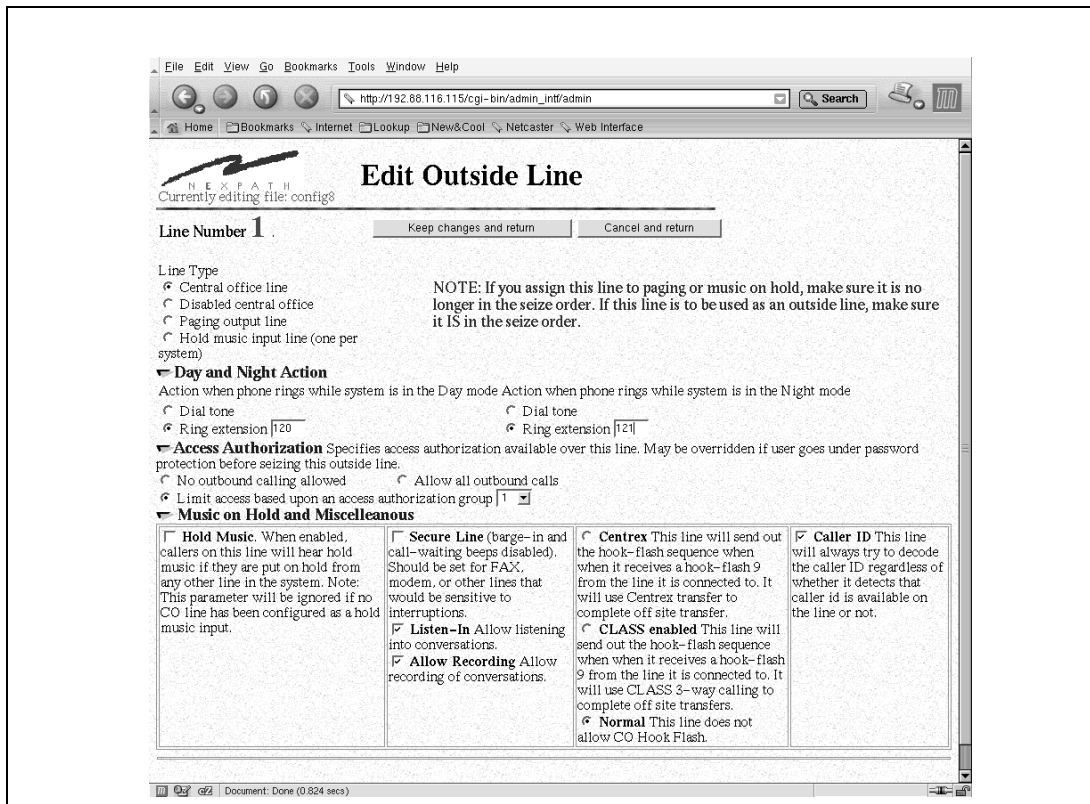


FIGURE 4-14: Edit Outside Line Screen

## Centrex and CLASS Feature Integration

CO or outside lines in the NexPath system can be designated as Centrex, Allow CLASS features, or normal. This is done in the **Lines** section of **AdminTool™**, at **Edit Configuration -> Advanced -> Lines**. This parameter can take on values of Y, C, and N, for Yes (Centrex), C (CLASS features allowed), or N (normal line).

**Note** In older versions of the software, Lines that were previously designated as **Allow CO HookFlash=Yes** will now default to being designated as Centrex lines after updating your software to Release 7. There will be no change for lines that were previously designated as **Allow CO Hookflash=No**.

---

Centrex lines provide the following:

- Allow transfer from the auto-attendant to off-site numbers using the centrex transfer if the incoming call is on a Centrex line. This is accomplished using the speed dial extensions described above.
- Blind transfer sequence will use a Centrex transfer if the incoming call is on a Centrex line and the dialed number is a speed dial extension. If busy, ring-no answer, time-out waiting for a connection or error, the caller will be sent to the exit extension.
- A consultation transfer can be accomplished with Centrex lines using the Flash-9 sequence, parking the caller at the central office, dialing the party to transfer to, and after consultation, completing the transfer with a Flash-9 sequence.
- Offsite forwarding will attempt to use a Centrex transfer if the call came in on a Centrex line. Otherwise the existing mechanism will be used.

If a CO line is designated as Allow CLASS features (C), then the same capabilities as above apply, except that the trunk (*i.e.*, CO line) is held open at the NexPath system after completing the transfer. Instead of a Centrex transfer, a three way call is created. There is usually a small charge from the local telco for using the CLASS three way calling feature. For Centrex transfers, the NexPath system drops out of the call.

**Note** Transfers using CLASS three way calling do not drop the trunk (CO Line) at the NexPath system. This is necessary since the telco will tear down the call if the originator of a CLASS three way call drops out. This is not true of Centrex.

---

If a CO line is marked as **Normal**, then hook flashes are not allowed to the CO line, and the telephone keypad sequence **Flash 9** (send a hook flash to the CO) will not send a hook flash to the trunk line, and the sequence will be ignored.

## Music on Hold Input Line

One outside line per system can be configured to be a music on hold input line. Outside lines (including Public Address lines) and inside lines can be enabled to play music when the line is put on hold. See the discussion above for details on enabling music on hold for inside and outside lines. The music on hold sig-

nal must come from an external device, such as a CD player or radio. Use the headphone output, or ear-phone output, on the external player, in conjunction with the music on hold cable that came with your system, to connect your music on hold source to the NexPath Telephony Server.

See “Music on Hold Extensions” on page 50 for details on assigning an extension to the music on hold line.

## Public Address (Paging) Output Line

One outside line per CBTI card can be configured to be a public address output line. An external amplifier is required. See “Public Address Extensions” on page 49 for further discussion on the implementation of paging output lines and paging extensions.

## *Ring groups (Pickup Groups)*

One area where extension numbers and line numbers overlap is with ring groups. The NexPath Telephony Server allows you to define a group of phones (i.e., inside lines) that you want all to ring simultaneously. You can then define one or more extensions that, when dialed, will cause all phones in that group to ring. Picking up any ringing phone in the group will pick up the call, but if no one picks up, the call will go to the voice mailbox associated with the *extension* dialed.

For example, suppose you want to have two people, Jim and Sue, act as live operators. Assume that the phone on Jim’s desk is connected to inside line 2 and on Sue’s desk is connected to inside line 3. Furthermore, assume Jim’s extension is 771, and Sue’s extension is 772. You could then define, say, ring group 2 as containing inside lines 2 and 3. You could then create an extension 774 (you might name it Operator) that has both its Day Ring Group and Night Ring Group parameters set to Ring Group 2. Calls placed to 771 will still ring at Jim’s desk, calls to 772 will still ring at Sue’s desk, but calls to 774 will ring both phones simultaneously, allowing either one to pick up the call. If you create a voice mailbox for 774, designated as the Operators Voice Mail, then calls will go to the Operator’s voice mailbox if neither Jim or Sue picks up an incoming call to 774.

Another use for ring groups would be setting up ring group 0, for example, to contain all inside lines, and then setting up all extensions so that their Day Ring Group is set to “none” while their Night Ring Group is set to 0. This way, incoming calls ring at a person’s desk during the day, but ring all phones in the building at night, allowing anyone to pick up the incoming call by picking up any ringing phone.



## Pickup Groups are the same as Ring Groups

It is worth mentioning that the NexPath Telephony Server allows calls to a ring group to be picked up from phones that are **not** ringing by entering the Pick Up Ring Group sequence `*0`, then the ring group number, under the theory that a ringing phone can be picked up by unauthorized personnel anyway whether it's in a ring group or not, so all the `*0` sequence does is save them some steps. You may, however, want to take into account any security concerns you might have before assigning the line going to the company president's desk, for example, to a ring group.

---

**Note** The factory default configuration is to configure ring group 0 so that anyone can pick up any ringing phone in the building by entering `*00`. You would not then normally want to assign ring group 0 as the day or night ring group for an extension, because calls to that extension would then ring every phone in the building.

---

The other factory default ring group is group 1, which contains just the factory default for the PA system line. If an extension is assigned to this ring group, calls to this extension generate a “ringing” sound over the PA amplifier. This is useful for situations requiring a loud bell, such as night or warehouse applications. Ring group 1 could be assigned as the night ring group for all inside line extensions, for example, so that calls to any extension will ring over the PA system only. Users can then pick up a call ringing on the PA speaker by entering `*01`.

You can, of course, remove one or both of these ring groups, or create your own to supplement them.

The ring group page is accessed from **Edit Configuration -> Advanced Features -> Ring Groups**, and in the default configuration appears as follows:

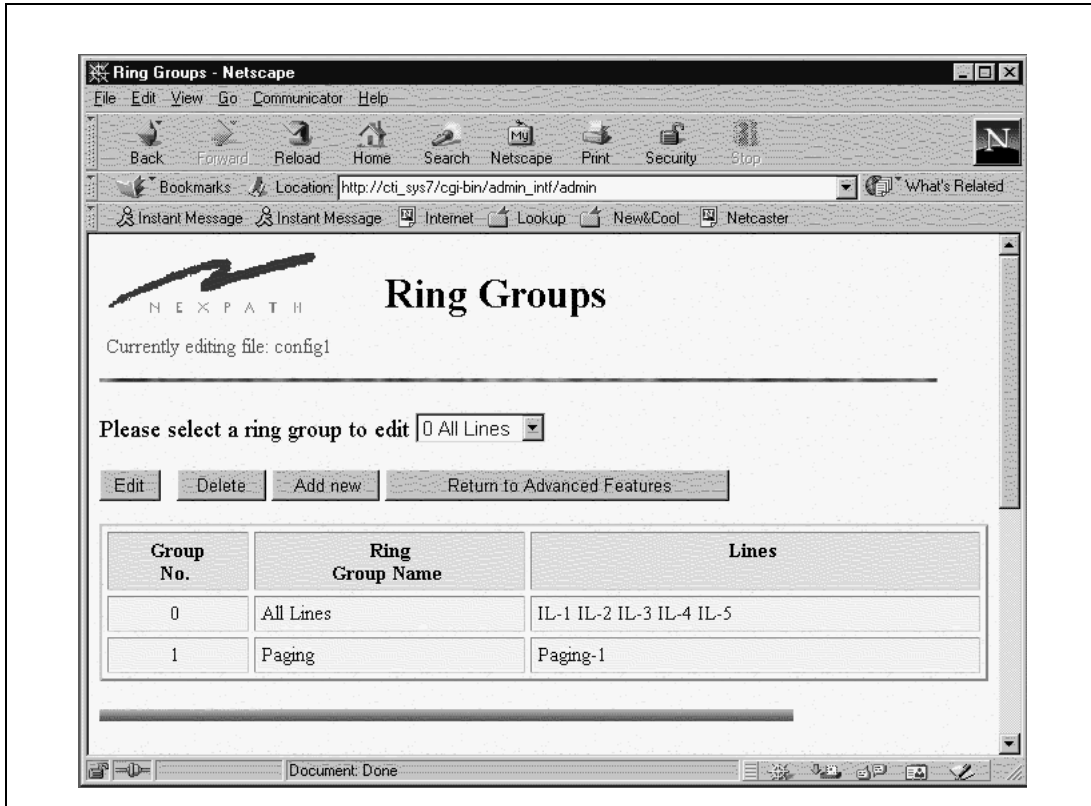


FIGURE 4-15: Editing Ring Groups

### Creating, reviewing, editing, or removing a ring group

To create, review, edit, or remove a ring group:

1. From the AdminTool menu, click on **Edit Configuration**.

2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.
3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Advanced Features** in the Edit Configuration menu.
5. Click on **Groups** in the Advanced Features menu. A list of the existing ring groups will be listed.
6. Select the ring group you wish to edit or remove, then click **Edit** or **Delete**. To create a new ring group, click on **Add new**.
7. Continue to edit the groups until you are satisfied with the information shown in the Ring Groups page.
8. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

---

**Note** Remember, you define ring groups as groups of lines, not extensions. Assigning lines to a ring group defines which phones will ring, not which extension is associated with which group. To then assign the ring group to ring when specific extensions are dialed, you must still edit the extension parameters as described in “Inside Line Extensions” on page 45.

---

## *System limits*

A number of system-wide parameters can be set for the NexPath Telephony Server, including:

- The high and low limits for the park orbit extension numbers
- Operator Extension: the extension number dialed when **0** is pressed during inside line dial tone or during any voice mail greeting, or when **1** then **0** is pressed during or upon completion of a voice mail recording.
- Voice Mail Exit Extension: the extension number dialed when callers press **1** during a voice mail greeting, or **1** then **#** during or upon completion of voice mail recording.

- The calling party control (CPC) delay factor. The number of seconds you enter here are removed from the end of all voice mail messages to compensate for the delay the phone company adds between when they detect that a caller has hung up and when they signal the NexPath Telephony Server that the caller has hung up. This parameter is set to 1 by default.

If the voice mail messages on your system all have long silences at the end of them, this parameter can be used to compensate for the delay time that the phone company is injecting between when a caller hangs up and when the NexPath Telephony Server is notified that they hung up. Alternately, if messages appear to be getting truncated, you may have this value set too high.

---

**Note** In the earlier releases of the NexPath Telephony Server software, this parameter was set at 9 seconds in the default configuration, which caused some systems to appear to cut off callers prematurely when messages were played back. In releases later than 1997.112.13, the default value for this parameter has been changed to 1 second. If your system appears to be cutting callers off while they are leaving voice mail, try reducing the value of this parameter in your system to 1 second.

---

- The central office hook-flash time in milliseconds. This is the amount of time that a central office line will go on hook, as if the hook switch has been depressed, when the sequence **Flash 9** is entered from the keypad (assuming CO hookflash has been enabled for this line; see “Line administration” on page 61). This is typically set to 750 milliseconds (3/4 of a second) as is standard for Centrex and CLASS feature access.
- The time limit for outside line calls involving one party (in the auto-attendant or on hold), i.e., calls with only one party involved connected to outside lines (no inside line involved). This is set to a default of 30 minutes. After this time limit, this type of call is disconnected. In addition, offsite forwarded calls are disconnected after this limit as well (CLASS or Normal lines only). This time limit prevents central office lines from getting blocked in the event that the central office does not send the proper disconnect sequence when a caller hangs up. The time setting is in minutes.
- An audio compression factor, used to set the volume level for both auto-attendant messages and voice mail message playback. This parameter is set to 650 by default. This parameter is used by the AGC processing software to process recorded messages to normalize the volume.
- Time limits for busy signal, dialtone, reminder tones, and for dialing keypad sequences, in seconds.
- The refresh time interval for the VMWI signal. The VMWI signal is an FSK signal that is sent to an extension telephone to light or extinguish a visual indication that there are unread voice mail messages. Many telephones, such as the Nortel 9316 or Panasonic KX-TSC50, respond to these signals and illuminate a red voice mail indicator lamp. The NexPath Telephony Server will send the VMWI signal each time the phone is placed on-hook, after new voice mail is received or listened to, and on a periodic basis. The time period for refresh of the indicator is set here.

- Set the message that is played after the personal (or custom) greeting in voice mail. By default, the next message played in a voice mail box after a person's custom greeting is something like "At the tone record your message...Press one for more options...recording". On a system wide basis, this message can be shortened to just "Recording" by selecting "Don't play greeting" in the selector box.
- System wide enable for Recording of Conversations is set at the bottom right. If this selector box is set to Don't Allow Recording of Conversations, then no recording of conversations is possible on the system regardless of the setting of other permissions in User Administration or Line Administration.

---

**Note**    **WARNING:** *Recording a conversation without the consent of one or both parties may be a violation of local, state, and federal privacy laws. It is the responsibility of the user of the NexPath Telephony Server, when using features of the system, to assure that he or she is in compliance with all applicable laws.*

---

- In addition, certain non-editable parameters are displayed.

The System Limits page is accessed from **Edit Configuration -> Advanced Features -> System Limits** and appears as follows:

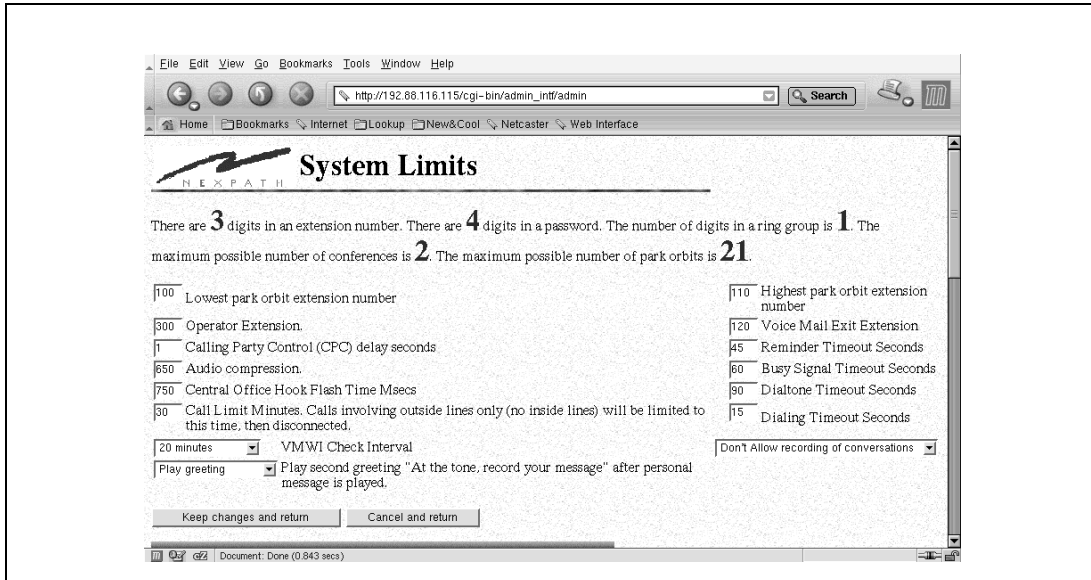


FIGURE 4-16: System Limits

### Reviewing or changing the system limits

1. From the AdminTool menu, click on **Edit Configuration**.
2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.
3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Advanced Features** in the Edit Configuration menu.
5. Click on **System Limits** in the Advanced Features menu.
6. Change the parameters as shown.
7. When satisfied with your changes, click on **Keep changes and return**.

8. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

## *Seize Order and Seize Groups*

Most companies have more than one outside line coming into their building from the phone company, but have the phone company configure the lines so that people can dial the same number for all of the outside lines. The phone company then defines which outside line will ring first when a caller dials the company’s number, which rings second if the first one is busy, etc. This is referred to as the “roll-over” order.

On the other hand, people inside your company can seize an outside line by pressing  , thereby tying up the line, making it unavailable to incoming calls.

To reduce the chances of a conflict between incoming calls and outgoing calls, you should define the seize order, that is, the order in which the NexPath Telephony Server grabs outside lines when someone presses  , as the opposite order from the roll-over order from the phone company.

More than one seize order group can be designated. Each can be given a distinctive name. For each line in the system, a different seize group can be designated, to facilitate multi-company installations. See “Line administration” on page 61 for details on assigning the seize group associated with an inside line.

The Seize Order page is accessed from **Edit Configuration -> Advanced Features -> Seize Order** and appears as follows:

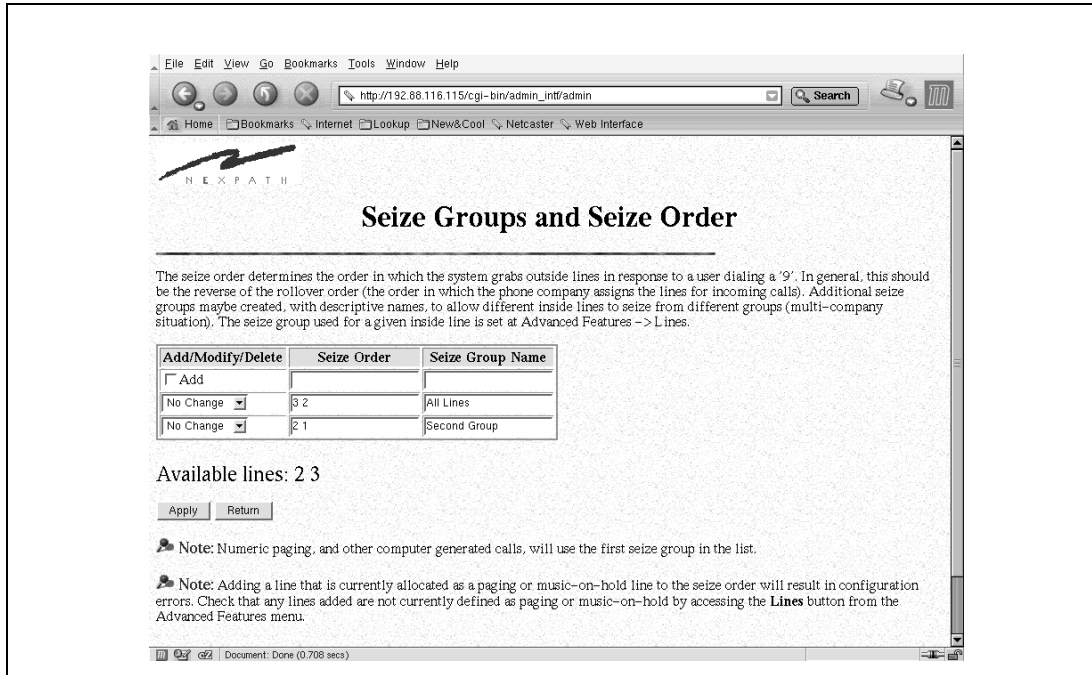


FIGURE 4-17: Seize Groups and Seize Order

### Defining or changing the seize order

1. From the AdminTool menu, click on **Edit Configuration**.
2. If the only file listed is "config", create an editable file per the instructions in "Creating an editable configuration" on page 36.
3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Advanced Features** in the Edit Configuration menu.
5. Click on **Seize Groups and Order** in the Advanced Features menu.



6. Add or delete lines from the seize order as shown, by clicking in the Seize Order box. When adding lines, put at least one space between each line number. The numbers indicate the line number of the outside line.
7. Change the selector box to **Modify** on each group that you are changing.
8. You can add a new Seize Group by checking the **Add** checkbox, and making entries on that line.
9. You can delete a Seize Group by selecting **Delete** on the group you want to delete. Warning: If you used this group anywhere else in the configuration, you need to make appropriate changes. Otherwise you will get an error message when saving the configuration.
10. When satisfied with your seize order and groups, click on **Apply**.
11. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

---

**Note** Remember not to use any outside lines defined as paging outputs or the hold-music input in the seize order, otherwise an error will be generated when saving the configuration.

---

## *Access Authorization groups*

The NexPath Telephony Server allows you to choose, on a line-by-line basis, whether to block all long distance calls on that line, allow some area codes to be dialed, or allow all long distance calls. While the actual selection on a line-by-line basis is done using the procedures outlined in “Line administration” on page 61, the definition of the authorization groups that allow or disallow only selected area codes is done by following the procedure described below.

Access authorization groups are also assigned to individual user accounts, allowing users to override the permissions on a given line by first entering the Enter Password sequence **# 3**, then their password, then seizing an outside line.

Access groups can be of one of the following types:

1. **Allow**- A group with the access type of allow means that only those area codes in that group will be allowed; all others will be denied.
2. **Disallow**- A group with the access type of disallow means that all area codes except those area codes in the group will be allowed.
3. **Allow or Deny All**- Allow or Deny all is done in Line programming (See “Line administration” on page 61). To allow a user access to all area codes and international calling sequences, set the user or line's access authorization code to “allow” instead of assigning an access authorization group. To keep all access restricted, that is, to disallow ALL outbound calls set the user or line's access authorization code to “disallow”. Access authorization groups allow for customization and mixture of access codes. Additionally, if a group is set to “allow” with no area codes defined, then only local (not 1-xxx) calls will be allowed.

There may be at most 32 codes in an access authorization group. There may be at most 20 access authorization groups.

The Access Groups Authorization page is accessed from Edit Configuration-> Advanced Features -> Access Authorization and appears as follows:

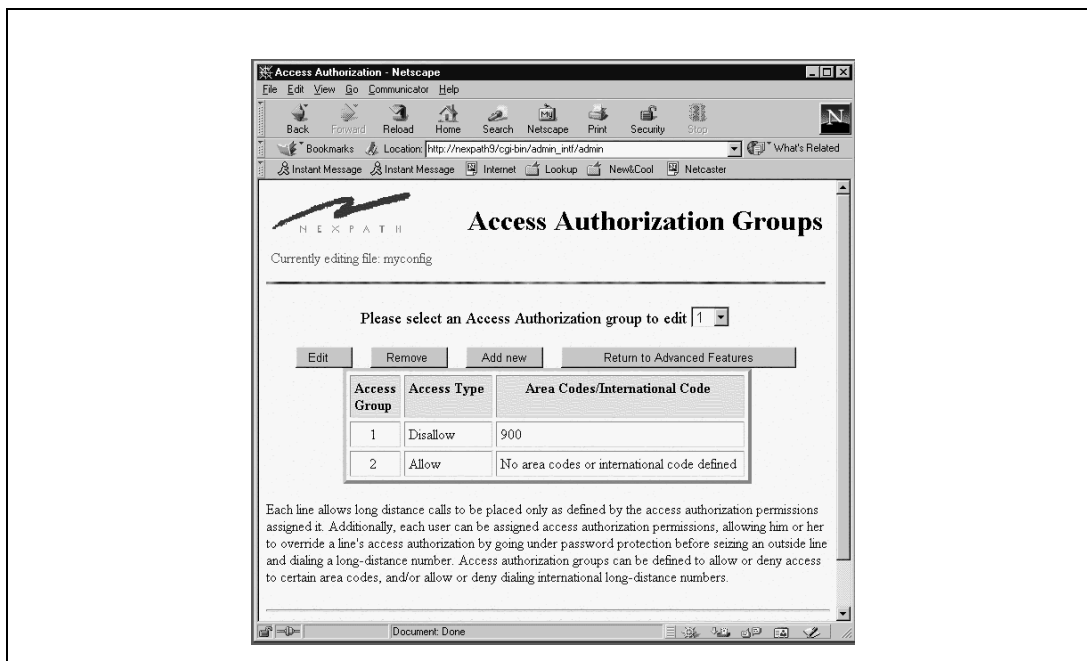


FIGURE 4-18: Access Authorization Groups Edit in AdminTool™

## Creating and modifying the access authorization groups

To create or modify an access group:

1. From the AdminTool menu, click on **Edit Configuration**.
2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.
3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.

4. Click on **Advanced Features** in the Edit Configuration menu.
5. Click on **Access Authorization** in the Advanced Features menu.
6. Choose a group to edit, or enter an unused access group number and click on **Add new**.
7. Select the area codes to be allowed or disallowed, then save your changes.

---

**Note** Associating an empty “allow” group with a given line or user means that no long distance calls to be made from that line or, if a user enters his or her password to try to override the permissions for a line, by that user.

---

8. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

## Voice Mail Distribution Groups

You can set up groups of voice mail boxes, and assign this group a name with an audio file that announces its name, so that voice mail messages can be sent to multiple mail boxes in one operation. System voice mail distribution groups are available for any user to select from. Individual users can also create their own personal voice mail distribution groups, using **NexDial**. See the *Users Guide* for more details on creating personal voice mail distribution groups.

System voice mail distribution groups are created or modified at **Edit Configuration->Advanced Features->System Voice Mail Distribution Groups**. A screen similar to the following should appear:

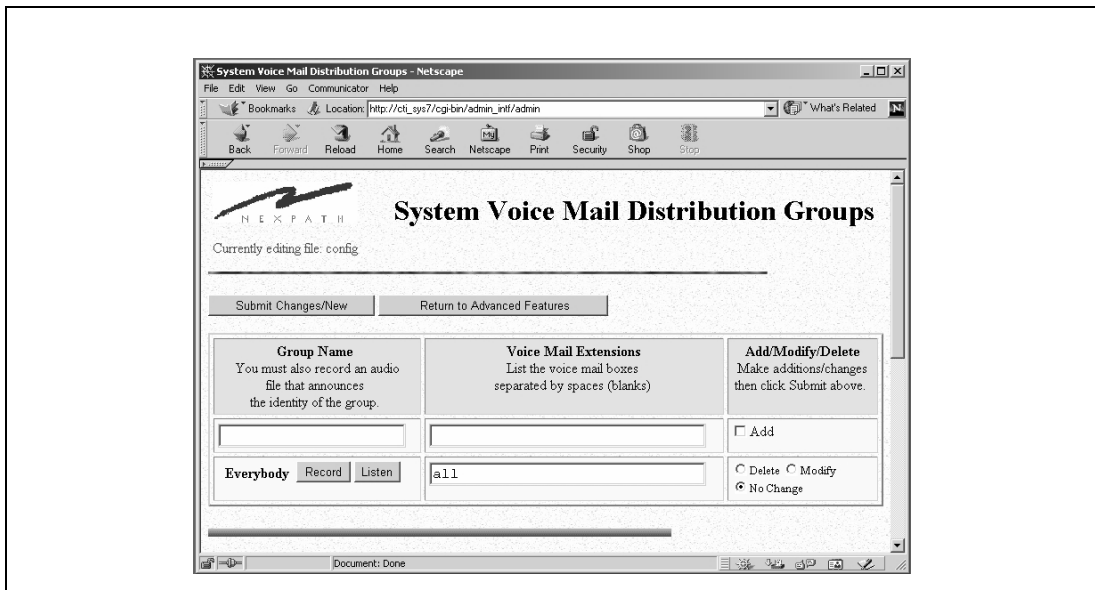


FIGURE 4-19: System Voice Mail Distribution Groups

## System Voice Mail Distribution Groups

Defining a system distribution group will allow any NexPath system user to add this group to his list of voice mail distribution groups for his voice mail box. The group name for the system voice mail distribution group also identifies the name of an audio file played for telephone users to select the group to which to distribute messages. Recording of this name announcement must be done from this page, after a group is defined and the changes submitted.

---

**Note** Any changes to the audio recording, or to the group contents, require that the configuration be reactivated so that the changes take effect.

---

## Voice Mail Extensions

Each system voice mail distribution group consists of either a list of voice mail boxes to distribute the messages to, or the keyword **all** which is recognized as all voice mail boxes in this configuration. Enter a list of valid voice mail extensions (or the word **all**), separating each one by one or more spaces (blanks).

First create (add) the group name, along with the voice mail boxes to which to distribute messages, and submit the changes. Then record the audio file that announces the group name. The audio file is recorded using the telephone extension you logged in with. It is best if your recording is limited to 4 seconds. When you are finished recording, hang up or press the # key on the telephone keypad.

### To add a system voice mail distribution group

1. From the AdminTool menu, click on **Edit Configuration**.
2. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.
3. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
4. Click on **Advanced Features** in the Edit Configuration menu.
5. Click on **Voice Mail Distribution Groups** in the Advanced Features menu.
6. Enter a group name in the first box.
7. Enter one or more voice mail extension numbers, separated by spaces (blanks). Or enter the keyword **all** to refer to all voice mail boxes on the system.

8. Check the **Add** box on the far right, and then click on the **Submit Changes/New** button, and wait for the screen to repaint.
9. Lift the telephone on the logged in extension, and click the **Record** button on the screen by the new group you created. Say a descriptive name of the group (wait for the “recording <beep>...” ) and then hang up or press the # button on the telephone keypad.
10. Add other groups in a similar manner, if desired.
11. To edit the voice mail extensions of an existing group, make your changes and then click on **Modify** or **Delete** at the far right, then click on the **Submit Changes/New** button.
12. To change the audio recording for an existing group announcement, lift your telephone on the logged in extension, and click the **Record** button on the screen next to the group you wish to change, and re-record the new announcement as described in step 9 above. (You must re-activate the configuration for changes to the recorded group name announcement take effect.)
13. When satisfied with your groups, click on **Return to Advanced Features**.
14. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

### *Setting the schedule for automatic switch-over between Day mode and Night mode*

Many of the features of the NexPath Telephony Server, such as what action is taken when a line goes off-hook and which phone or phones ring when a specific extension is dialed, can be made dependent on whether the system is in the Day mode or Night mode. While any user with Enable Day/Night Ring permissions can manually change the system from Day mode to Night mode from the telephone keypad, as an administrator you can also set up the system to perform the switch-over automatically by doing the following:

1. From the AdminTool menu, click on **Day/Night Mode**. This will bring up the Schedule Day/Night Mode page.
2. Use the pull-down lists provided to enter a day-by-day schedule in the Schedule Day/Night Mode page.
3. Click on **Schedule Enabled** to activate your schedule, or **Schedule Disabled** to de-activate it.

**Note** If you leave an entry blank (“--”), the system will stay in whatever mode it last entered until the next non-blank entry is encountered. Also, make sure you set your system time and date as described in “Reviewing and/or changing the system time and date” on page 93.

---

**Note** The Day Night Mode settings take effect as soon as the screen is submitted. It is not necessary to activate any configuration to cause the Day Night mode settings to be active. However, these settings are only trip points, and changing the Day Night Mode settings on this page does not have any immediate effect on the system mode. The time must pass through the trip points for the Day Night mode to change. You can force the system into the Day or Night mode from the telephone keypad by entering **# 0** (Day Mode) or **# 1** (Night Mode) followed by a system administrators password.

---



The Day Night Schedule screen appears as follows:

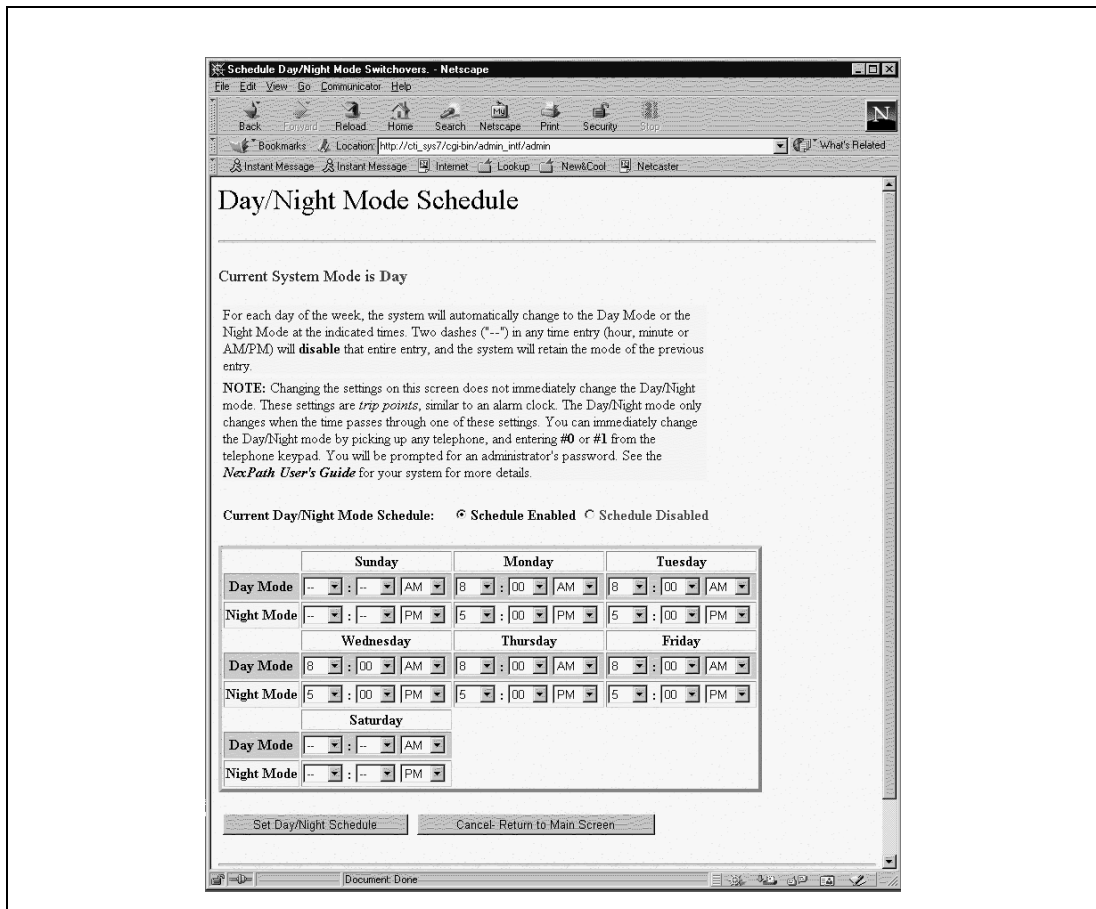


FIGURE 4-20: Day Night Mode Schedule Administration

## *Associating an auto-attendant program with a configuration file*

The NexPath Telephony Server handles auto-attendant programs by associating them with an extension number. This association creates an extension number that can be dialed from any inside or outside line. Auto-attendant programs are created separately (See the chapter [\*Auto-Attendant Programs\*](#) starting on page 99), and are not active until they associated with an extension in a running configuration, as described in this section.

In the standard configuration, the outside lines default to call extension 120 (121 in the night mode) on receiving an incoming call. These extensions are associated with the Day Program (Night Program in the night mode). When a call comes in, the call goes to this extension number, which then starts at the auto-attendant's root level and allows the caller to navigate through the auto-attendant tree using touch-tones.

Auto-attendant programs are created or modified as described in the chapter [\*Auto-Attendant Programs\*](#) starting on page 99.

You do not have to come in over an outside line to use an auto-attendant. It can be entered by dialing the auto-attendant extension number from any extension telephone.

The Auto-Attendant Association screen appears as follows:



FIGURE 4-21: Associating an Auto-Attendant Program with an Extension

If you created and saved a brand-new auto attendant program, as described in “Auto-attendants in the Nex-Path Telephony Server” on page 99, you will need to associate the program with a valid extension in a running configuration before it will take effect. To do this:

1. If you have not already done so, save your auto-attendant file. Correct any errors reported by **Admin-Tool™** when you do the save.
2. Return to the AdminTool menu and click on **Edit Configuration**.

3. If the only file listed is “config”, create an editable file per the instructions in “Creating an editable configuration” on page 36.
4. Click on the configuration file you want to edit, then click on **Edit Selected File**. This will bring up the Edit Configuration menu.
5. Click on **Advanced Features** in the Edit Configuration menu.
6. Click on **Auto-Attendant** in the Advanced Features menu. A list of the existing auto-attendant programs and the extensions they are associated with are listed.
7. Select the auto-attendant file you just edited from the list of available auto-attendants, enter an extension number in the **Extension** fill-in box, then click **Add association**. Note that you can re-use an existing auto-attendant extension number or create a new one.

---

**Note** If you created a new auto-attendant extension number, you will probably want to also modify the Day Action and/or Night Action parameters for the outside lines in your configuration so that your auto-attendant will be dialed for all incoming calls. Alternately, if you have a live operator, you can set the Day Action and/or Night Actions for each outside line to dial the operator’s extension, then enable call-forwarding at the operator’s extension to forward calls to the extension number of your auto-attendant. This way, incoming calls first go to your operator, then go to the auto-attendant if the operator is busy or otherwise unavailable. See “Line administration” on page 61 for details on how to specify the Day Action and Night Action for each line.

---

8. **SAVE YOUR EDITS!** If you are done editing the configuration, work your way back to the Edit Configuration menu and click on **Save** there, entering a file name in the **Save file as** box (the file name can be the same as the file you just edited). After entering a file name, click on **Save, return to the AdminTool menu**. You will also need to schedule your altered configuration file to be activated as outlined in “Activating a particular configuration file” on page 90.

### *Activating a particular configuration file*

After you have modified a particular configuration file or the auto-attendant associated with a particular configuration, you will need to activate the configuration file before the changes will take effect. You can schedule the file for activation by:

1. Clicking on **Activate or Update Software** in the AdminTool menu.

2. Using the pull-down list labelled **Select the configuration file to activate** to select the file you want to become the new, running configuration.
3. Setting a time in the boxes provided and clicking **Activate File**, or clicking **Activate NOW** if you want the file to become active as soon as all phones go on-hook.

---

**Note** Changing audio files takes effect immediately, as soon as the message is re-recorded. Changes to the auto-attendant program logic, however, require a re-activation of the configuration. If you have only changed the auto-attendant logic, and not the configuration, then you can re-activate the file `config`, which is a read-only file that always contains the current active configuration. This will activate auto-attendant program changes without altering the remainder of the configuration.

---

## *Updating your software*

The NexPath Telephony Server software is installed or upgraded as described in the chapter [\*\*\*Installing New Software Releases\*\*\*](#) starting on page 133.

To check which revision you are currently running, go to the main **AdminTool™** menu. The software revision number is shown at the top of the page above the brown horizontal line. The first number is the year of the release, the second number is the day of the year, and the third number is the hour of the day in GMT.

The features of your software are indicated by the release number, also printed on the **AdminTool** menu. This manual is written for features Release 7.

## *Uploading and downloading files from the NTS server*

The following types of files can be uploaded and downloaded to and from the NTS server:

- Configuration files.
- Auto-attendant program files.
- The audio prompts associated with your auto-attendant programs.
- Caller ID routing tables.

These types of files can be uploaded or downloaded from **AdminTool™** by clicking on **Upload/Download** from the main menu. Follow the on-screen instructions.

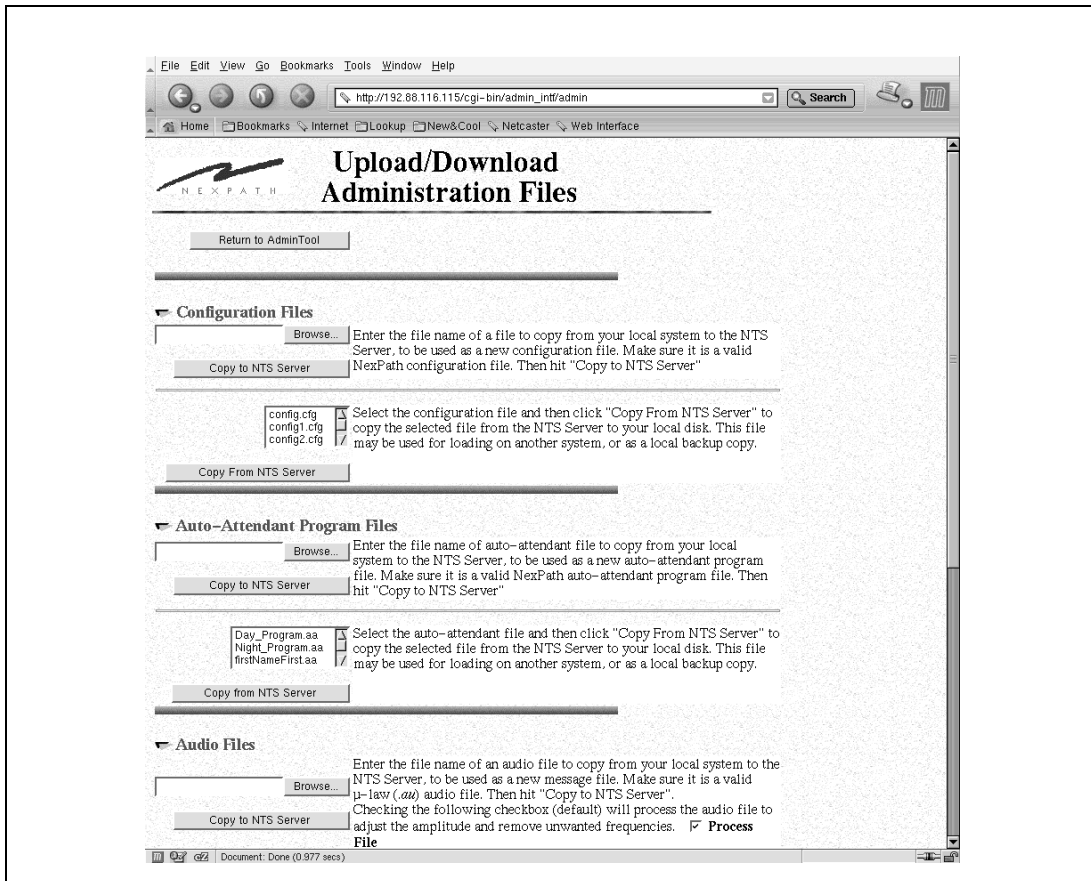


FIGURE 4-22: Upload Download Files Screen

We recommend that you use the **BackupTool** for backing up the complete NexPath Telephony Server, rather than uploading and saving individual files (See the chapter *Using BackupTool* starting on page 147).

**Note** Take care is using audio files that are recorded on systems other than the NexPath Telephony Server. The audio level may be too loud, which can cause interference with touch tone detection in auto-attendant programs. The Upload Audio file section has a check box to pre-process the audio file to set the level appropriately.

---

## *Reviewing and/or changing the system time and date*

Many functions, such as the time and date stamping of voice mail messages, require that the system's internal time and date be set properly. Under normal circumstances, the NexPath Telephony Server keeps track of time automatically even when power is removed from your system using an internally-powered real-time clock. However, you may find that you need to change your system time when you first set up your system because the system was manufactured in a different time zone than yours.

To review and/or change the current setting of your system's clock:

1. Click on the **System Parameters** button in the AdminTool main menu.
2. If no changes to the time or date need to be made, click on **Return to the Edit Configuration Menu**. Otherwise, make your changes by clicking on the boxes you want to change, using the backspace key and number keys to make your changes, then clicking on **Set System Date and Time**. Note that the time is entered in military, or 24-hour clock notation.

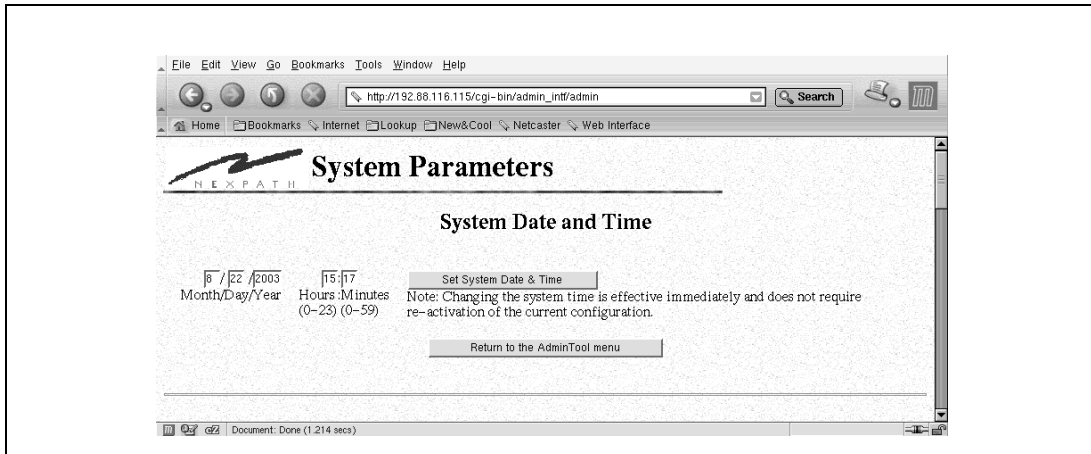


FIGURE 4-23: Setting the date and time from AdminTool™

You can also set the date and time and also the time zone from the NexPath Telephony Server console using a VGA monitor and a keyboard directly connected to the NexPath Telephony Server system. See Figure 4-24 on page 95. Select Setting -> Date and Time. The screen values are fairly self explanatory. Use the left or right arrow keys, or the tab key, to navigate, the up or down arrow keys to change settings. The selected time zone is the entry at the top of the list box. Note that in some cases there are multiple identical time-zones. For example, *America/Los\_Angeles* is the same as the entry *US/Pacific*. If you are confused by the *America* entries, scroll to the bottom and use the *US* entries.

The current time is displayed when the screen appears. If you change you mind about any settings on the date and time page (or any page), you can press the <ESC> (Escape key) to cancel the entries and the screen.



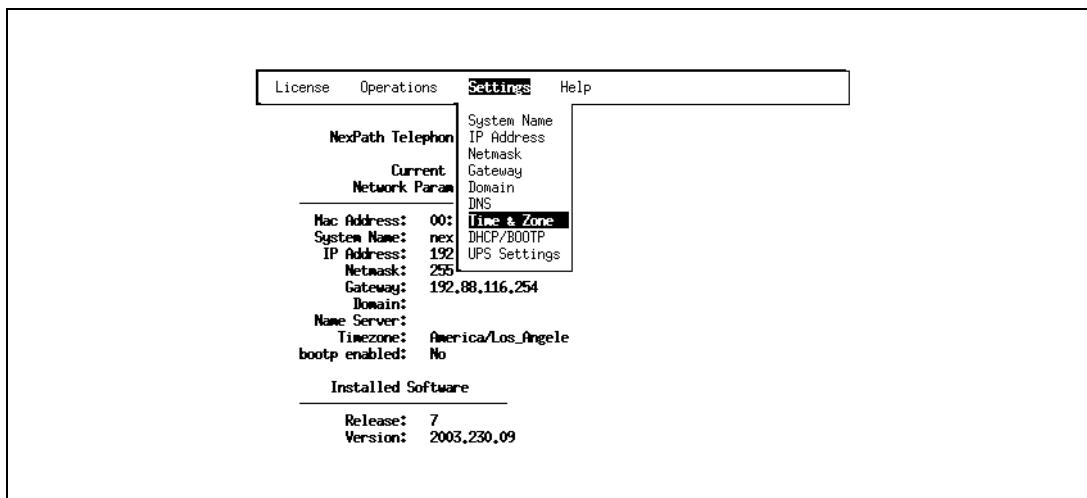


FIGURE 4-24: Setting the data and time from the NexPath Telephony Server Console

As noted in the system configuration page, changes will take effect immediately, and no further changes to the system are required.

**Note** Do not change the system time after you have activated a new configuration, for activation at a later time. The new configuration may never be activated, or may be activated up to 24 hours later. The results are unpredictable.

If you would like to have the time change automatically for Daylight Savings Time, you must set the time zone. This can only be done from the console of the NexPath Telephony Server, or via a floppy disk when you set the network parameters in the SETUP.TXT file. See [Connect the system to a network](#) on page 23 in the chapter [Network Installation](#). Changing the time zone requires rebooting the NexPath Telephony Server so that the changes are communicated to all running processes.

## *Viewing or Resetting Users Passwords*

You can view the current passwords of all users from AdminTool.

1. Click on the **System Parameters** button in the AdminTool main menu.
2. Scroll down to the area titled *Current Extension Ownership and Settings*.
3. Each user is listed, along with his or her password, and then a list of each extension the user owns with the current state of call waiting, call forwarding, and do not disturb settings.

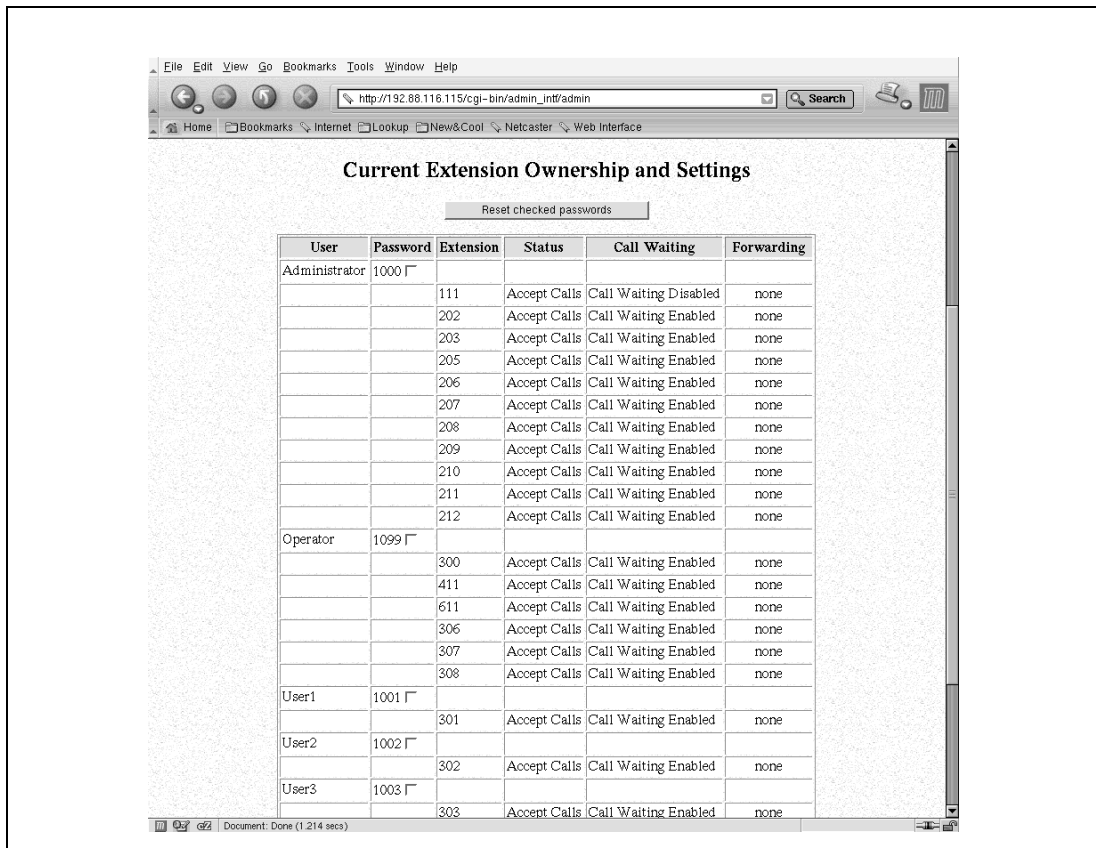


FIGURE 4-25: Viewing and resetting passwords from AdminTool™

The password of a user can be changed from the telephone, from **NexDial**, or from the **TelOper** web browser interface. Passwords are initialized to numbers under 1500, and can only be changed to numbers over 1500, except by resetting as described below.

To reset a password to its initial default setting, click on the checkbox by each user password that is desired to be reset. Then click on the **Reset Checked Passwords** button. The password for this user is immediately

reset to the default value (no activation required). The default password is shown at Edit Configuration-> Telephone Users, under the column **Initial Password**. See “Users, user names, and user permissions” on page 39.

---

### *Auto-attendants in the NexPath Telephony Server*

The NexPath Telephony Server's auto-attendant feature lets you configure your system to automatically answer incoming calls with a greeting such as, "Thank you for calling the XYZ Corporation. If you know your party's extension...", and then allow callers to route their own calls using their touch-tone phones, removing the necessity of providing a live operator at all times to do the routing. The auto-attendant also provides features such as automatic call distribution (ACD), detecting and routing fax calls, and dial by name.

The "roadmap" that callers can follow to get to their destination in the NexPath Telephony Server is defined by an auto-attendant program. These programs, in turn, are defined and maintained using the tools described in this section.

Auto-attendants can be thought of as "decision trees", in that, when a caller reaches a given point in a program, he or she usually must make a decision as to which branch to take next ("Press 1 for sales, 2 for technical support").

Most NexPath Telephony Server configurations contain at least two auto-attendant programs, one for the Day mode and one for the Night mode. One typical difference between the two auto-attendants is that the greeting for the Night program will usually say something like, "We are closed at this time." These programs often also take advantage of the NexPath Telephony Server's ability to make calls to a given extension ring at different phones depending on whether the system is in the Day mode or the Night mode. This allows the

system to be set up, for example, so that after-hour calls either ring over the PA speaker (allowing anyone left in the building to hear them and possibly pick them up), or only at the desk of a security guard or other individual who is there after hours.

### *Creating and modifying auto-attendant programs*

In general, the procedure for creating and activating an auto-attendant is as follows:

1. Click on **Auto-Attendant** in the **AdminTool™** menu. **AdminTool™** is started in a web browser as described in *Starting AdminTool, the system administration program* on page 33 in the chapter *Software Configuration*

2. Select the auto-attendant program you want to modify, or click **Add New** to create a new auto-attendant file

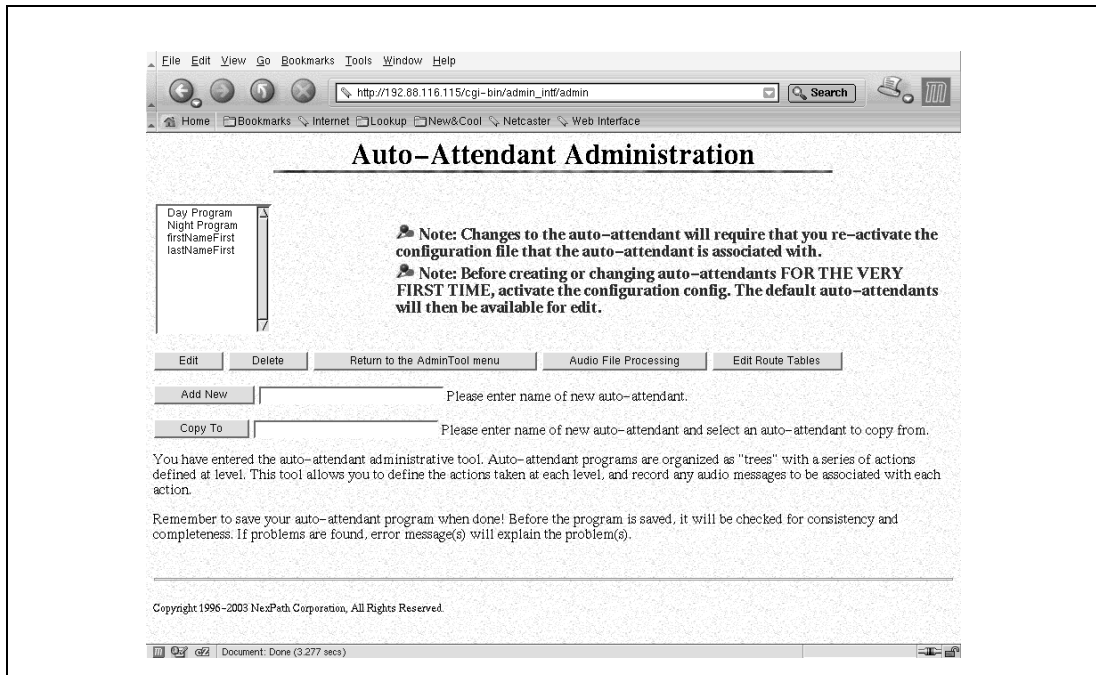


FIGURE 5-1. Auto-Attendant Administration

3. If you want to make a copy of an exiting auto-attendant, first select (highlight) the name of the auto-attendant you would like to make a copy of in the selector box. Then type in the name you would like to call your new auto-attendant in the edit box beside the **Copy To** button, and then click **Copy To**.

**Note** The auto-attendants `firstNameFirst` and `lastNameFirst` appear in the selector list of available auto-attendants. These files are automatically generated each time a configuration is activated, using the extension names to create a dial by name tree. These files are automatically included by reference in any auto-attendant that has a dial by name action selected. Normally, you would not use these auto-attendants directly nor would you associate them with an extension. They are here mainly to allow the

user to view the files to inspect the logic tree for debugging or understanding a particular dial by name situation. These files are read-only and cannot be modified.

The following screen is displayed when editing the default auto-attendant supplied with the system:

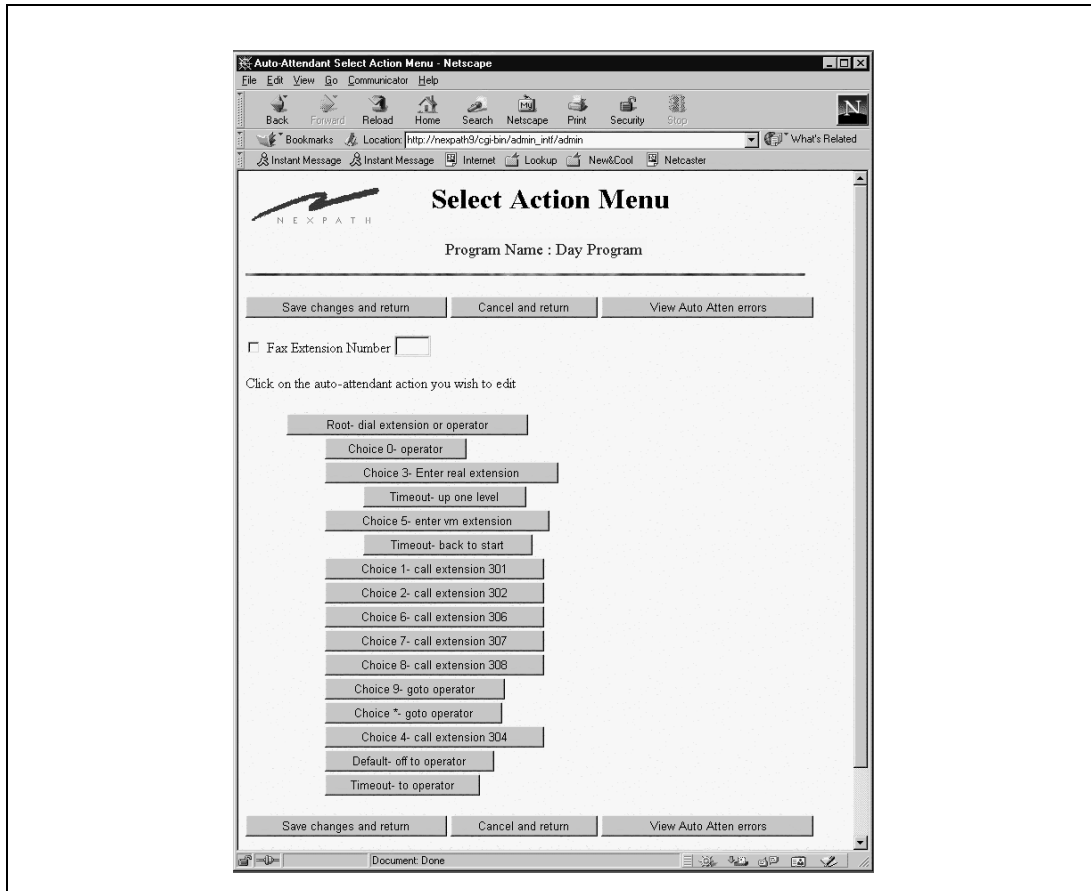


FIGURE 5-2. Default Auto-attendant Select Action Menu



4. Each level in the decision tree is displayed at the same indented offset. Nested levels are indented further.

Click on the button in the program you wish to edit in the **Select Action** page (in a new program, the only point available will be named **Root**). This will bring up the **Action Menu** page.

5. Select which type of action is to take place when a caller reaches this point, then click **Continue with Edit**. Most actions will require you to enter more information after you click on **Continue with Edit** before sending you back to the **Select Action** page. See “Details of the actions that can be selected in the Action Menu page” on page 106 for more information on the actions available.

The following screen is display for the Action Menu page:

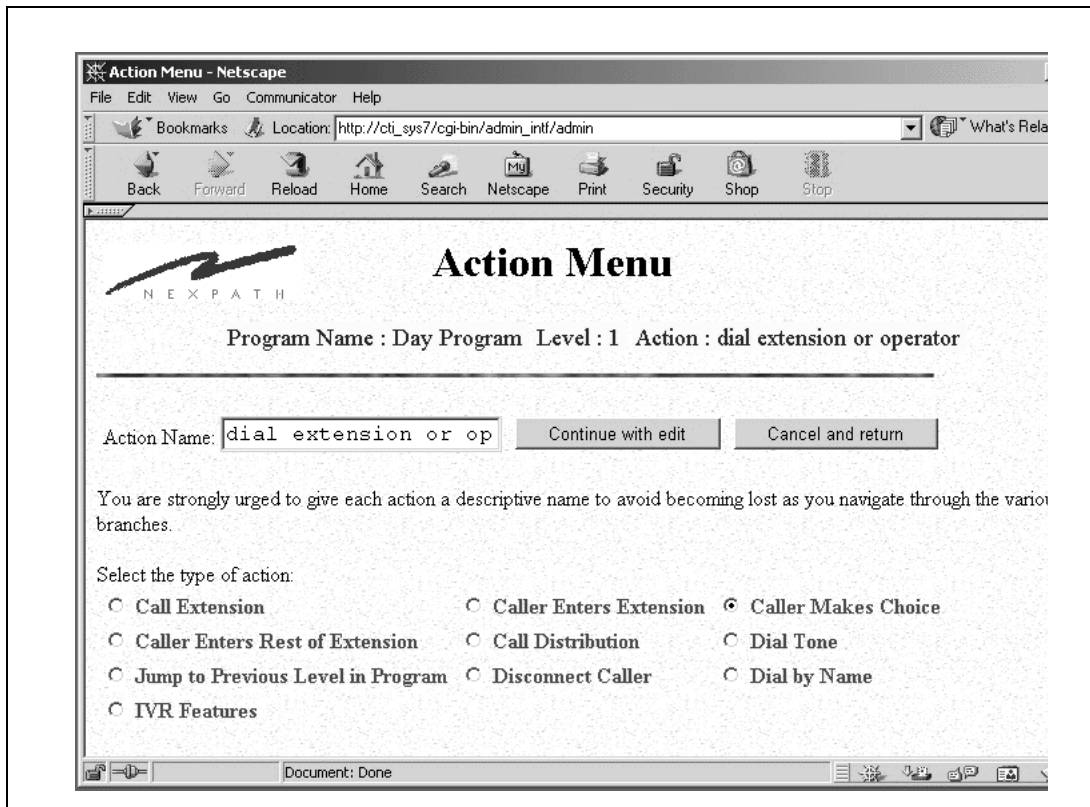


FIGURE 5-3. Action Menu

**Note** When specifying a point as a **Caller makes Choice** action, we recommend you enable only one choice (i.e., allow the auto-attendant to process only one keypad entry) at a time, then fully define and test that one choice before enabling any more choices.

**Note** When specifying an extension that is to be dialed by the auto-attendant, the system will inform you that the extension entered will not be validated against any configurations. This is its way of telling you that

you can create auto-attendants that refer to extensions that are not defined in the configuration file with which you end up associating the auto-attendant program.

No checking is done, in fact, until a caller is navigating through the auto-attendant and presses whatever button sends him to the undefined extension. The caller will then hear the message “There is a problem with the auto-attendant program file. Consult your system administrator” and will be disconnected. Thoroughly checking your auto-attendant after associating it with a configuration and activating it is highly recommended. Adding both a descriptive name and a reference to the exact extension dialed in the name of all actions that dial an extension is also helpful.

---

6. Check the program created for errors by clicking on **View AutoAtten Errors** before leaving the Auto-Attendant page.
7. Save your auto-attendant program.
8. If you have not already done so, associate the auto-attendant with an extension number in the desired configuration file. If appropriate, edit the Day Action and Night Action of the outside lines in the configuration, and/or enable call-forwarding from your operator’s extension to the auto-attendant’s extension. See *Associating an auto-attendant program with a configuration file* on page 88 in the chapter *Software Configuration* for details.
9. Activate the configuration file (see *Activating a particular configuration file* on page 90 in the chapter *Software Configuration*). Auto-attendant programs are read from disk files and stored in system memory. Changes to the program files do not take effect until the configuration is re-activated, at which time all referenced auto-attendant program files are re-loaded from the hard disk. Changes to voice prompts take effect immediately, and re-activation is not required, since voice files are read from the hard disk each time the voice file is accessed by a caller.
10. Test your auto-attendant program by dialing the extension number associated with the auto-attendant, then going through all possible choices in the auto-attendant.

## *Details of the actions that can be selected in the Action Menu page*

The Action Menu, as show in Figure 5-3 on page 104, allows you to select between the following types of actions to be taken when a caller reaches any given point in an auto-attendant program:

|                         |  |
|-------------------------|--|
| Call Extension          | <p>After one or more optional messages are played, callers are directly routed to the extension specified in the Call Extension subpage that appears when you press <b>Continue with Edit</b>.</p> <p>One example of where the Call Extension action would be used: If you allowed a caller to select either a 1 or a 2 in a Caller Makes Choice action, you might then specify choice 1 under the Caller Makes Choice action to be a Call Extension action that sends the caller to one extension, and choice 2 under the Caller Makes Choice action be another Call Extension action that sends the caller to another extension. In addition, you could specify the default and time-out actions for the Caller Makes Choice action to be a Call Extension action that sends the caller to a live operator.</p>  |
| Caller Enters Extension | <p>Play one or more optional messages, then wait for the caller to enter an entire extension number.</p> <p>An audio message that varies with the extension will be played before the call is transferred if an appropriate audio file is present. The audio message should be placed in a file named <code>&lt;NNN&gt;.au</code>, where <code>&lt;NNN&gt;</code> is the extension number to which the call is being transferred. For example, if the caller is being transferred to extension 305, then an audio file named <code>305.au</code> should be located in the auto attendant message file area. If an appropriately named file is not found, then the call is silently transferred to the designated extension.</p> <p>A time-out time and time-out action will also have to be defined in case the caller does not enter an entire extension.</p> |
| Caller Makes Choice     | <p>Play one or more optional messages, then let the user make a choice (Press 1 for Sue, 2 for Bill...). Note that this type of action will create a sub-tree (another indented level) of its own below it, allowing you to define the action to be taken when 1 is pressed, 2 is pressed, etc. A default action, a time-out time, and time-out action must also be defined.</p>   |

TABLE 5-1: **Auto Attendant Action Menu Selections**

|                                   |   |
|-----------------------------------|---|
| Callers Enters Rest Of Extension  | <p>The auto-attendant will wait for the caller to enter the rest of an extension number. Assumes the previous action in the tree was a “Caller Makes Choice” action, and that no extension in your configuration starts with the same digit as the choices defined as “Caller Enters Rest of Extension” actions.</p> <p>For example, if all extensions in your configuration start with a 1, 3, or 5, then you could define the actions for choices 1, 3, and 5 in a “Caller Makes Choice” action as “Caller Enters Rest of Extension” actions, then define other actions for the other choices (2, 6 through 9, etc.) in the “Caller Makes Choice” action.</p> <p>An audio message that varies with the extension will be played before the call is transferred if an appropriate audio file is present. The audio message should be placed in a file named &lt;NNN&gt;.au, where &lt;NNN&gt; is the extension number to which the call is being transferred. For example, if the caller is being transferred to extension 305, then an audio file named <b>305.au</b> should be located in the auto attendant message file area. If an appropriately named file is not found, then the call is silently transferred to the designated extension.</p> <p>A timeout time and timeout action must be defined for each “Caller Enters Rest of Extension” action in case the caller does not enter the rest of an extension.</p> |
| Dial By Name                      | <p>The caller is prompted to enter the keypad keys associated with the persons first or last name, until recognized. The names used correspond to the names of the Extensions in the current configuration. See the discussion at <b><i>Dial By Name</i></b> below for further details.</p>   |
| Call Distribution                 | <p>Play an optional message, then send calls to a group of extensions, such as an entire sales department. This choice is used to set up automatic call distribution (ACD), and allows for other features such as special reassurance messages to be played at various intervals (“We are sorry for the delay, and will be with you as soon as possible.”).</p>   |
| Dial Tone                         | <p>Route the call directly to an inside dial tone.</p>  |
| Jump to Previous Level in Branch  | <p>Play an optional message, then jump to a previously-encountered spot in the decision tree (perhaps sending the caller back to the top of the tree or looping to repeat the last set of choices if an invalid choice is made). Levels are number from 1 (top), 2 for the next level under the top, etc. Each level is indented to the right on the graphical display for clarity.</p>   |
| Disconnect Caller<br>IVR Features | <p>Play an optional message, then disconnect (hang up) on the caller.</p> <p>One of a number of executable programs can be run to for IVR type features. Each IVR program is documented in AdminTool. See the Execute Program Option below for details.</p>   |

TABLE 5-1: Auto Attendant Action Menu Selections

## Call Extension

The Call Extension option causes the call to be directly transferred to an extension number as entered in the space provided, after one or more option messages are played. The program page appears as follows: One

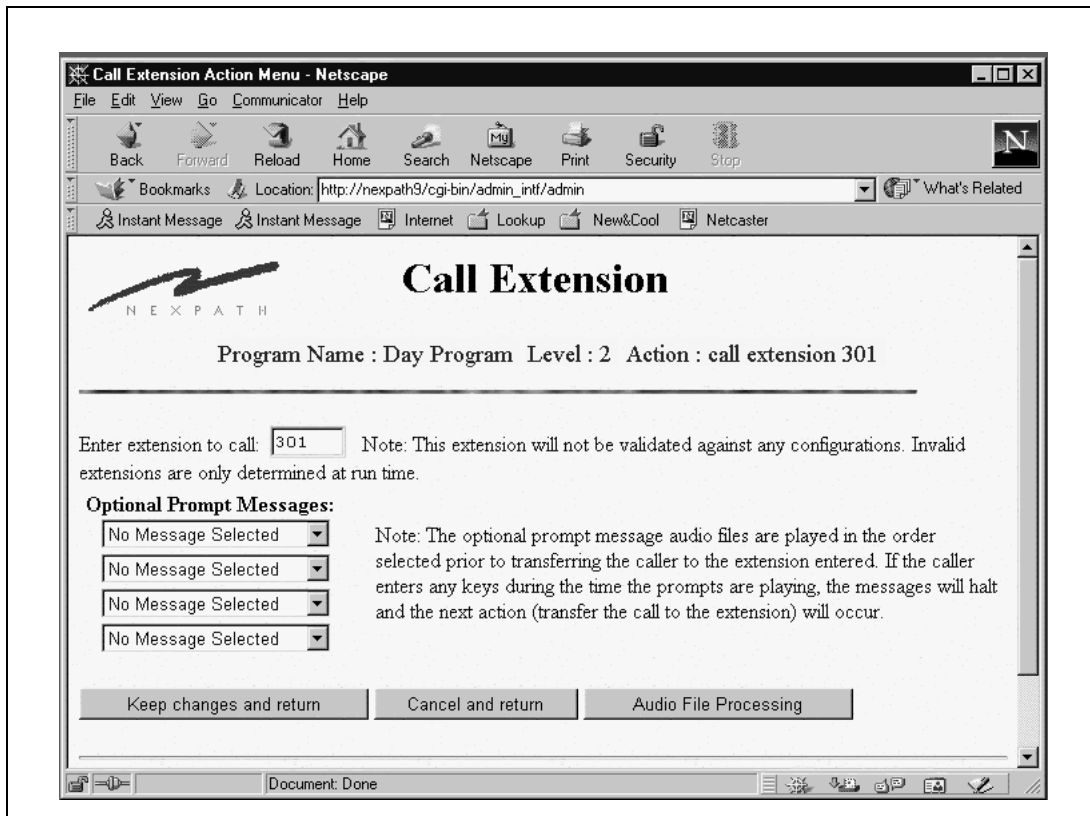


FIGURE 5-4. Call Extension Action in Auto-Attendant

or more optional messages can be played prior to transfer by selecting them in the four selector boxes avail-

able on this page. To record new messages, click on the **Audio File Processing** button, and proceed as described in “Automatic Fax Detection” on page 129. Then return to this page and select the message in the Optional Prompt Messages selector boxes.

Any valid extension may be entered for the Extension to Call, including Speed Dial Extensions, Voice Mailbox Extensions, and other Auto-Attendant extensions. The latter is a method of chaining auto-attendants together.

## Caller Enters Extension

The Caller Enters Extension action causes the system to play one or more optional prompt messages, then wait for the caller to enter a three digit extension. A time-out time is entered on this page, and a Timeout action must be defined, by returning to the Select Action page, and clicking on the **Timeout** button under this button.

The optional prompt messages to be played before the caller enters the extension are selected in the Optional Messages selector boxes. The caller can enter the extension number at any time during the prompt message; after the first touch tone is detected, the message will stop and the system waits for the remaining digits in the extension.

An audio message that varies with the extension can be played after the extension is entered and before the call is transferred, if an appropriate audio file is present in the auto-attendant message file area. The audio message should be placed in a file named `<NNN>.au`, where `<NNN>` is the extension number to which the call is being transferred. For example, if the caller is being transferred to extension 305, then an audio file named `305.au` should be located in the auto attendant message file area. If an appropriately named file is not found, then the call is silently transferred to the designated extension.

The Caller Enters Extension programming page appears as follows:

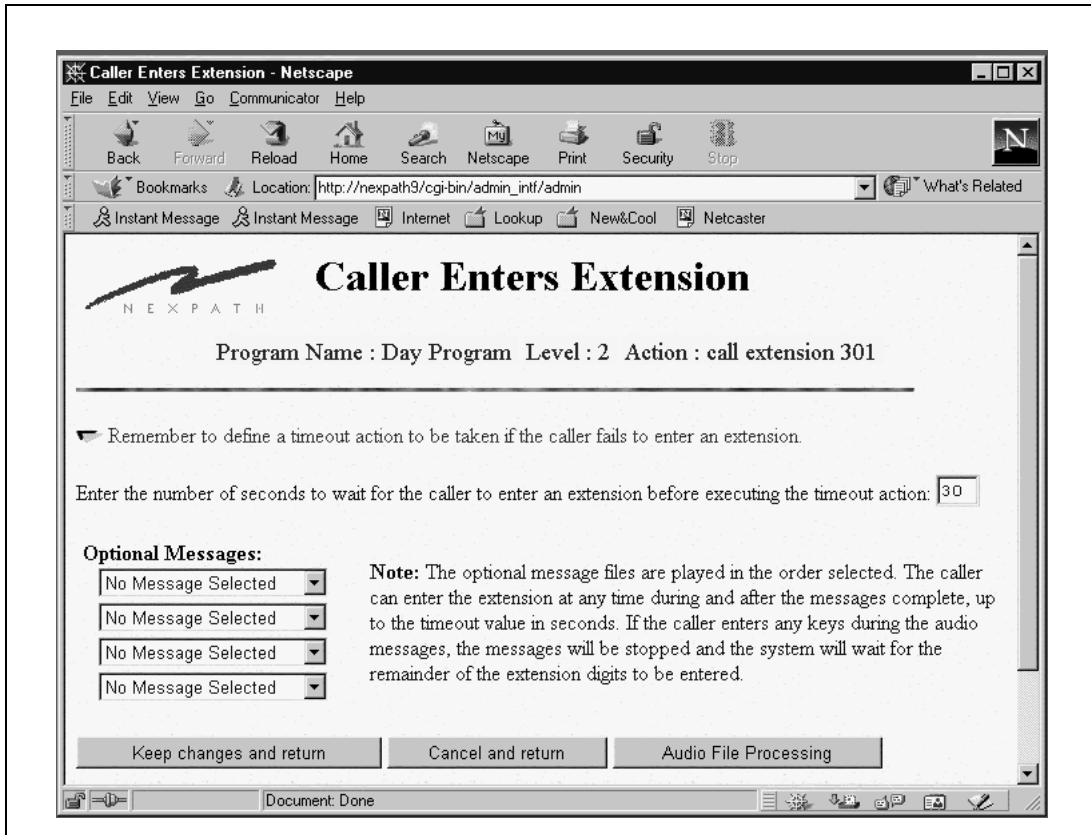


FIGURE 5-5. Caller Enters Extension Action in Auto-Attendant



## Caller Makes Choice

The Caller Makes Choice action item plays one or more optional messages, and allows the caller to enter one of the twelve keypad digits. The NexPath Telephony Server will then take an action that depends on the digit entered.

The Caller Makes Choice action item appears as follows: Digits that are valid to be entered are checked in

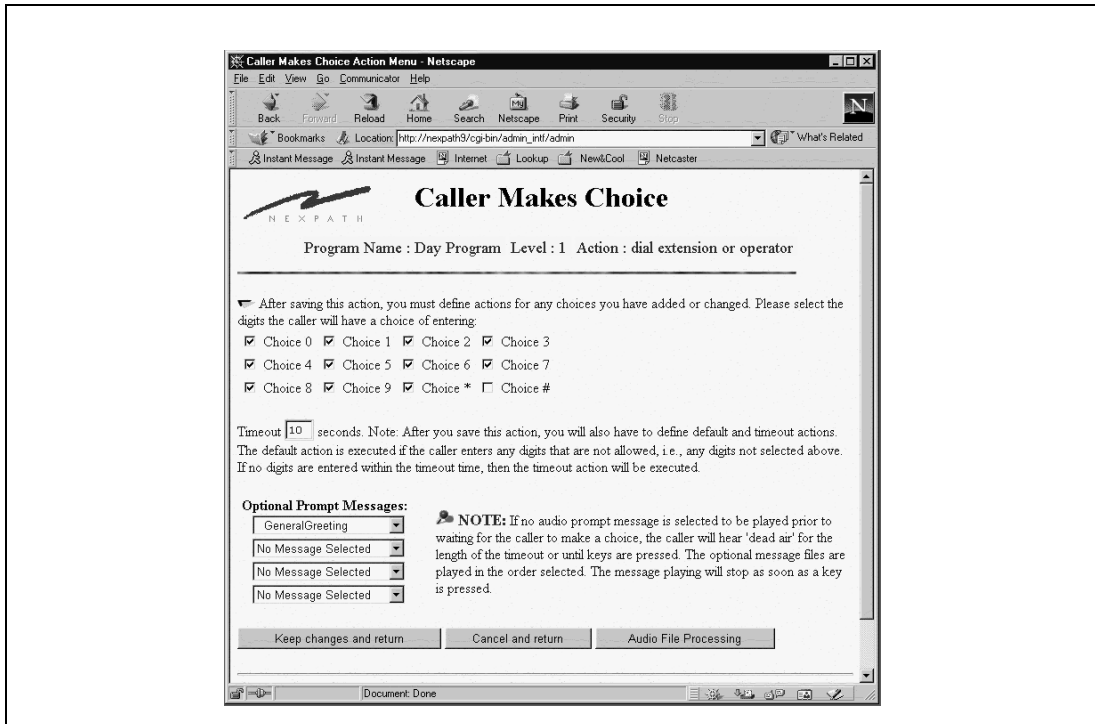


FIGURE 5-6. Caller Makes Choice Action in Auto-Attendant

the appropriate checkboxes. A timeout value, representing the time that the caller has before the system will transfer to the Timeout action, must also be entered. The optional prompt messages are selected in the selector boxes at the lower portion of the page.

The caller may enter the digit at any time, and the system will stop the audio as soon as a digit is detected, and take the action that is programmed.

When a Caller Makes Choice action is selected, buttons are placed on the Select Action page for each digit checked in the check boxes. Additionally, a Default button and a Timeout button are also created. The Default action is the action the system takes if a key is depressed by the caller that is not one selected as valid in the checkboxes on the Caller Makes Choice page. Both the Default action and the Timeout action must be specified or the system will consider it a program error.

The Caller Makes Choice action can be a sub-action under other levels. The sub-action nature is indicated by indenting the button array under the button above it. Up to eight sub-levels can be programmed using the **AdminTool™** graphical viewing program.

### Dial Tone

The Dial Tone action gives the caller inside dial tone. No messages are played. Many system administrators do not use this feature since it is a security issue. A caller can otherwise get to inside dial tone by getting into voice mail (using a password), and then exiting voice mail by entering the exit voice mail key. See the chapter ***Voice Mail*** starting on page 51 of the *Users Guide*. In this manner, a caller cannot get to inside dial tone without a password.

### Disconnect Caller

This action will cause the system to play one or more optional messages, and then disconnect the caller.

### Dial By Name

Auto-attendant programming includes a dial by name option. There are only two selections in this option, the choice of dialing by first name or by last name. Dial by Name can be selected as one of the options in auto-attendant programming, at **Auto-Attendant -> Edit -> Select Action** (click on one of the levels buttons) -> **Action Menu** in **AdminTool**. Click on the **Dial by Name** radio button and then on **Continue with Edit**.

**Note** The Dial by Name auto-attendant program tree is created each time the configuration is activated, and is derived from the names of the **Extensions**, not the user names. The extension names, as they appear in the system phonebook, can be modified in **Edit Configuration -> Extensions**.

The dial by name menu has only two selections, dial by first name or dial by last name, and is displayed as follows:



FIGURE 5-7. Dial by name in Auto-Attendant

The dial by name auto-attendants can be viewed individually by looking at the auto-attendant programs `firstNameFirst`, and `lastNameFirst`. These are read only files and cannot be changed. They are regenerated each time the system is activated, based on the names of the extensions in the configuration file

being activated. If you would like to customize the dial by name auto-attendants, you can copy them to a name of your choice and open them for edit.

The first name as identified by the dial by name algorithm is the first word of the extension name as it appears in the system phone book. The last name is the last word of the extension name. Words are separated by spaces. Characters in the middle are ignored. Extension names that are *not published* in the phonebook *do not appear* in the dial by name tree. See “Inside Line Extensions” on page 45 for information on publishing extensions in the system phonebook.

When the configuration is first activated, the name that is announced by the system in the dial by name auto-attendant for each extension is synthesized from the extension number. It is stored in a file named “**dial nnn**”, where “nnn” is the extension number (e.g., 302). You can record the person’s actual name, and any other audio announcement for that extension for the dial by name auto-attendant, by recording over the “dial nnn” audio file. This is done in **Auto-attendant -> Audio Processing**. Once this file has been recorded, the system will not overwrite it, unless a new Short Name is recorded in a voice mail box that it forwards to. For more details on the Short Name, see [Recording a short name](#) on page 60 in the chapter [Voice Mail](#) in the *User’s Guide*.

## Jump to Previous Level

The Jump to Previous Level action will cause the system to continue processing at a different point in the auto-attendant tree, at a previous level above the one it is presently at. One or more optional messages can be played prior to jumping to the previous level. Levels are numbered, beginning at one for the root level, and incrementing by one at each level below the top level. Each level is indented to the right on the graphical display, for visual clarity.

---

**Note** Keep any messages played in the **Jump to Previous Level** action very brief! If the caller enters a keypad key during this message, the message will stop playing and processing will continue at the Jump point. The key entered will be otherwise discarded. This can be confusing behavior to the caller, and can be avoided by keeping the optional prompt message very brief for this action.

---

The Jump to Previous Level programming page appears as follows:

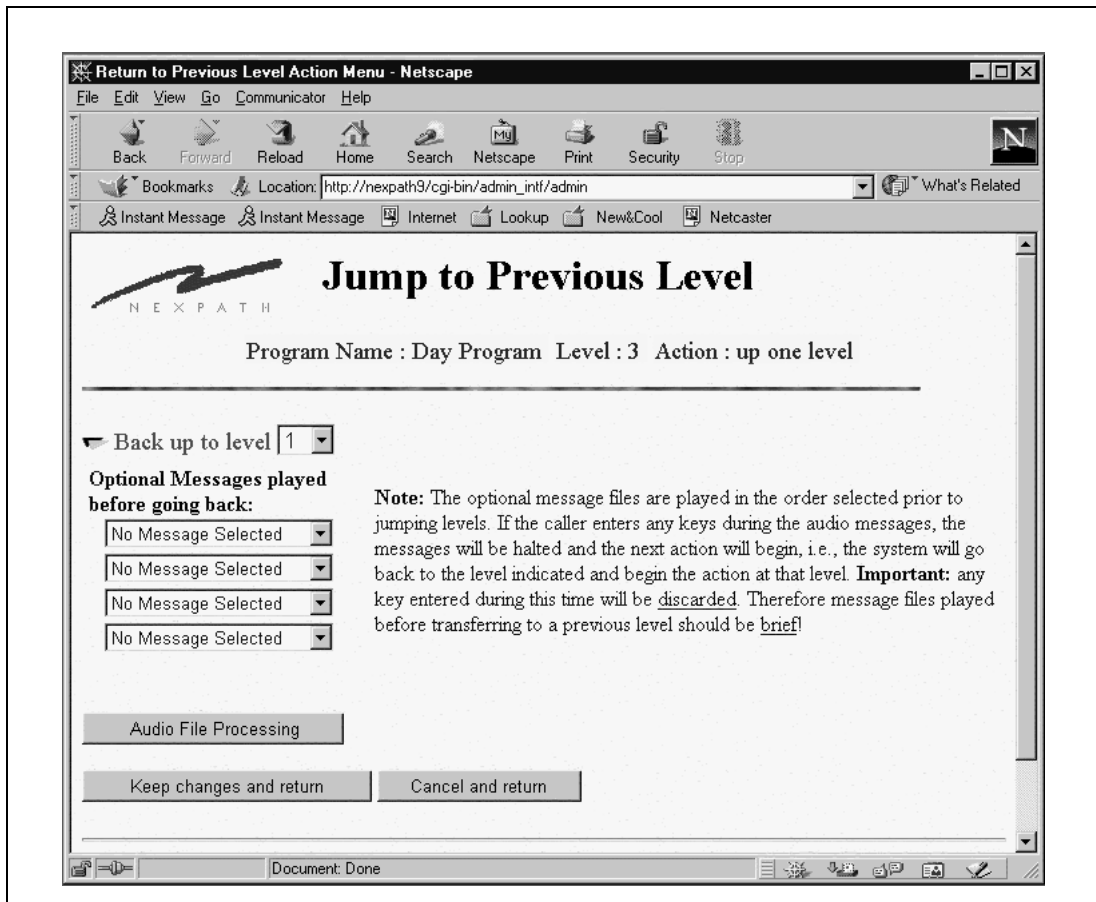


FIGURE 5-8. Jump to Previous Level in Auto-Attendant

## Call Distribution

Call Distribution, also known as ACD (Automated Call Distribution) is one of the choices in the radio button menu items under **Action Menu**, which is entered from **AutoAttendant** -> **Auto-Attendant Administration** -> **Edit** -> **Select Action Menu**, from the main **AdminTool™** Menu.

Call Distribution allows a group of extensions to be designated as a distribution group, and calls to this group will ring each phone until an agent answers, or the call will be “put in the queue” and reassurance messages played while the caller is waiting.

The following is a discussion of ACD on the NexPath Telephony Server, with an explanation of features and clarification of ACD operation.

1. By default, if a call comes into a distribution group, and rings an available extension, and the extension does not answer within the programmable ring time-out, then this extension will not be tried again *for this call*. This extension (and any other ring-no-answer extensions) will be removed from the group for this call only. The next incoming call will try all extensions in the group again, and the process repeats for future inbound calls. If, for a given call, all extensions are ring-no-answer, then the call will immediately go to voice-mail, if the group has been configured for voice mail, or, it will be disconnected. This process is referred to as Dynamic Group Queuing.

This mode of operation can be overridden if the **Stay in List on RNA** (see below) option is selected. With the **Stay in List on RNA** option selected, each available extension will be rung until the ring time-out (if not answered), then they will be tried again. This process will repeat over and over until the queue timeout is reached, at which point the call will either go to voice mail or be disconnected, depending on the options selected. By default, the **Stay in List on RNA** is not selected.

---

**Note** If an extension in the group rings without an answer, and it is forwarded, then the extension to which it is forwarded will also be rung before trying the other extensions in the distribution group. If an extension is set to Do Not Disturb, both it and its forwarded extension are removed from the group.

---

2. At least one extension must be busy, for a call to go into the queue. If all extensions are ring no answer, or all have been set to Do Not Disturb, then the call will go to voice mail, if configured for voice mail, or the call will be disconnected.
3. Total queue duration and reassurance message separation times are programmable in seconds. This gives users fine control over distribution group programming. The time between reassurance messages is measured from the beginning of the message, and therefore does not include the message length. If the

reassurance message separation time is less than the message length, the the next reassurance message will play immediately. Reassurance messages play to completion before available extensions are examined. Playing is not interrupted if an extension becomes available while a message is playing.

4. A caller can opt out of the waiting queue at any time by pressing **[0]** to reach the system operator, or **[\*]** to reach voice mail, if voice mail has been configured for the group.
5. The pickup group keypad sequence, **[\*][0]**, can be used to pickup calls in distribution groups. If a call enters a distribution group, and rings an extension that is part of a programmable ring group *n*, then the user can pickup the call from any phone by entering **[\*][0]**, followed by the single digit representing the group number.
6. An extension is removed from the distribution group by placing it in the Do Not Disturb mode. This is done with the keypad sequence **[\*][9]**, followed by the extension and a valid password. Do Not Disturb can also be set from **NexDial**, **NexDirector**, or from **TelOper**. When an extension is removed from the distribution group, its forwarding extension is also removed.
7. When a caller exits the queue based on a queue time-out, the Time-out Exit Message is played. If voice mail has been configured, then the Time-out Exit Message functions as the voice mail greeting. Recording commences immediately after the Time-out Exit Message (followed by a beep). If voice mail has not been configured, the caller will be disconnected after the Time-out Exit Message has been played. The regular voice mail box greeting is not played when the call enters from ACD.
8. When a caller exits the queue based on pressing a **[\*]**, the Star Exit Message is played. The caller can only exit the queue with Star Exit if voice mail has been configured. In this case, the Star Exit Message functions as the voice mail greeting. Recording commences immediately after the Star Exit Message is played (followed by a beep). The regular voice mail box greeting is not played when the call enters from ACD.

Call Distribution programming is more involved than other actions in the auto-attendant. The following two figures show the programming options for Call Distribution:

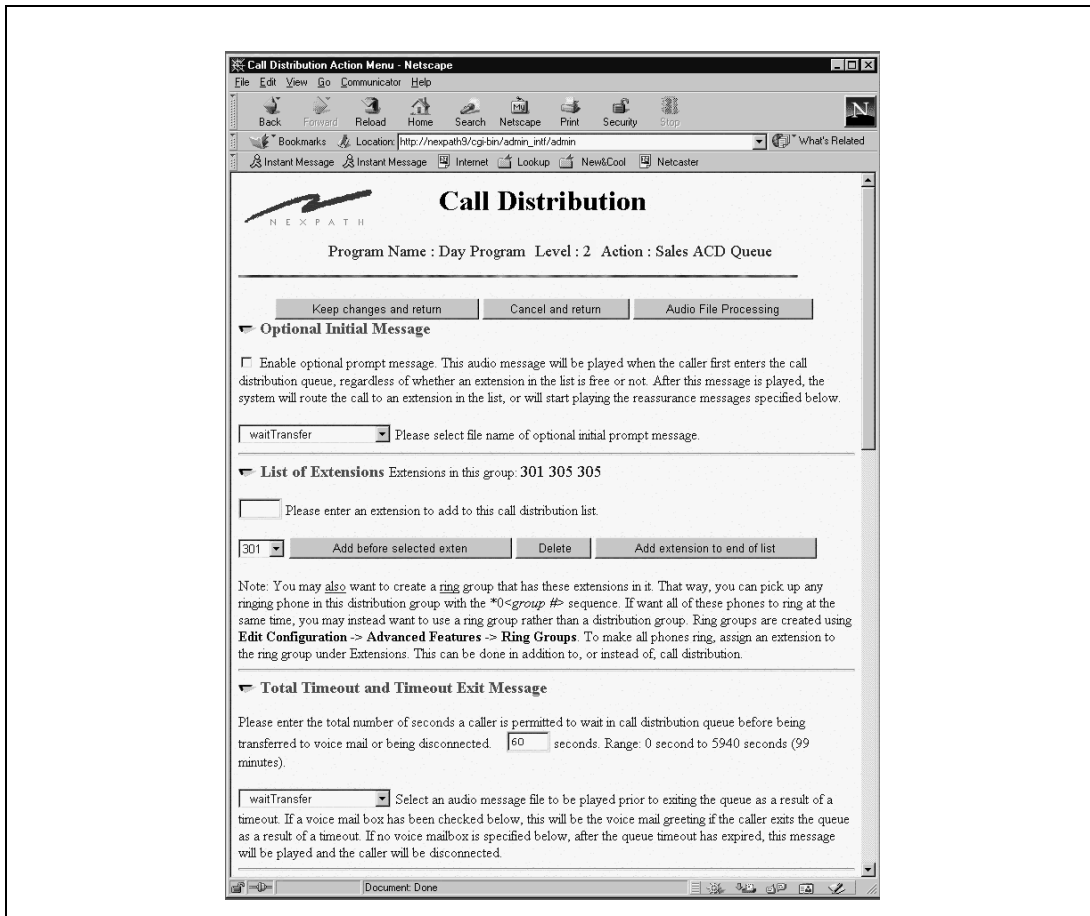


FIGURE 5-9. Call Distribution Options in Auto-Attendant

To play an initial message when the call first enters the distribution group, check the check box and select



the message to be played in the selector box. This message will be played when the caller first enters the call distribution group, regardless of whether an extension in the list is free or not. After this message is played, the system will route the call to an extension in the list, or will start playing the reassurance messages specified on this page.

Extensions are added by entering the values in the text box and clicking the **Add Extension To End** (or **Add Before Selected Extension**) button. Valid extensions are regular inside line extensions or extensions that ring a ring group. Outside line extensions, park orbits, speed dial extensions, and voice mail boxes are not valid extensions for an ACD group.

A total Timeout value should be entered, which is to total time that a call can be waiting in the queue, before it is sent to voice mail or disconnected as described above.

Voice mail is configured for the distribution group by checking the checkbox, and entering a valid voice mail box extension. A voice mail greeting message should be selected, as the regular greeting for the voice mail box is not played when the call enters the voice mail box from an ACD group. .

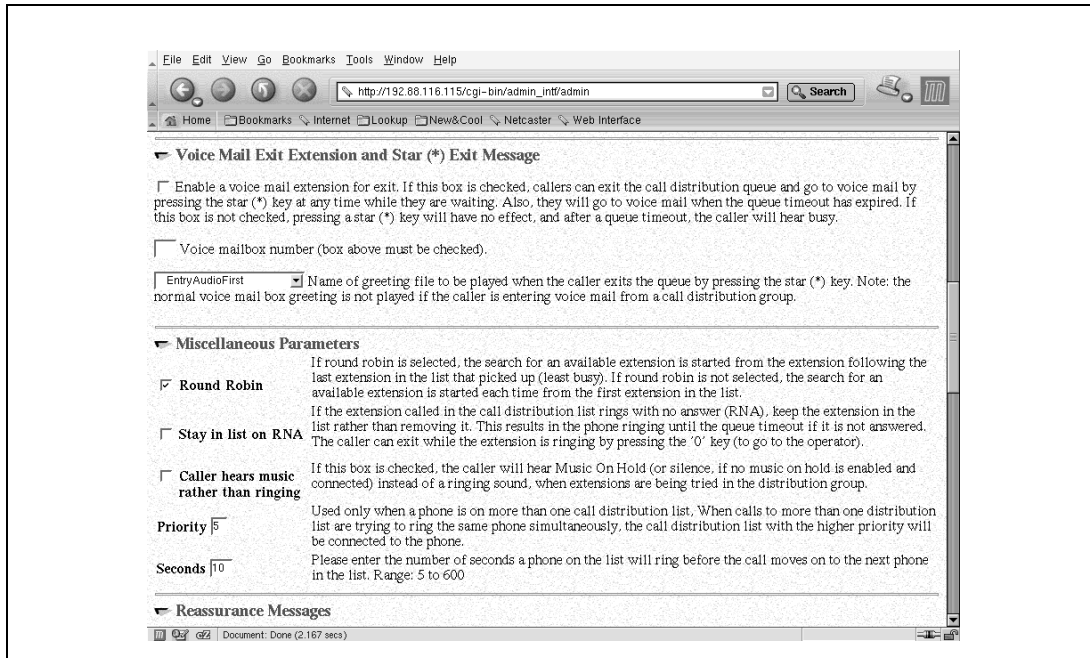


FIGURE 5-10. Further Call Distribution Options in the Auto-Attendant

## Miscellaneous Parameters

The checkbox under **Miscellaneous Parameters** determines the type of distribution statistics for distributing the call among the extensions in the group. If **Round Robin** is selected, the search for an available extension is started from the extension following the last extension in the list that received a call (least busy). If **Round Robin** is not selected, the search for an available extension is started each time from the first extension in the list.

You can select **Stay in List on RNA** (Ring No Answer), which will cause an extension in the list to be continually tried until someone answers. If you select this option, it is important that users in the extension list log out (set extension to Do Not Disturb) before leaving their desk, since their extension will continue ringing until the queue timeout otherwise. By default, the **Stay in List on RNA** is not selected.

If you check the checkbox **Caller hears music rather than ringing**, then as each phone in the extension list is called, the caller will continue to hear hold music (from the music on hold input) rather than a ringing (i.e. ringback) tone. By default, this is not checked and the caller hears ringing. Note that if you do not have a music source connected to the music on hold input, or no outside line is designated as a music on hold input, then the caller will hear silence if this option is checked.

A **Priority** number can also be entered, for overlapping distribution groups. When a phone is on more than one group list, the group with the higher **Priority** number will receive the call. If you are not sure what to set this to, then keep the default of 5.

A **Time** value (in seconds) for the ringing duration of each phone must be entered. This is the length of time that a phone in the group will ring before the next extension in the group is tried.

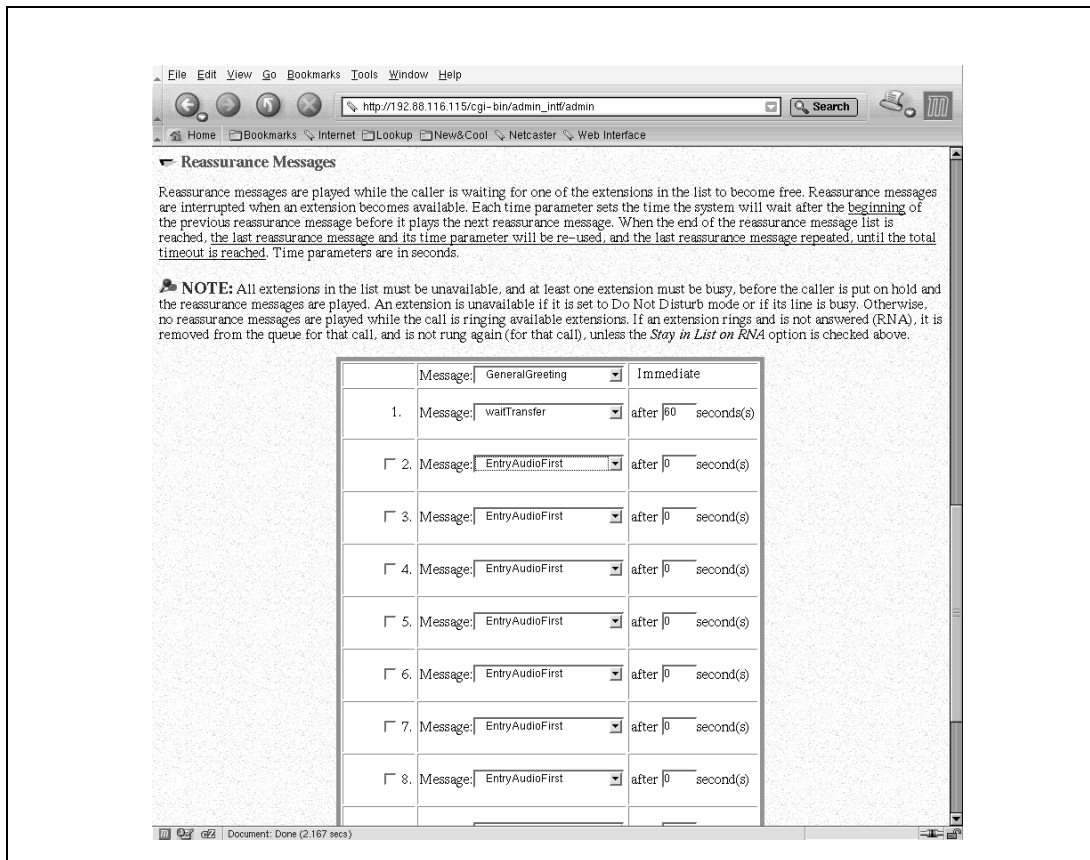


FIGURE 5-11: Reassurance message options in Call Distribution

**Reassurance** messages are played while the caller is waiting for one of the extensions in the list to become free. Each time parameter sets the time the system will wait after the beginning of the previous reassurance message before it plays the next reassurance message. When the end of the reassurance message list is reached, the last reassurance message and its time parameter will be re-used, and the last reassurance mes-

sage repeated, until the total timeout is reached. Time parameters are programmed in seconds. Each ring of a standard cadence ring is 5 seconds.

Reassurance messages "immediate" and #1 are required. A valid message must be selected for these two, along with a wait time for message #1. The next 9 reassurance messages are optional, and are not selected, unless the checkbox is checked next to the entry.

Note that a call is put into the queue, and reassurance messages played, only if at least one extension in the group is busy. If all of the extensions ring with no answer, or all extensions are set to Do Not Disturb, then the call is sent to voice mail, if voice mail is configured for this group; otherwise the call is disconnected.

While a call is waiting in the queue, and while reassurance messages are not playing, hold music is played to the call, if hold music has been configured for this system.

When programming for this page is completed, click on **Keep Changes and Return**, at the top of the page, to save your settings.

## IVR Features: Execute Program

The IVR Features option leads to the Execute Program page (see Figure 5-13 on page 127), which provides several executable programs that implement special features available from the automated attendant. As of the printing of this manual, these are listed below. In addition, you can edit route tables from this page, by clicking **Edit Route Tables**, which will

Other IVR Feature programs may be added in future updates of the software. Check the Execute Program page in AdminTool for the latest information.

## Centrex transfer

The caller is prompted to enter a 7 or more digit phone number, followed by the pound sign key (#). The NexPath system will then transfer the caller to the number that was entered, using hook flash transfer techniques. The CO line must be a Centrex line (or a line that allows hook-flash transfer with disconnect), for this operation to work. The NexPath Telephony Server will drop out of the call. The caller will be disconnected if they are on an inside line, or any line type other than Centrex. **Warning:** This transfer technique is not subject to any security or checking for long distance calls. Use at your own risk.

## Announce Caller ID

The Caller ID of the calling line is synthesized and announced, if it is available. For inside lines, this is the extension number. For outside lines, it is the caller ID received from the telco. After the announcement, the call is disconnected.

## Route by Caller ID

Inbound calls can be routed to extensions based on the caller ID of the call, using a caller ID routing table. The Caller ID Routing Table can be created and modified by clicking the **Edit Route Table** button. With Release 7, multiple route tables can be created, and used in a variety of automated attendants. Although route tables can be used at any level in the auto-attendant, they are most commonly used at the first level, to route a call upon entry to the auto-attendant.

Using the Route Table Editor, to Edit a route table, select it in the selector list and click Edit. To add a new route table, provide a file name, and then click Add New. A blank table file will be created and opened for editing. You can similarly Copy a route table file to another, or Delete a route table file.

New lines can be added by filling in the line at the bottom of the table, and checking Add Before or Add After checkbox, selecting a line number, then clicking either Commit Changes or Add/Delete/Update (both do the same thing).

Similarly, any line in the route table can be deleted, or edited on the screen, followed by clicking Add/Delete/Update or Commit Changes.

The Route Table Editor can also be accessed from the Auto-Attendant Administration page.

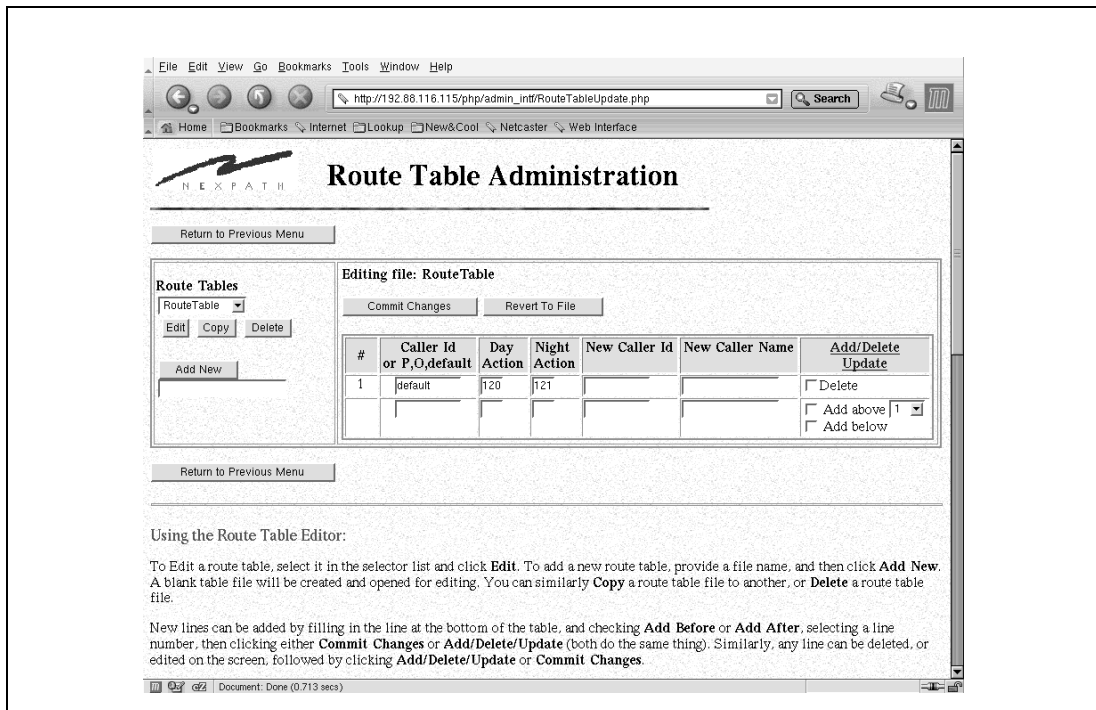


FIGURE 5-12:

On the NexPath Telephony Server, the Caller ID Routing Table is a text file with one routing entry per line. Fields in each line are separated by commas. The entries are searched in order from the top of the file, comparing the inbound Caller ID with the phone number or phone number expression in the first column (field). When a match is found, the caller is transferred to the extension in the second column (Day Mode), or third column (Night Mode), depending on the Day/Night mode. If there is no match, the entry labeled `default` is used. If there is no `default` entry, the last entry is treated as a default entry. Typically, the default would point to the standard company Day and Night auto-attendant typically `x120` and `x121`.

Changes to the Caller ID Routing Table take place after a re-activation.

**Note** If you use the web page routing table editor, you do not need to be concerned about the comma separators. These are only important if you are importing or exporting the file onto or off of the NexPath Telephony Server.

The fields in the Caller ID Routing Table are defined as follows:

| Field Number | Description  |
|--------------|--|
| 1            | Phone number (10 digit) or p/P or o/O or "default". P is private caller ID, O is out of area or unknown. "default" is used if there is otherwise no match. Simple regular expressions are also supported. See below. |
| 2            | Extension to transfer to if there is a match, for the day mode. Cannot be null   |
| 3            | Extension to transfer to if there is a match, for the night mode. Cannot be null.  |
| 4            | 10 digit phone number to change the Caller ID phone number to; empty means no change.  |
| 5            | Up to 15 character caller name to change the caller name to; empty means no change   |

TABLE 5-2: Caller ID Routing Table Fields

The first field, the phone number field, can contain simple regular expression syntax. Regular expressions are a rigorous method of specifying variable matching, used widely on Unix systems. The most useful expressions are a dot ("."), which matches any single character, and a selection or range enclosed in brackets. For example [0-9] matches any single numeric digit, and [OoPp] matches any one of P or p or O or o. Some examples are given below:

Examples of regular expression syntax that can be used in the Caller ID Routing Table:

|  |                             |
|--|-----------------------------|
| 408.....,666,666,, "Area 408 Call"   | Matches any area 408 call   |
| [0-9] [0-9] [0-9] 748 [0-9] [0-9] [0-9] [0-9] ,120,121,, "748 Exchange Call" | Matches a 748 exchange call |



408235....,300,300,4082358916,"NexPath Sales Call"

Matches any call of the form (408) 235-nnnn.

[PpOo]

Matches any Private or Out of Area Call.

Other examples and documentation can be found on the **Route Table Administration** page.

The Execute Program page in the auto-attendant appears as show below:

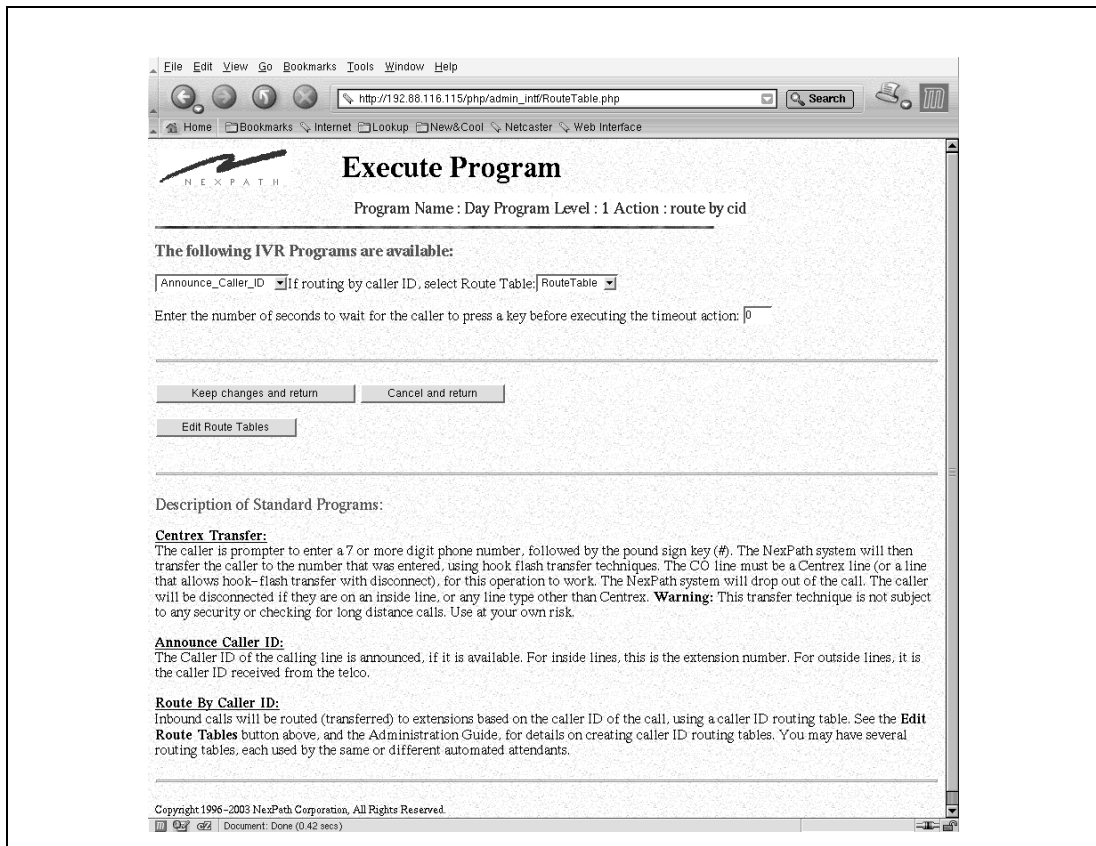


FIGURE 5-13: Execute Program Option in Auto-Attendant

### *Example: Re-creating the default auto-attendant program*

The steps necessary to re-create the default auto-attendant follow. For details on what it is you are creating, see the default auto-attendant information that appears in the appendix of this manual that is appropriate for your system.

1. Click on **Auto-attendant** in the AdminTool menu.
2. Fill in the auto-attendant name as “default”, then click **Add New**. This will bring up the Select Action page.
3. Click on **Root - (UNDEFINED)**. This will bring up the Action Menu page.
4. Rename the action TOP LEVEL, click on the **Caller makes choice** checkbox, then click **Continue with edit**. This will bring up the Caller Makes Choice page.
5. In the Caller Makes Choice page, click **Choice 1**, then click the **Enable optional prompt message** box and select GeneralGreeting from the pull-down list. Alternately, you can use the functions under the **Audio File Processing** button to create a new greeting, saying something like, “Thank you for calling the XYZ Corporation. If you know the extension you wish to reach, enter it now, or stay on the line and your call will be transferred to the operator.”
6. Click on **Keep changes and return** in the Caller Makes Choice page. You will be returned to the Select Action page, but now actions for choice 1 will be available for editing, along with default and timeout choices.
7. Click on **Choice 1 - UNNAMED** in the Select Action page. This will bring up the Action Menu page again.
8. In the Action Menu page, change the action name to CALL 301, click the **Call extension** box, then click on **Continue with edit**. The Call Extension page will appear.
9. Fill in the extension to be called with 301, then click on **Keep changes and return**.
10. Repeat steps 5 through 9, enabling choices 2, 4, 6, 7, and 8, naming and defining the actions as appropriate for extensions 302 through 308. Choices 3 and 5, along with the default and timeout actions, will be handled next.
11. In the Select Action page, click on **Choice 3 - (UNDEFINED)**, then enter a name of ENTER EXT, select an action type of “caller enters the rest of the extension”, and click on **Continue with edits**. This will bring up the Caller Enters Rest of Extension page, which allows you to define a timeout time. Leave the value at 30 seconds and click **Keep changes and return**.
12. Name the timeout action under Choice 3 as TO TOP, then select the “Jump to previous level in branch” action and click **Continue with edit**.

13. Set the level to back up to as level 1 in the Return to Previous Level page that appears, and use Audio File Processing to record a new prompt saying something such as “Keypad entry time limit has been exceeded.” Click on **Keep changes and return** in the Return to Previous Level page.
14. Repeat steps 11 through 13 for choice 5, but specify a name of ENTER VMB for the action.
15. Enter an action name of TO OPERATOR for both the default and timeout actions at the root level, select the “call extension” action type and specify the extension to be dialed as 300 for both.
16. Use the **View Auto Atten errors** button in the Select Action page to see if your program is ready to be saved. Correct any errors listed, then save your auto-attendant by clicking on **Keep changes and return** in the Select Action page.

---

**Note** See “Associating an auto-attendant program with a configuration file” on page 88 for details on how to associate this auto-attendant with your current configuration. You can also upload your auto-attendant program to a local PC for safe-keeping using the functions described in “Uploading and downloading files from the NTS server” on page 91.

---

## *Automatic Fax Detection*

You can enable your NexPath Telephony Server to automatically detect a fax call, and then transfer the call to the extension where your external fax machine is connected. Fax detection is done with an automated attendant, and enabled by checking the checkbox at the top of the Select Action Menu (See Figure 5-2, “Default Auto-attendant Select Action Menu,” on page 102). Enter a valid extension in the **Fax Extension Number** entry box next to the checkbox.

Fax detection requires an additional ring time (5 seconds) to detect the fax protocol tone.

You may want to set the line that your fax machine is connected to, to automatically seize an outside line when going off hook. This eliminates the need for putting a 9 in front of all fax numbers. See *Line administration* on page 61 in the chapter *Software Configuration* for details in setting the action when an inside line goes off hook.

## *Recording Custom Greetings and Prompts*

The various audio files used by the auto-attendant are recorded using the **Audio Processing** section of **AdminTool™**, which can be accessed from **Auto-Attendant -> Audio Processing**, or from the **Audio Processing** button on any auto-attendant programming page that has custom messages.

Each audio file is recorded using any extension telephone. The extension number of this telephone should be the one you logged in with on the **AdminTool™** login page.

Using this page, as show below, you can record new audio files, re-record over old files, delete files, or copy one audio file to another. You can also listen to an audio file, using the **Play** button. Files are played over the telephone extension that you entered on the **AdminTool™** login page.

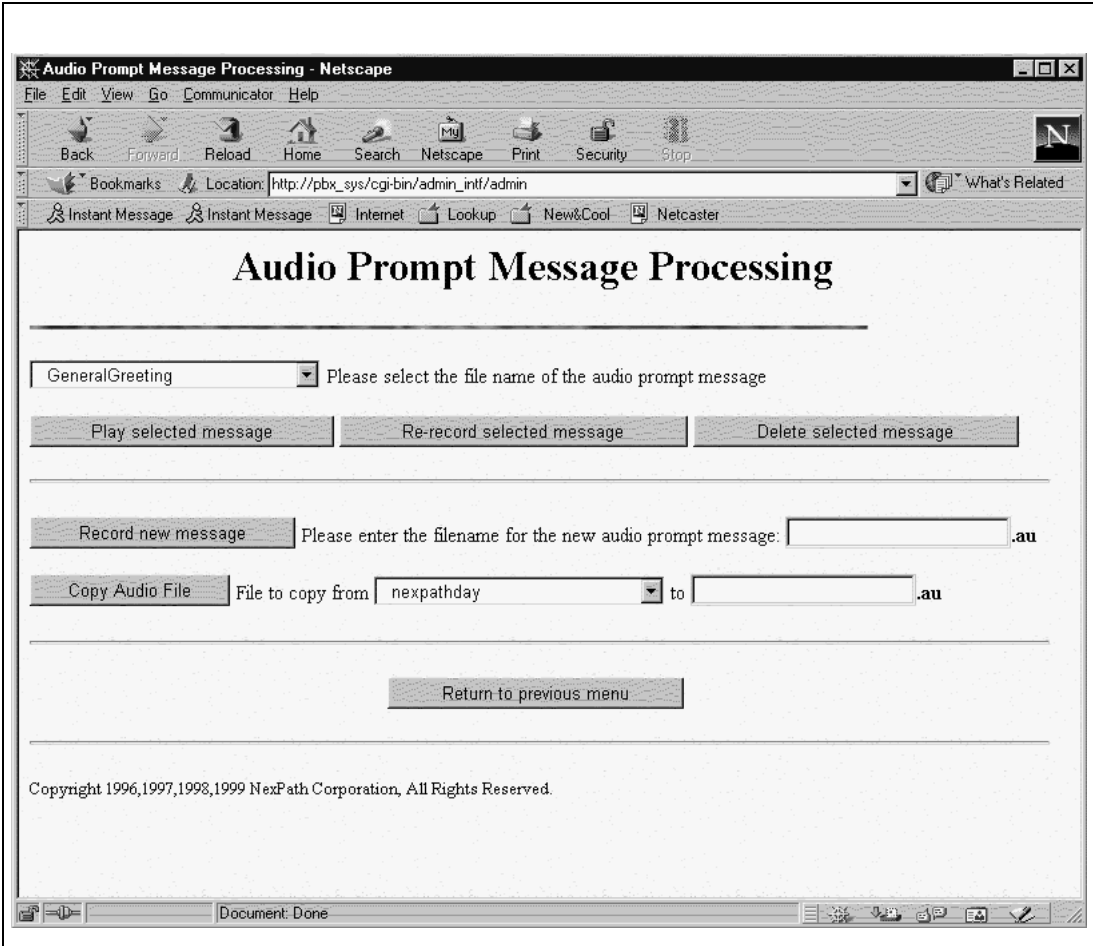


FIGURE 5-14: Recording your own prompts and messages.



# *Installing New Software Releases*

---

All new NexPath Telephony Servers come preloaded with the most current release of the NexPath software. Installing the Release 7 software package is only required when doing a software upgrade or an emergency restore. An upgrade or restore can be performed over a network connection from any Windows system that has both a CD-ROM drive and a TCP/IP connection to the NexPath Telephony Server.

Installation of the **NexDial** and **NexDirector** programs, and of the NexPath **InstallTool**, are done onto Windows network client machines using standard Windows installation techniques.

The NexPath Telephony Server Software Release 7 contains the following items:

- The Distribution CD-ROM
- A copy of the Software License Agreement
- One boot floppy for booting the NexPath Telephony Server
- A hardware license key (called a *dongle*) to install into the USB port (not used on some rack models)
- Printed documentation (optional)

To install or re-install the NexPath Server Software, you should use the floppy disk supplied with your system, or supplied with your software upgrade purchase, to boot the NexPath Telephony Server as described below.

To perform this installation you will also need:

- A Windows PC system with a CD-ROM drive, TCP/IP installed and a 10Base-T connection (10Base100 on some models) to the NexPath Telephony Server to be upgraded or restored.
- NexPath **InstallTool** installed on the Windows PC.
- An AT-style keyboard and a VGA-compatible monitor to connect to the NexPath Telephony Server.

### *The Software License Agreement*

Please read and agree to the Software License Agreement. NexPath software is not sold but is licensed for use. The Release 7 software package is licensed for upgrading or re-installing existing Nexpath servers only. If you do not agree with the license terms, please return the materials to NexPath or your dealer.



## The contents of the CD-ROM

The CD-ROM contains the following subdirectories and files:

|                                       |  |
|---------------------------------------|--|
| <b>\Release 7\BootFloppy</b>          | The NexPath Boot Floppy that came with the release can be recreated from these files by issuing the following commands from a DOS window, while located in this directory: "rawrite2 boot1.img a:". See the README files in this directory.  |
| <b>\Release 7\Ethernet</b>            | The files SETUP1.EXE and SETUP2.EXE in this directory can be used to determine the ethernet (MAC) address of any NexPath system.   |
| <b>\Release 7\Manuals</b>             | Contains Adobe Acrobat-compatible versions of all NexPath manuals and documentation  |
| <b>\Release 7\NexpathDialer</b>       | Contains a dialer application called <b>NexDial</b> <sup>™</sup> for Win95/98/WinNT that is similar to Microsoft's dialer, but has the features of the Nexpath system, such as hold, transfer, consultation transfer, and conferencing added. <b>NexDial</b> also provides desktop voice mail access as well. See the <i>Users Manual</i> for details. This program is to be installed on each network client. |
| <b>\Release 7\NexpathCallDirector</b> | Contains an operator's console application called <b>NexDirector</b> for Win95/98/WinNT that gives a networked PC the ability to view the state of the lines in the NTS Server, and the ability to transfer and intercept calls. This program is to be installed on each network client.   |
| <b>\Release 7\InstallTool</b>         | The Win95/98/WinNT utility for transferring and installing the NexPath server software over a network to a NexPath Telephony Server is contained in this directory   |
| <b>\Release 7&gt;Password</b>         | Files that can be used to change passwords for the <code>WWWadmin</code> user and the <code>update</code> user, as well as add a <code>root</code> password, are located here.   |
| <b>\Release 7\ServerSoftware</b>      | Contains a compressed version of the Release 7 software. This is the file that will be transferred to the NexPath Telephony Server when performing an NTS software install or upgrade.   |
| <b>\Release 7\Support</b>             | All factory-default configuration files are stored here. These can be used as the basis for custom configurations, or used to restore the factory default configuration is desired.  |
| <b>\Release 7\Tapi21</b>              | TAPI 2.1 driver for Win95/98 and Win2K/XP for interfacing to ACT!, Goldmine, Outlook, and other TAPI compliant dialer interfaces. Installation information is contained in the User's Guide in the chapter <b><u>Installing the NexPath TAPI 2.1 Service Provider</u></b> starting on page 135.  |

TABLE 6-1:

|                             |  |
|-----------------------------|--|
| <code>\OldReleases</code>   | Contains files for restoring previous software releases  |
| <code>\Mozilla</code>       | Contains installation files for the Mozilla web browser. |
| <code>\AdobeAcrobat5</code> | Adobe Acrobat Reader for Windows systems.                |

TABLE 6-1:

## *Determining your NexPath Telephony Server's Ethernet (MAC) address*

The Ethernet MAC address is listed on the console screen that is displayed on the NexPath Telephony Server when the system is operational, and can be viewed by connecting a VGA compatible monitor (software Release 3 versions and later). It is also present on the manufacturing label on the back of all systems manufactured after 2/1/2000. This number will be written separated by colons, such as **00:00:E8:23:33:00**.

**Ethernet Address:** \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_ : \_\_\_\_\_

For older systems, you can also find the MAC address on the DOS-compatible floppy that was created by the NexPath Telephony Server when the IP address was assigned, if you used the floppy method. The file ADDRESS.TXT on that disk contains the 12-digit MAC address associated with the ethernet card in your system. If that floppy disk is not available, and the NexPath Telephony Server is operational, follow the instructions in the chapter ***Network Installation*** starting on page 21 and make another floppy. Read the file ADDRESS.TXT with a DOS-compatible text editor to determine the Ethernet address.

The Ethernet MAC address is also listed on the *sysInfo* page in the browser, at the URL *http://<system name>/sysInfo/*. You must log in with a valid extension number, and a password that has administrator privileges, to view the system information page.

## *Making a backup of an existing system's configuration*

If you want to save the configuration information unique to your current system, which you very likely will want to do, follow the instructions given in the chapter ***Using BackupTool*** starting on page 147 before proceeding. This information will be needed to restore the configuration of your system after you've finished the installation of the Release 7 software.

Be sure to copy the backup file to another system before installing new software, as described in *Copying the backup file to your local computer* on page 153 in the chapter *Using BackupTool*. The software installation process completely re-partitions and re-formats the hard drive, and all information stored on the hard disk will be destroyed.

---

**Note** **BackupTool** was distributed with Upgrade 4 in the 1997 Releases. If you have an older version of software, install Upgrade 4 before you proceed so you can make a backup. All systems purchased in 1998 or later already have the **BackupTool** installed. **Important:** the URL for backup in the 1997 U4 release is *http://<system\_name>/backup.html*. Note the trailing *.html* is required in the 1997 version, but not used or required in later versions of the software.

---

## *Installing the NexPath Telephony Server software*

The process of installing the new release of the NexPath Telephony Server software first requires the installation of the NexPath **InstallTool** utility onto a Windows system.

---

**Note** The TCP/IP network protocol must be installed on the Windows system that is to be used, and a compatible IP address must be assigned to the Windows system.

---

1. Insert the NexPath Telephony Server Release 7 CD-ROM in the Windows system that will be used for the installation of the software onto the server.
2. Click on **Start**, then **Run**, then **Browse** and select the file *setup.exe* in the *Release 7\NexPathInstall-Tool* subdirectory of the CD-ROM. This utility will provide network services to inform the NexPath Telephony Server of its IP address and system name, and then, when requested by the NexPath Telephony Server, send it a file containing the new software.

- Once installed, start the InstallTool program by clicking on **Start**, then **Programs**, then **Nexpath Install-Tool**, then **InstallTool**. A NexPath Install Tool box will appear on your screen similar to below:

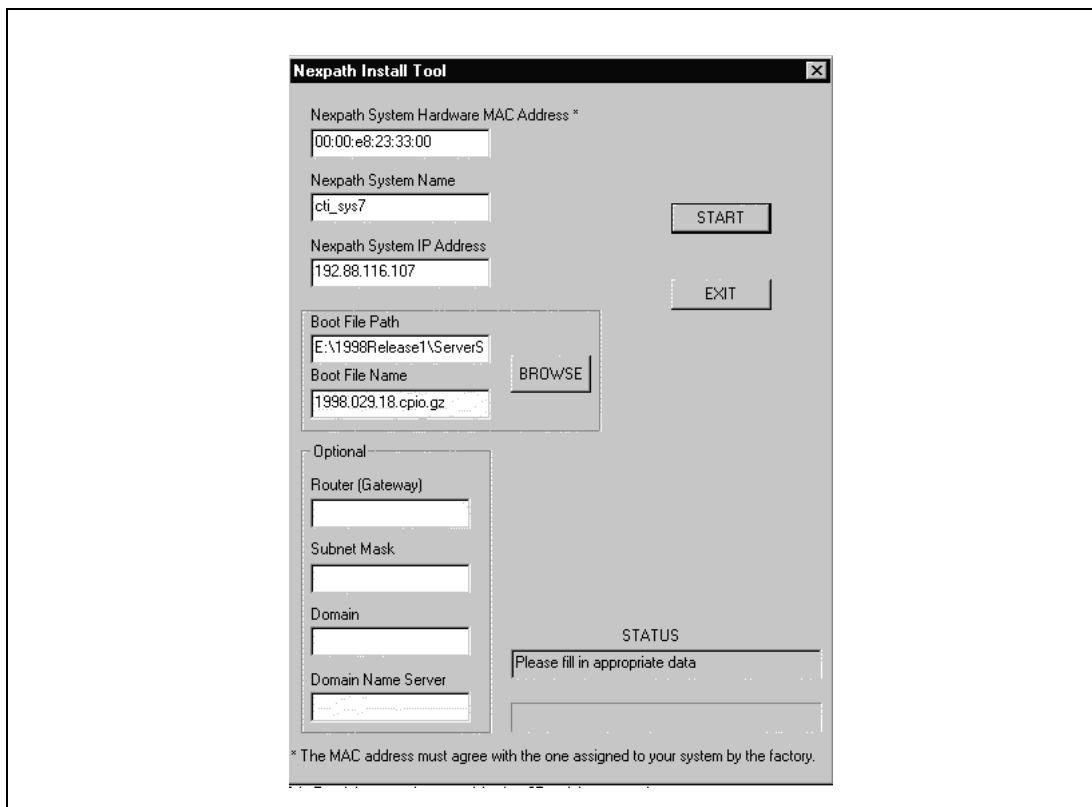


FIGURE 6-1.

- Fill in the MAC address, along with the IP address and system name you want assigned to the NexPath Telephony Server. Note: the MAC address must exactly agree with the system being upgraded, or else the installation will fail. Colons are optional.

5. Use the **Browse** button to set the Boot File Path and Boot File Name fields to point to file `\Release 7\ServerSoftware\2003.277.16.tar.gz` on the CD-ROM (or similar if a later release).

---

**Note** The file on your CD-ROM may differ in name from this one; just be sure to select the file in the *ServerSoftware* directory under *\Release 7* on the CD-ROM.

---

6. Though not necessary, you may enter values for the other parameters in this window as desired. No entry is required for any of these parameters except in special circumstances. In particular, if you want to access the NTS Server from another location on the Internet outside of your network, then you must enter a value for the **Gateway**. You can get the IP address of your gateway from your system administrator. The Netmask parameter defaults to 255.255.255.0 unless you enter another value. These other parameters can also be set at a later time from the NexPath Telephony Server console.

---

**Note** Once the network parameters are entered, and the NexPath Telephony Server contacts **InstallTool** and downloads the values and loads the telephony software, it is not necessary to use a floppy disk to inform the Server of its system name and IP address. The values are stored on the hard disk and used each time the system boots. However, there are two parameters that cannot be set from InstallTool. These are the timezone and the optional enabling of the `bootp` daemon. See the the chapter *Network Installation* starting on page 21 for information on using a floppy or the console to set network parameters if you wish to set these items. The template file written to the floppy disk also contains information of the network parameter settings.

---

When finished entering all information in this window, click **START**. **InstallTool** will begin looking for the NexPath Telephony Server, but will not find it yet, since we have not booted it from the floppies. Leave it in the “listening mode” and proceed to the next step.

7. Power down the NexPath Telephony Server using the larger round NTS Reset button (small red button on older systems), wait for the status light to turn red, then turn the power off.
8. If you have not already done so, attach an AT-compatible keyboard and a VGA-compatible monitor.
9. Insert NexPath Boot Floppy Disk into the NexPath Telephony Server and turn on the power.
10. When NexPath Boot Floppy has loaded, the server will clear the screen, and indicate it is trying to locate a PC. If this search process fails, an error message will be printed. You can re-initiate the search by pressing return. When contact to the PC running **InstallTool** is made, the screen will indicate the IP address you’ve assigned the system, then start downloading the software file. The NexPath **InstallTool** on the Windows system will also indicate that it has contacted the NTS server, and a file progress bar will be visible as the file is transferred.

11. You can remove the NexPath Boot Floppy at any time after the screen clears and the installation process begins.
12. After a somewhat lengthy time, the NexPath Telephony Server will prompt for you to press Enter to reboot. You can do this to reboot and run the telephony software (be sure there is no floppy in the floppy drive). The NexPath **InstallTool** should also indicate that downloading has completed. You can now exit the InstallTool program on the Windows system and remove the CD-ROM.

---

**Note** The installation will leave the system in a factory-default configuration. To restore the full configuration of a particular system, perform the restore operation as described in “Restoring from a backup file” on page 154, and install the license key as described in “Installing the license key from the License floppy disk using the NexPath Telephony Server Console (keyboard and monitor)” on page 144.

---

### *Install the License key*

After the software is installed as described above, install the license key per the procedure described in the chapter **License Installation** starting on page 143.

### *Install the backup file (if you made one)*

Install your backup file (saved on another client on the network), if you made one. See the chapter **Using BackupTool** starting on page 147 for a details.

### *Finishing and verifying the configuration*

1. After installing the license key, and the NexPath Telephony Server reboots, verify proper operation by going to an extension, verifying dial tone, and pressing **# 8** to announce the extension.

### Additional information for upgrading older systems (prior to Release 4)

- After installing the backup, if your previous version of software is pre-1998, run **AdminTool** on a PC using Netscape Navigator 3.03 or later version, and change the voicemail and forwarding delays as follows. The Release 4 and later versions of the NexPath Server Software change the ringing cadence from 1 second of ringing and 3 seconds of silence to 1 second of ringing and 4 seconds of silence to accommodate the delivery of CLASS features to each extension (Caller Name, etc.). This means that a 20 second timeout on forwarding to voice mail will result in four rings rather five previously, which may not be what you want. You should change this parameter for each extension if you want the same number of ring counts as before, and then re-activate the configuration.
- After installing the backup, if your previous version of software is pre-1998, check forwarding on all extensions using the URL `<systemname>/sysInfo`. The Release 4 and later versions of software correct a bug in the file that stores the forwarding information on the NexPath Telephony Server. Use the `/sysInfo` page to check and see if there are any problems in forwarding of any extension. If you see any “funny” numbers in the forwarding column, go to any extension and enter the sequence to cancel forwarding (or enable it if it was cancelled), then re-forward it. Recheck the numbers on the `/sysInfo` page. This process of cancelling forwarding then re-enabling it should correct any problems in the file on the server.



---

Installation of the NexPath Telephony Server software, for software releases Release 6 and later, requires the installation of a license key to enable the software. Otherwise the telephone system will not answer calls or provide inside dial tone.

The license key is unique to the computer hardware and will not work on another system. It also contains information about the number of CBTI cards that you are licensed to use. If you add a new card, the factory will provide you with a new license key, which must be installed along with the new card.

---

**Note** For software Release 7 and later releases, all systems (except some rack models) require a hardware license key to be installed into the USB port (known in the industry as a license *dongle*). This small hardware key plugs into the back of the system into any empty USB port. The encrypted key information on the license key disk must match the key serial number on the *dongle* for the NexPath Telephony Server to be fully operational.

---

Systems that are shipped from the factory already have the telephony software and license key installed. You only need to install a license key when you add a new card, or in situations where a new release is installed, or the hard disk was restored due to some kind of hardware malfunction.

The license key is installed into a read-only region of the hard disk. Therefore it is not a simple copy operation, but must be installed in a manner that allows the NexPath Telephony Server to mount its disks read-write, install the file, then re-mount the disks regions read-only.

The license key is shipped with your system on a floppy disk. Your unique key is contained in a file named LICENSE.TXT. Keep this floppy disk in a safe place in the event you ever need to restore the software from CDROM. If you lose the license key floppy, there is a charge for replacing it.

### *Installing the license key from the License floppy disk using the NexPath Telephony Server Console (keyboard and monitor)*

Following are the instructions for installing the license key from the **License** floppy disk on to a system with a keyboard and VGA monitor installed:

1. If the system is not on, turn it on and wait for it to come up (you will hear a series of relays inside the box clicking just before the system is fully up and running, and the **STATUS** light will be illuminated green). The NexPath Telephony Server system **MUST** be running for this installation to be performed.
2. Place the License floppy into the floppy drive on the Nexpath System. Using the keyboard arrow keys, select License->Install on the monitor attached to the NexPath Telephony Server and press Enter on the keyboard. Using the tab or arrow key, select Yes from the pop-up dialog, and press Enter.
3. The license key will be installed. When prompted, remove the floppy disk, and press Enter.
4. A system re-boot is not required with this mode of installation.

### *Installing the license key from the License floppy disk without a keyboard or monitor*

Following are the instructions for installing the license key from the **License** floppy disk on a system with-  
out a keyboard or VGA monitor:

1. If the system is not on, turn it on and wait for it to come up (you will hear a series of relays inside the box clicking just before the system is fully up and running, and the **STATUS** light will be illuminated green). The NexPath Telephony Server system **MUST** be running for this installation to be performed.

2. Place the License floppy in the floppy drive on the Nexpath System and click the **RESET** button. This is either the large round black button on the mini-tower, or a red push button or rocker-style switch on rack-mounted systems. Older mini-tower systems have a smaller red reset button that must be depressed with a small tool such as a toothpick. In all cases it should be clearly labelled.
3. When the **STATUS** light flashes red and green, remove the floppy and click the **RESET** button again.
4. The Nexpath System will then reboot, mount the disk partitions read/write, make the file changes, then reboot again and mount the critical disk sections read only. You will be without phone service for about 1-2 minutes.
5. When completed, your system should be licensed, and picking up any phone you should hear NexPath dial tone.

---

**Note** The License floppy is a DOS formatted floppy disk that you can copy to a Windows or other system for backup purposes. It contains three files: `update.sh`, `license.gz`, and `LICENSE.TXT`. The `LICENSE.TXT` file is the license key data unique to your system.

---

The license key can also be installed using the network protocol FTP. You must be familiar with using command line FTP, or, with using FTP in conjunction with the web browser or the Windows File Explorer in order to use the following procedure.

### *Installing the license key using FTP*

Following are the instructions for installing the license key using the network protocol FTP:

1. If the system is not on, turn it on and wait for it to come up (you will hear a series of relays inside the box clicking just before the system is fully up and running, and the **STATUS** light will be illuminated green). The NexPath Telephony Server system **MUST** be running for this installation to be performed.
2. Using FTP, either from the Netscape browser, command line FTP (DOS window), or the Windows File Explorer (Win98/Win2K) login to the NexPath system with user name 'update' and password '235update'. With the browser or File Explorer, the URL is typed in like this: `ftp://update:235update@<system name>`. If you are not there already, go to the directory `/var/update`. Copy the files `update.gz` and `LICENSE.TXT` to this directory. No other files are required. Log out of FTP.

2. Using **AdminTool**, activate the current configuration. This can be the file 'config', which is the current active configuration, or any other configuration that you wish to activate. In the activation process, the NexPath Telephony Server will determine that an update file is present in /var/update, and will install it.
3. The Nexpath System will then reboot, mount the disk partitions read/write, make the file changes, then mount the critical disk sections read only. You will be without phone service for about 1-2 minutes.
4. When completed, your system should be licensed, and picking up any phone you should hear NexPath dial tone.

### *Important facts about the license key*

- The license key is not backed up with **BackupTool**, and must be restored whenever you reload the hard disk. The license key and the backup file must be restored in separate operations. The order of installation of the license key and the backup file is not important; either may be installed first.
- The license key is unique to your system hardware or to the *dongle* key installed in the USB port. It will not activate your software on a different NexPath system.
- The license key specifies the number of CBTI cards (ports) for which you are licensed. If you have more cards than the license key allows, then the software will be disabled. You can always have less cards than the license key specifies. When you purchase an add-on CBTI, you will also be provided a new license key floppy to install.
- You can view the current license status with the NexPath Telephony Server console, or using the */sysInfo* URL.

---

**BackupTool** is accessed through your web browser at the URL *http://<system name>/backup/*. You can use it to save all information unique to your system to a compressed file. The backup process can be initiated at any time and does not affect phone system operation.

You must transfer the backup file to your PC for safe-keeping. This backup file, when created, is located in the directory */var/backup* on the NexPath Telephony Server. It can be accessed using *ftp*, using either the browser, the command line (DOS window) version of the program *ftp*, or the Windows File Explorer. The process of retrieving the file using the browser is described below.

The backup file can be re-installed on a system by copying the file (using *ftp*) to the */var/update* directory on the NexPath Server, and then activating the current configuration using **AdminTool™**. This process installs the backup file onto the NexPath server. The backup file contains all of the variable data, i.e., the data unique to the user's specific system. It does not contain the operating system or the NexPath telephone system binaries. These are on the CDROM that came with the system.

The **BackupTool** can also be used to "clone" systems. If you back up all of the data on a NexPath Telephony Server, and then install it to a factory fresh system, you only need to give the new system a network name and IP address to have an identical copy of the first system. This backup method allows you to quickly replace a system in the event of a hardware failure.

## *Creating a backup file*

To back up your system's configuration, perform the following steps:

1. Log in to the URL *http://<system name>/backup/*. The NexPath Server Backup Utility Login Screen will appear.

---

**Note** Important: If you are backing up any 1997 version of the software, the backup URL is *<system name>/backup.html*. Note the trailing *.html* is required in the 1997 version, but not used or required in the 1998 and subsequent versions of the software.

---

2. Enter a valid extension number and the password of a user account that has administrative privileges. The NexPath Server Backup Screen will appear.
3. Select which items you want to back up. Click **yes** for all items if you want to completely save your system's configuration, then click **Proceed with Backup** at the bottom of the screen and follow the prompts

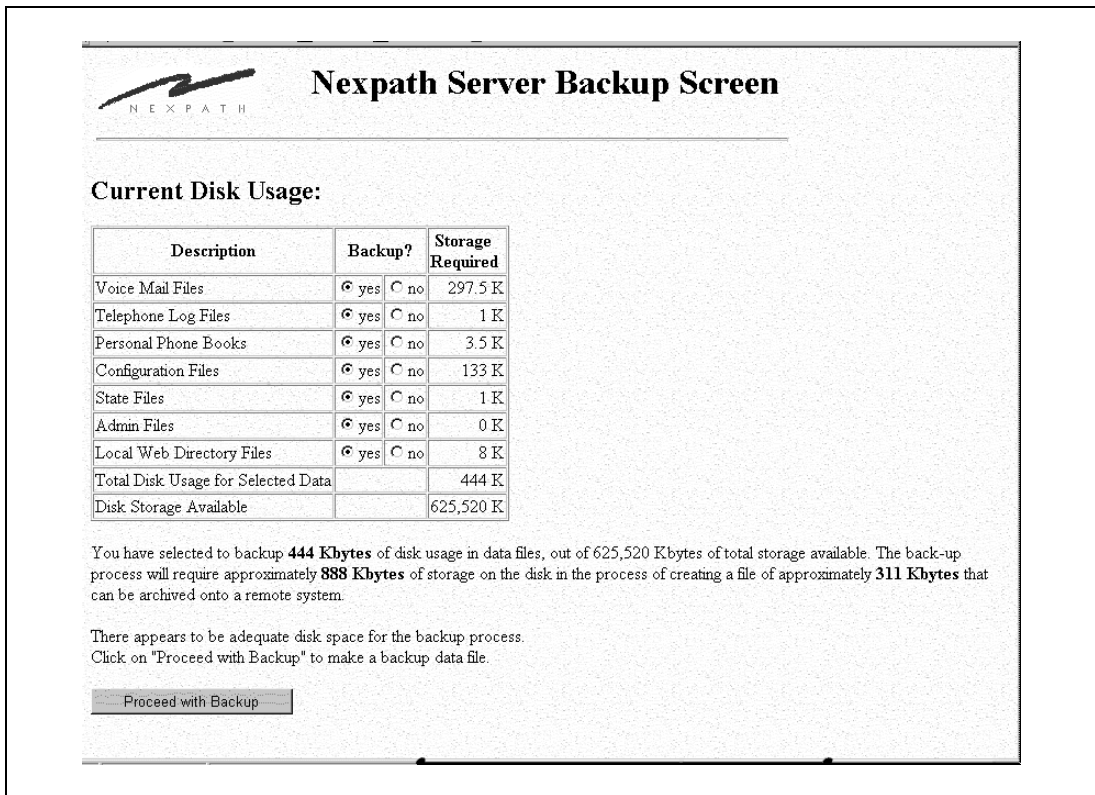


FIGURE 8-1. NexPath BackupTool- Selection Screen

4. You will be asked to confirm your selections of the files to backup. If you made a mistake, you can click on **Return to Main Screen** to correct your selection.

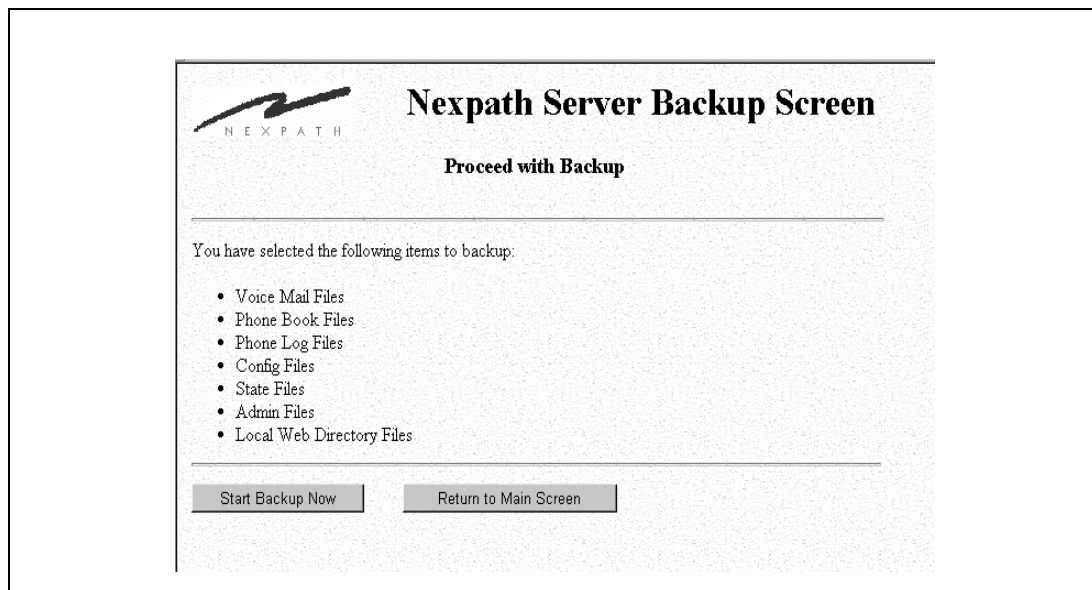


FIGURE 8-2. NexPath BackupTool- Confirmation Screen



5. The backup process will proceed when you click on **Begin Backup Now**. The next screen will report the progress of the backup as it proceeds. Initially you will see the following:

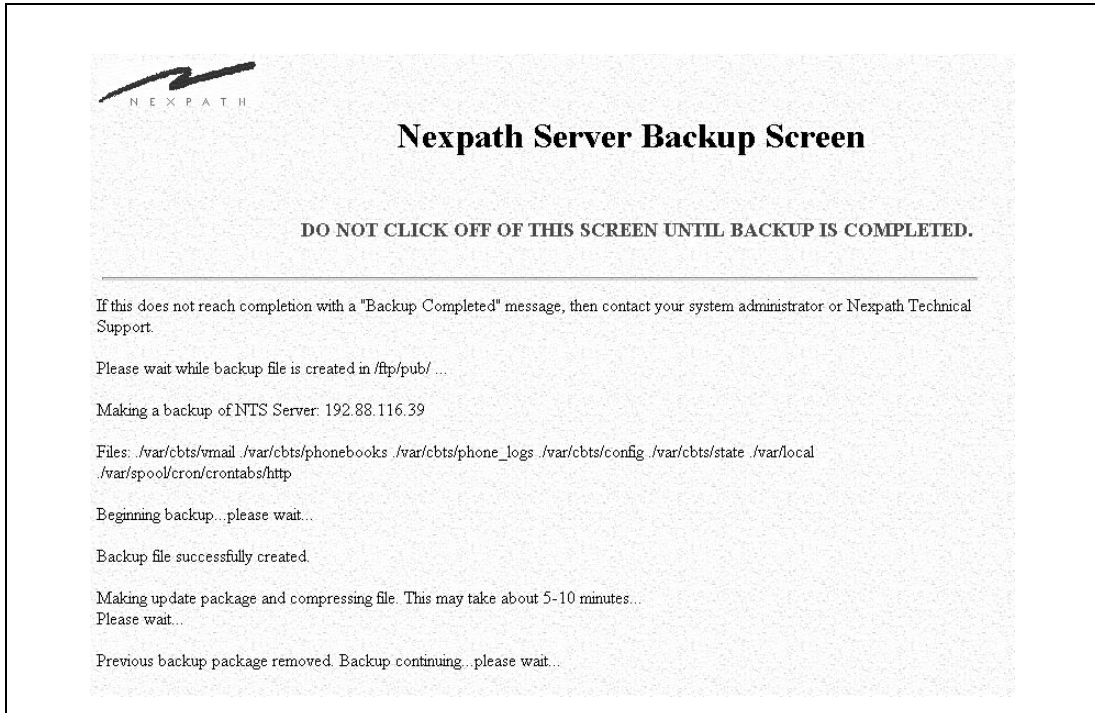


FIGURE 8-3. NexPath Backup Tool- Backup in progress

There will be a notation about removing a previous backup up if one was left there from another backup process.

6. When the backup process is completed, you should see the following screen:

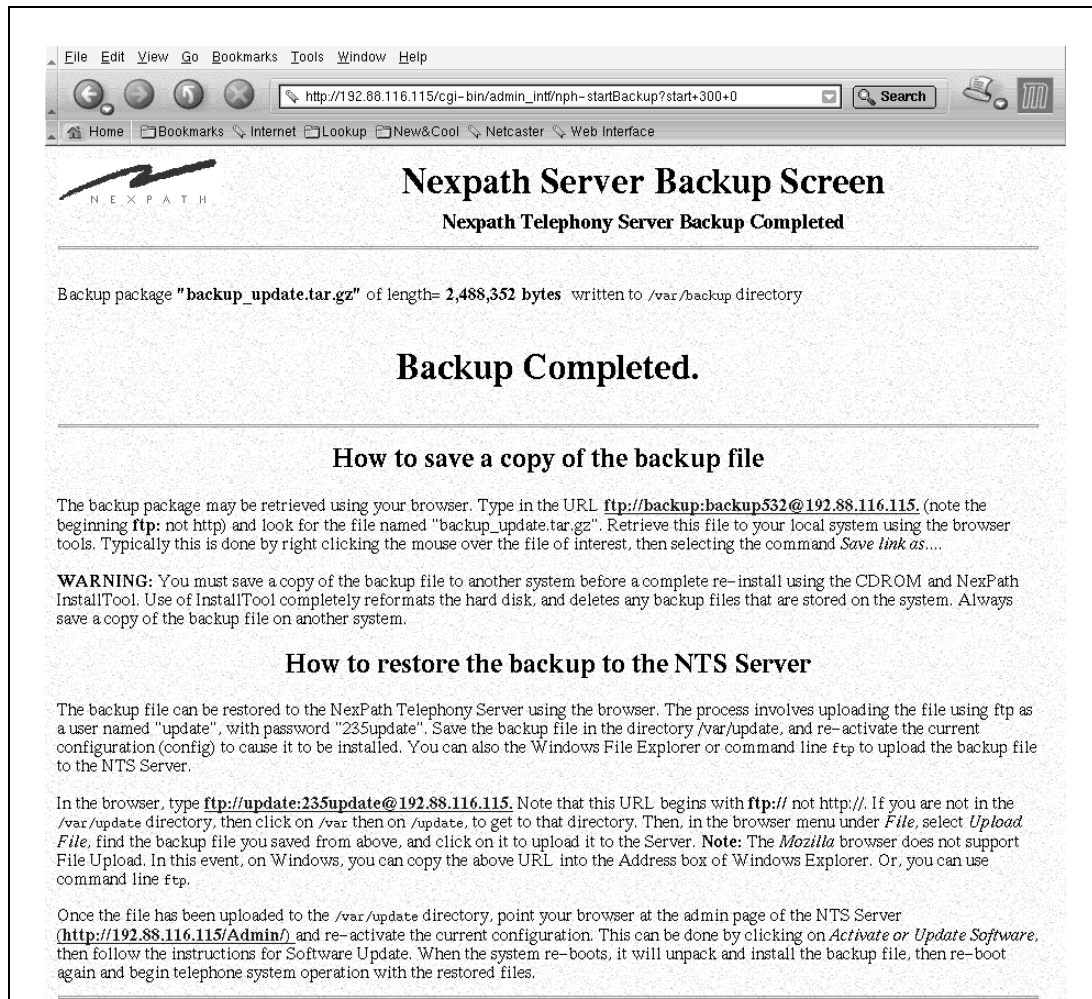


FIGURE 8-4. NexPath BackupTool- Backup Completed

7. The BackupTool will create a compressed file called *backup\_update.tar.gz* on the Server in the directory */var/backup*.
8. **You should always copy the backup file to a client PC for safe-keeping.**

### *Copying the backup file to your local computer*

The instructions below explain how to use the Web browser to copy the backup file to your local computer. If you are familiar with it, you can use a command-line version of `ftp` (in a DOS window) to perform the same function, but the instructions for using command line `ftp` are beyond the scope of this manual.

1. From your browser (or the Windows File Explorer), go to the URL *ftp://backup:backup532@<system name>*. Note that this URL begins with *ftp*, not *http*. This URL contains the user login name, *backup*, and the password, *backup532*, (separated by a colon) for `ftp`. You can also enter just *ftp://backup@<system name>*, and the browser or File Explorer will prompt for a password with a pop-up.
2. Verify that the current directory is */var/backup*
3. Click on the file *backup\_update.tar.gz*, then click on **Save File** when prompted. On the Windows File Explorer, you can use the familiar copy and paste operations using the right mouse click. Specify the directory to which you want to save the file, but do **not** change the file name unless absolutely necessary. If you do change the file name, be sure that it ends in “.gz” when restoring it to the NexPath Telephony Server. Otherwise, it will not be located by the NexPath system software and will not be installed.

---

**Note** The backup file will remain in the */var/backup* directory on the NexPath system until you delete it. For most systems, this use of extra space is not a problem. However, you cannot delete this file using a browser, only by using command line `ftp` or the Windows File Explorer.

---

## Restoring from a backup file

To install the backup file onto a system, perform the following steps:

1. From the browser, go to the URL `ftp://backup:backup532@<system name>`. Note that this URL begins with `ftp`, not `http`. This URL contains the user login name, `update`, and the password, `235update`, for `ftp`. As mentioned above, you can also enter `ftp://backup@<system name>` and a popup window will prompt you for a password.
2. Verify that the current directory is `/var/update`.
3. At the top of the browser window, click on *File*, then select *Upload File*, then find and click on your local copy of `backup_update.tar.gz`. Note that the Mozilla browser no longer includes Upload File. If your browser does not include this on the File menu, then you must use either command line `ftp` or the Windows File Explorer or other `ftp` program. On the Windows File Explorer, you can use the familiar copy and paste operations to copy the file.

---

**Note** At the time of the writing of this manual, Netscape 3 and later NS browsers use the *File -> Upload* mechanism to upload with the `ftp` protocol. The Mozilla browser does not. Microsoft Internet Explorer will also upload the file using `ftp`, but it must be done using other means. Drag and Drop from the File Explorer works with Microsoft Internet Explorer 5. Previous MSIE versions require the use of the Web Publishing Wizard. You can also use the Windows File Explorer on Win98 and Win2K and later systems, by putting the `ftp` style URL in the address location at the top of the Explorer.

---

4. When the upload is complete, start **AdminTool™** by going to the URL `<system name>/Admin`, then log in using a valid extension and the password of a user account with administrative privileges.

---

**Note** Remember that if you have just installed the server software, the system is running a factory default configuration until you copy and activate the backup file. The administrator's password is the system default, 1000, and the extension numbers are also the factory defaults (300 etc.). After you activate the backup file, the extension numbers and passwords for all users will be reset to values in the backup file.

---

5. Click on **Activate or Update Software** in the **AdminTool™** menu.
6. Select the configuration file `config`, which is always the currently active configuration, then click on **Activate NOW**.

The system will restart, find the update file, unpack and install it, then reboot again and begin telephone operations with the restored configuration information.

**Note** Restoring from a backup will cause any files on a system that have the same name as files that were on the backup system to be unconditionally overwritten. For example, if a system has an auto-attendant file called “DayProgram” and the system that was backed up also had a file called “DayProgram”, then the auto-attendant file “DayProgram” on the new system will be replaced with the file from the backup during the restore operation. However, if the system has a file called “DayProgram2” and no such file existed on the system that was backed up, then “DayProgram2” will remain unchanged after the restore operation is complete.

---

**Note** The software license key is not backed up by BackupTool. If you have just installed a new release of NexPath software, you must separately install the software license as described in the chapter **License Installation** starting on page 143 to activate the software.

---



---

*Initial start-up problems*

**Problem:** System refuses to come up (no dial tone on any inside lines).

**Solution:** Check that the AC power connected.

Make sure there is **no floppy disk** in the floppy drive. If there is, remove it and power cycle the system.

Make sure any UPS cable that is connected to the COM port is the correct APC part number (See *Apply AC power* on page 14 in the chapter *Installation* for the correct APC cable for the UPS). Disconnect the UPS cable and power cycle the system to see if the cable is the problem. The incorrect UPS cable can cause the system to shutdown or fail to come up.

If the green POWER light on the front panel is not illuminated GREEN, verify that the switch on the rear of the unit (the Power switch) is in the **ON** position (the on position is marked with a dash -- rather than an **O** which is off).

When the NexPath software is running, the STATUS light should also be illuminated GREEN. When the NexPath software is not operational, the STATUS light is illuminated RED. If the status light is RED, remove any UPS cables as indicated above, remove any floppy disks, and

cycle the power switch on and then off. If after a few minutes the STATUS light does not turn GREEN, contact Nexpath support.

Use the cabling diagrams in the appendix appropriate to your system to verify that you connecting phones to the inside lines and not the outside lines.

Next, try plugging a phone directly into one of the inside line jacks on the rear of the NexPath Telephony Server CPU (card 1, blue and white jacks are inside lines. That is, the RJ11 jack of card #1 that lines up with the blue or white dot at the bottom of the case). If you get dial tone here, but not at a telephone on a desk, then the problem is in the wiring, not in the unit.

If you do not get dial tone at the back of the unit, or the problem is otherwise not obvious, then connect a VGA monitor to the unit if possible and determine if there are any error messages displayed, then contact your NexPath distributor for help in determining what to do next. Please have the exact wording of any error messages displayed, along with the unit's model number and serial number ready when you call (the serial number is displayed on the label on the rear of the unit).

---

**Note** Do not open up the unit yourself! Hazardous voltages can be present within the system, and no user-serviceable parts are inside. If deemed necessary, you will be instructed as to where to ship the unit for repairs.

---

**Problem:** No dial tone on just one (or a few) inside line(s).

**Solution:** Chances are there is a loose or miswired connection somewhere. If you built custom RJ11 cables as described in "Details about telephone wiring connections to the NexPath Telephony Server" on page 10, make sure you have built the cables such that they connect to the proper pins of the RJ11 jacks, and that there are no loose wires in the RJ11 plugs (a common problem).

Next, try plugging a telephone directly into the inside line jack on the back of the CPU. Note, though, that if the inside line you are tracking down does not connect to pins 3 and 4 (the center two pins) of the RJ11 jack, you will need to build a special cable so that the phone connects to either pins 2 and 5 or 1 and 6 as necessary. If you **still** don't get dial tone when connected right to the back of the CPU, call the factory for more assistance.



If you get dial tone when connected directly to the CPU, use the Announce Line and Extension Number sequence **# 8** to verify that you've connected to the right line, then start tracking the problem through the external wiring. A multimeter set to measure resistance can be quite useful here.

If you do not get dial tone on a bona fide inside line, and you are sure it is not the wiring, contact your NexPath dealer (or NexPath Technical Support if you purchased the system from NexPath) for assistance.

**Problem: How do I check that all of our outside lines are working?**

**Solution:** Instead of picking up a phone and pressing **9** to get an outside line, you can seize a specific outside line by dialing its extension number. The default system configurations, and therefore the default extension numbers for all outside lines, are given in the *Appendices* of this manual. See the Appendix appropriate to your system for more information.

**Problem: I seized a specific outside line using the method described above, and the line appears dead.**

**Solution:** If one of your outside lines appears to be non-functional (that is, the system recognizes the extension as valid, but you do not get an outside line dial tone when you seize it), disconnect the line from the NexPath Telephony Server, connect a phone directly to the outside line, and verify that the phone company is sending you dial tone. If they are, but your line still is not working when connected to the NexPath Telephony Server, check the wiring going the RJ11 jack which connects the outside line to the system. If this too appears okay, contact your NexPath dealer (or NexPath Technical Support if you purchased the system from NexPath) for further assistance.

## *Network-related problems*

**Problem:** When I try to open the NexPath system's URL, I get a long delay, and finally, "A network error occurred: unable to connect to server (TCP Error: Broken pipe) The server may be down or unreachable" message from the browser.

**Solution:** It is possible that the NexPath Telephony Server is not physically connected to your network. Check that you have connected the NexPath Telephony Server to your network through its 10BaseT (RJ45) connector. Also check all 10BaseT hub and cable connections. Try rebooting the NexPath Telephony Server if necessary. See ***Testing your network connection*** on page 28 in the chapter ***Network Installation*** for further details.

**Problem:** When I start Netscape Navigator and enter the NexPath system's URL, I get a "Netscape is unable to locate the server <NexPath Telephony Server system name>. The server does not have a DNS entry" message from the browser.

**Solution:** Here are some things to check:

- Can you "ping" or otherwise contact any of the computers on your network, either by system name or IP address? If you cannot successfully contact any of the other computers on your network, check that your computer's networking hardware and software are properly configured.

- If you have an internet account, can you open any other URLs? Try to open URL:

*http://www.netscape.com*

If you cannot open that, then you have a Netscape setup or configuration problem that needs to be solved.

- Try to open the URL:

*http://<IP address assigned to the NexPath Telephony Server>*

If you can, then make sure that your network administrator has added the name and IP address of the NexPath Telephony Server to either your network's DNS (Domain Name Service) server or to the "host" file for your computer. If necessary, refer to the networking documentation that came with your computer for assistance on how to add IP addresses and system names to your network. Also see ***Using your System Name rather than the IP Address*** on page 29 in the chapter ***Network Installation***.

- If you are having trouble accessing the Admin URL, make sure you are using a capital “A” in Admin, and that you have supplied a trailing “/” if you are using the IP address rather than the system name. See ***Starting AdminTool, the system administration program*** on page 33 in the chapter ***Software Configuration*** for further details.

If you still cannot open the NexPath Telephony Server URL after going through the suggestions above, call your NexPath dealer (or NexPath Technical Support if you purchased the system from NexPath) for assistance.

**Problem:** **When I open the URL for NexPath, I get broken graphics symbols, and when I click on where the OK button would be, nothing happens.**

**Solution:** You need to enable Javascript for your browser. Click to the browser’s Options pull-down menu, click on Network Preferences, then Languages, then click on the Enable JavaScript box and OK. Then try opening the NexPath URL again.

You need to enable cookies for your browser. Similar procedure to above.

You cannot use Internet Explorer for TelOper, the desktop web browser interface. TelOper is only compatible with Netscape 3.03 and later versions. On some architectures, only version 3.03 works properly (later versions do not).

**Problem:** **I cannot ping the NexPath Telephony Server, but I believe that my network is connected correctly.**

**Solution:** Verify the network card is operational by connecting a VGA monitor to the NexPath Telephony Server, and viewing the screen. The IP address of the system should be displayed on the screen. If it is not, then the network card has failed. Contact your dealer (or NexPath Technical Support if you purchased the system from NexPath).

If the IP address is different than that you assigned with the floppy disk, then your IP address may have been overridden by a DHCP server that is running a program called `bootp`. The NexPath Telephony Server, for about 20 seconds during the boot process, will respond to a `bootp` request to reset its IP address. A response from any network connected `bootp` server will override the floppy IP setting. If the NexPath Telephony Server does this, it will beep three times during the boot process. You can defeat this behavior by disconnecting the net-

work cable during boot-up. Or, locate the origin of the bootp server, and change or discontinue its response.

If you have sub-netted the NexPath Telephony Server, by assigning a netmask, make sure you have set the IP and netmask properly. Also, if you have setup a gateway (router), make sure it is set properly as well. The gateway must be on the same subnet as the system. A network expert is required in this case, as subnetting issues are beyond the scope of NexPath support.

On most systems, a green light will light on the network card to indicate that the cable is wired properly. Note that connecting to a hub requires a conventional cable, and directly connecting to another system requires a cross-over cable. Also, make sure you are using only a TP or 10BaseT (100BaseT on some models) connection; the other types of connectors that may be on on the network card are not supported.

If you are pinging the NexPath Telephony Server from a Windows PC with both a modem and a LAN card, and you use the modem for Internet connectivity, you need the assistance of a network expert. Windows 95/98 must be carefully configured to allow both a modem (PPP) network connection and a LAN card on the same PC. This configuration is beyond the scope of NexPath support. Many of our customers have only been able to solve this problem by using a separate system that contains only a LAN card. (Later versions of Win98 and ME have resolved this issue).

The vast majority of network problems are caused by bad or incorrect cables, or incorrect network programming in the client, or a modem/LAN combination as described above. The problem is rarely a hardware failure in the NexPath Telephony Server.

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*System Hardware Features*

- 30 non-blocking voice connections/voice recording/voice playback resources
- One CO line per card is software-configurable as either a CO trunk line, a paging output, or a hold music input line
- On-board ringing and battery voltage generation
- Seven different ringing cadences
- 64 kbps codec digitization on all voice paths
- Conference calls with up to four parties per conference, two conferences per CBTI card
- DTMF tone detection
- 136 lines (17 card) maximum (outside + inside lines)

*Server Physical*

- Size: 7" W x 17" H x 16 1/2" D (IBM-PC mini-tower footprint)
- Size: 19" W x 8.5" H x 26" D (Rack mounted system)
- Weight: approximately 27 pounds (75 pounds for the rack mounted system).
- AC power required: 120/240 VAC 6/4A Max

- Software-controlled reset button
- RJ-11 jacks for both outside and inside lines
- Serial port for UPS auto-shutdown (APC Smart-UPS or Back-UPS or equivalent) (UPS not required); requires special cable from APC.
- 8 Watts nominal power draw per CBTI card (8 ports per card)

### *Outside Lines (CO or Trunk Interface)*

- Loop start lines
- 600 ohms impedance presented to CO
- CPC supervision
- Transparent pass-through of modem and FAX signals up to 9600 baud full duplex
- Automatic detection of CO line connection
- Automatic busy-out of disconnected or failed CO lines
- Automatic bypass of all CO lines to inside lines in the event of AC power loss

### *Inside Lines (Station Interface)*

- 25 mA constant current feed
- 600 ohms impedance
- Transparent pass-through of modem and FAX signals
- Uses standard analog telephones

### *Network Interface*

- 10BaseT (twisted-pair) TCP/IP network interface (100BaseT available on some models)
- HTTP server daemon (Port 80)
- BSD-style socket interface supporting N-SCTP (Port 5000)

- 
- Administration and control via web browser and N-SCTP LAN interface programs

## *Server OS*

- Linux 2.4 with open source patches for better real-time performance
- Read-only partitions for root file system including executables
- IBM JFS journaling file system for enhanced data integrity and power fail recovery

## *Software Features*

- Complete voice mail system with individual personal greetings
- Multiple automated attendant with custom messages and programming
- Incoming call handling configurable on a CO line by CO line basis
- Multiple company support with individual CO seize groups on each inside line
- Voice mail access from inside or outside lines
- Bellcore Standard Caller ID collection, detection, and regeneration on inside lines (name and number)
- Automatic gain control on recorded messages
- Call waiting, call forwarding, Do Not Disturb with enable/disable
- Message waiting indication via stutter dial tone and pager and email notification
- Password protection for voice mail and features access
- Password protection overrides default extension permissions
- Feature access from outside lines with administrative disable on a user by user basis
- Multiple extensions per line (port), each with individual ring cadence, call waiting, etc.
- Complete network access for administration and call control
- Integral web server and JavaScript/HTML user interface software included
- NexPath TelOper Computer Telephony telephone operations software via web browser
- NexPath NexDial and NexDirector Windows programs for call control, voice mail access, and extension monitoring.

- Asynchronous event display on NexDial, NexDirector, and TelOper of station activity including incoming Caller ID
- NexPath AdminTool administration software via web browser
- Night and day modes with automatic change-over
- Three deep hold stack
- Park orbits and Ring groups
- Ring groups in Call Distribution groups
- Barge-in to voice mail in progress
- Record a call in progress
- Listen-in (screen) voice mail in progress
- Barge-in and Listen-in to calls in progress (See Legal Notice below)
- System activity log (SMDR) with personal and administrative access via NexDial and TelOper
- Multiple ring and pickup groups, system configurable
- Multiple Automated Call Distribution (ACD) groups
- Feature access configurable on a user-by-user basis
- Both extension numbers and passwords fully configurable, including number of digits for each.
- Open network API using NexPath SCTP.

### *Regulatory information - Underwriters Laboratories*

- Some versions of this product are UL and UL-C approved under UL file number E17584, control number 97PJ



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## *Regulatory Information- US Part 68, FCC Rules*

This equipment complies with Part 68 of the FCC rules. On the rear panel of this equipment is a label that lists, among other things, the FCC registration number and ringer equivalence number (REN) for this equipment. This information must be provided to the telephone company if requested.

The REN is used to determine the number of devices which may be connected to the telephone line. Too many devices on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line in your area, contact the telephone company to determine the maximum REN for the calling area. Check the literature which came with your phones, modems, etc., to determine the REN for each device you are using.

This equipment uses the following USOC jacks: RJ-11C.

FCC-compliant telephone cords and modular plugs are not provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using compatible modular jacks which are Part 68 compliant.

This equipment cannot be used on telephone company provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact your distributor or the NexPath Corporation at (408) 235-8916 for repair and (or) warranty information. If the trouble is causing harm to the telephone network, the telephone company may ask you to disconnect your system from their network until the problem is resolved.

No repairs to this equipment can be done by the customer.

This equipment is hearing-aid compatible.

### *Regulatory Information- US Part 15, FCC Rules*

This device complies with Part 15 of the FCC Rules. Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### *Regulatory Information- DOC CS-03*

**NOTICE:** The **Load Number** (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

Load Number: 6

**NOTICE:** The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

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Users should ensure for their own protections that the electrical ground connections of the power utility, telephone wires and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**Caution:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

## *Legal Notices*

**WARNING:** *The NexPath Telephony Server can be programmed to allow users, if the feature is enabled by the system administrator and a password is entered, to listen-in on, or record, conversations without the participants knowledge. Listening-in on, or recording, a conversation without the consent of one or both parties may be a violation of local, state, and federal privacy laws. It is the responsibility of the user of the NexPath Telephony Server, when using features of the system, to assure that he or she is in compliance with all applicable laws.*

**WARNING:** *The NexPath Telephony Server includes a LAN based protocol, NexPath Simple Computer Telephony Protocol (N-SCTP), that allows the system to be programmed to function as an Automatic Dial and Announce Device (ADAD). ADADs or similar devices that are used for commercial solicitation, or used without the consent of the called party, are prohibited by many local, state, and federal laws. It is the responsibility of the user of the NexPath Telephony Server, when using features of the system, to assure that he or she is in compliance with all applicable laws.*



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|                          |  |
|--------------------------|--|
| <b>Accept Calls mode</b> | <p>Individual extensions can be placed in either an “Accept Calls” mode or a “Do Not Disturb” mode. The “Accept Calls” mode is the normal mode of operation. In comparison, when an extension is in “Do Not Disturb” mode, calls placed to it will not ring the phone associated with the extension but instead will be sent directly to voice mail.</p> <p>If the extension is part of a call distribution group, incoming calls will be routed past any extensions which are in the “Do Not Disturb” mode and will go on to the next extension in the group.</p> |
| <b>ACD</b>               | Automated Call Distribution or Automatic Call Distribution. See call distribution groups below.  |
| <b>auto-attendant</b>    | An automated call-routing system for incoming calls which can be used either instead of or in addition to a live operator. The auto-attendant is the system which tells incoming callers, “Press 1 for Sales, 2 for...”  |
| <b>barge-in</b>          | Breaking into an existing conversation or picking up a line after a caller has already started leaving voice mail  |

**call distribution group**

Groups of extensions can be grouped into a call distribution group. This function is part of the auto-attendant function, and is normally used to allow callers to dial an entire department, such as sales, rather than just an individual. When the auto-attendant routes a call to a call distribution group, the phones associated with all extensions set to “Accept Calls” in the group will ring in sequence (one at a time) until either the call is picked up by someone or it times-out. If a call times-out, depending on how the auto-attendant is configured, the call is either sent to voice mail or the caller is given a message and disconnected. If at least one of the extensions in the group is busy, then the call will go into a waiting queue, where reassurance messages are played, along with hold music if enabled, until either a time-out is reached or one of the group extensions becomes available.

Note that call distribution groups are not the same as ring groups. See *ring groups* for the definition of a ring group.

**call forwarding**

When call forwarding is enabled for an extension, callers dial one extension (for example, 752) but the call rings and can be answered at another extension (for example 805). The extension dialed (752) is the “forwarded” extension. The extension where the call actually rings (805) is the “forwarding” extension. Note that, in this example, if no one answers at the phone at extension 805, the call will go to the voice mailbox of extension 752.

**call waiting**

When call waiting is enabled for your extension, you will hear a short beep at your end of the conversation if you are on the phone and another call comes in.

Note that, when you hear a call-waiting beep, you can simultaneously place your current call on hold and pick up the incoming call by entering the Pick Up Waiting Call sequence **Flash** **3**.

You can then toggle between the calls using the Swap Hold sequence

**Flash** **\***.

**Centrex**

Centrex lines are a type of central office line with special features. Centrex lines are standard analog loop start lines, but have different capabilities at the central office. The only Centrex capability that is relevant for the NexPath Telephony Server is the ability to transfer a call using hook-flash signalling, so that the NexPath Telephony Server can drop out of the call. Centrex lines are sometimes known by different names in other parts of the US.

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| <b>CPC</b>                 | Calling party control, also known as line supervision or wink disconnect signaling. All of these terms refer to the brief interruption in the battery current on an analog line, to indicate to connected equipment when a distant party has disconnected. The CPC signal is required by the NexPath Telephony Server on inbound CO lines, to prevent calls that are in the auto-attendant or conferenced with other CO lines, from becoming connected indefinitely even though the outside party has hung up. Most if not all central offices in the US provide this signal, but some channel banks (analog line conversion from T1 digital lines) do not. NexPath does not recommend connecting the NexPath Telephony Server to channel bank or ISDN-to-analog equipment that does not provide the CPC signal. |
| <b>CPC Delay</b>           | The CPC delay is the time from when the caller actually has disconnected, to when the central office sends the CPC signal. The NexPath Telephony Server has a programmable CPC delay compensation adjustment, to compensate for this time delay, to eliminate long periods of silence at the end of voice mail messages. This can be programmed by the system administrator. See the System Administration Guide for details. The CPC delay compensation is merely a fixed amount of time that is chopped off of the end of all voice mail messages. If you find voice mail messages cut off at the end, the CPC delay compensation factor may have been set too large. Contact your system administrator.   |
| <b>Day mode</b>            | Each extension can be assigned to ring at a different phone or group of phones depending on whether the system is in the Day mode or Night Mode. Usually, systems are configured so that calls placed to the operator ring at the operator's phone when the system is in Day mode, but ring over the overhead PA speaker when the system is in Night Mode. Individual extensions may be similarly configured. Day and night mode can be changed from the telephone keypad and from the web application <b>TelOper</b> , as described in the <i>Users Manual</i> .  |
| <b>Do Not Disturb mode</b> | Individual extensions can be placed in either an "Accept Calls" mode or a "Do Not Disturb" mode. When an extension is in "Do Not Disturb" mode, calls placed to it will not ring the phone but instead will be sent directly to voice mail. If the extension is part of a call distribution group, incoming calls will be routed past any extensions which are in the "Do Not Disturb" mode and will go on to the next extension in the group.   |
| <b>extension number</b>    | The number an outside caller dials to get to a specific person or department. Extension numbers are also used to access outside lines, ring groups, PA speakers, voice mail boxes, speed dial numbers, park orbits, and automated attendants.  |
| <b>FSK</b>                 | Frequency Shift Keying, in this manual referring to the signalling technique for control the voice mail light on compatible telephones, and the signalling technique for communicating the caller ID of an inbound call.   |

|                            |   |
|----------------------------|---|
| <b>hook-flash</b>          | <p>The hook-flash is used to communicate to the system that some sort of control sequence will follow. It is accomplished by depressing the telephone hook switch for an interval of greater than 50 milliseconds and less than 750 milliseconds (a millisecond is 1/1000ths of a second, so 750 milliseconds is 3/4 of a second).</p> <p>Some telephones have a flash button that accomplishes this task.</p> <p>Note that your telephone system distinguishes between a hang-up, which is longer than about three-quarters of a second, and a hook-flash, which is a short depression of the hook switch.</p> <p>The symbol <b>Flash</b> is used in this manual to indicate a hook-flash.</p> |
| <b>inside lines</b>        | <p>The physical lines which you will run within your building and connect your telephones, FAX machines, etc. Also called station lines or inside extension lines. Designated by the NexPath Telephony Server as IL-1, IL-2, etc.</p>   |
| <b>inside dial tone</b>    | <p>A dial tone provided by the NexPath Telephony Server rather than by the local telephone company. Note that, depending on the dial tone provided by your phone company, the tone of an inside dial tone and an outside dial tone may be indistinguishable from one another.</p>   |
| <b>Listen in</b>           | <p>Listening into an existing conversation or listening to a line after a caller has already started leaving voice mail (screening voice mail).</p>   |
| <b>Night mode</b>          | <p>Each extension can be assigned to ring at a specific phone or group of phones depending on whether the system is in the Day mode or Night Mode. Usually, systems are configured so that calls placed to the operator ring at the operator's phone when the system is in Day mode, but ring over the overhead PA speaker when the system is in Night Mode. Individual extensions may be similarly configured. Day and night mode can be changed from the telephone keypad and from the web application <b>TelOper</b>, as described in the <i>Users Manual</i>.</p>   |
| <b>outside dial tone</b>   | <p>A dial tone the local telephone company. Note that, depending on the dial tone provided by your phone company, the tone of an inside dial tone and an outside dial tone may be indistinguishable from one another.</p>   |
| <b>outside lines</b>       | <p>Sometimes called <b>CO</b>, for <u>C</u>entral <u>O</u>ffice, lines, <b>trunk</b> lines, or <b>telco</b> lines. All of these terms are synonymous, and refer to the physical lines which come into your building from the phone company.</p>   |
| <b>park orbit</b>          | <p>A special way of putting a call on hold which allows anyone to pick the call up by dialing the number of the park orbit (a type of public hold).</p>   |
| <b>password protection</b> | <p>To insure that unauthorized people do not retrieve your voice mail, barge into your conversations, etc., many of the advanced features of the NexPath Telephony Server require that you enter a numerical password to identify yourself to the system before the feature can be accessed.</p>  |



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|                             |  |
|-----------------------------|--|
| <b>physical lines</b>       | The actual telephone lines connected to the NexPath Telephony Server.  |
| <b>pickup groups</b>        | See ring groups below.   |
| <b>ring groups</b>          | <p>Groups of physical telephone lines can be assigned to a ring group, also called a pickup group. This function is normally used so that a ringing phone can be picked up from another (non-ringing) phone using the pick up group sequence <b>* [Q]</b>, followed by a single digit ring group number.</p> <p>An extension can also be assigned to a ring group, so that when the extension is dialed, the group of phones will ring. The first extension picked up in the group of ringing phones will get the call.</p> <p>Note that ring groups are not the same as call distribution groups. See <i>call distribution group</i> above for the definition of a call distribution group.</p> |
| <b>Short Name</b>           | This is the name that is recorded in a voice mail box, so that when a voice mail message is copied to another mail box, this name recording is prepended to the message to identify who it is from. Also, the short name is used to identify all extensions that forward to the voice mail box where it is recorded, to identify the extensions in the dial by name auto-attendant.  |
| <b>system administrator</b> | This is the person in charge of administering the system, that is, adding or removing users, assigning users extension numbers and passwords, and changing other system parameters as needed. Please refer to the <i>NexPath Telephony Server System Administration Guide</i> for more details on what the system administrator can and cannot do.   |
| <b>user</b>                 | In this manual, the term “user” is used to describe someone who has been assigned an account on the system by the system administrator (i.e., someone who has been assigned a password, an extension number, a voice mailbox, etc.). A particular user is identified by the system via his secret password.  |
| <b>VMWI</b>                 | Visual Mail Waiting Indicator, the light on compatible telephones that indicates if there is unread voice mail. The VMWI standard for voice mail lights is also called the FSK technique (see the FSK definition in this glossary), and refers to a signalling technique for controlling the voice mail light with low speed modem-like tones. Telephones that are caller ID compatible, that have a voice mail indicator, are almost universally VMWI compatible, since both signalling techniques are in the same Bellcore standard.   |



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