
Installing AmAndA@Work.Group/ Windows

Version 3.xx

Installer's Guide: 8/15 Edition

AmAndA[®]

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Conventions

This manual uses the following terminology and conventions:

Amanda	The name by which this manual refers to the Amanda@Work.Group/Windows system to make reading about the system easier.
caller	Someone who calls into Amanda. A caller often obtains information, leaves a message for someone, and/or provides information.
user	Someone with an extension that Amanda transfers calls to and/or stores messages for. A user can access Amanda to play, delete, and send messages as well as set personal options such as Do Not Disturb.
fixed-space type	This guide displays token programming examples in fixed-space type.

Assumptions

This guide is written for an installer who is familiar with PCs and understands telephone switching systems. It assumes that you know something about the following:

- Computer terms, such as serial port, parallel port, and DOS prompt.
- How to safely open a personal computer to install or remove boards. For example, the computer must be turned off and you should be in an electrostatic discharge (ESD) safe environment.
- How to identify basic components of a personal computer, for example, motherboard, I/O controller, video card, I/O ports, modem, and so forth.
- How to connect the monitor, keyboard, and power to the computer.
- How to use DOS commands, such as CD, TYPE, COPY, and EDIT.
- How to get to the CMOS settings and make changes.

- Telephony terms, such as station side, CO, single-line, hunt group, pilot number, pickup group, coverage path, hookflash, call forward ring-no-answer, call forward busy, DTMF, and tone patterns.
- The difference between RJ-11 and RJ-14 connectors.
- The difference between the functions of the telephone switching system and Amanda.
- How to use a butt set or line monitor to observe test calls.

If you are unfamiliar with any of the above, please consider attending one of our regularly scheduled training seminars. Please contact our sales department for more information on dates and cost.

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Chapter 1: Introducing Amanda

Specification

The PC on which your Amanda system is installed has:

- Windows NT Server 4.0 with NT Service Pack 3 or higher or Windows 2000 Pro.
- A Pentium-class processor running at a minimum of 200MHz.
- A VGA card.
- A minimum of 64MB of RAM.
- A 3.5-inch, 1.44MB floppy disk drive and appropriate controller.
- An IDE hard disk drive with an access time of less than 14ms and appropriate IDE controller.
- A CD-ROM drive.
- No LPT2 port (if disabled, it must be non-interfering).
- To operate Amanda as a voice server over a network, you need a LAN that is not at I/O 300-310.
- Ten clients connections for Amanda clients such as Amanda Administrator and Amanda Messenger.

(You can purchase a Client Connection Bank (CCB) to activate additional clients.)

Amanda can run with any of the following voice boards:

- Brooktrout¹ 232, 432, 2132, and 4132 voice boards
- Brooktrout TR1100 board (for 24 or 48 ports)
- A Brooktrout RDSP/x0000 with any of the following:
 - An analog telephony interface using the Brooktrout RTNI-xATI board
 - A digital telephony interface using the Brooktrout RTNI-2T1 board
 - A digital telephone interface using a Brooktrout E1 board
- Vantage Volare board (with international approval and full rotary detection)
- Vantage PCI/4L and the Vantage PCI/8L boards from the Vantage PCI Series

Amanda@Work.Group/Windows can support 72 ports.

NOTES: This book contains no information about E1 boards and configuring Amanda to use them. Contact The Amanda Company for more information.

1. Brooktrout uses Rhetorex technology.

Amanda@Work.Group/Windows can support as many as 12 industrial-strength fax ports using Brooktrout TruFax/200 boards. Each board is a two-port ISA board. Its driver supports up to 6 boards. With fax modems, Amanda@Work.Group/Windows can support four fax ports. The user of TruFax/200 boards and fax modems is mutually exclusive. You can use only one of the two.

Environmental Requirements

- Locate the unit in an area free of excess moisture, dust, corrosive gases, and chemicals.
- Install Amanda securely on a table or desk at least 2 feet (.6 meters) above the floor.
- Use a properly grounded electrical outlet which is not controlled by a switch.
- Ensure that the operating temperature is 40 to 95 degrees Fahrenheit (2 to 35 degrees Centigrade), away from direct sunlight.
- Ensure that the humidity is 15% to 90%, noncondensing.
- For proper ventilation and servicing of the unit, provide at least 1 foot (0.3 meters) clearance on all sides and above the unit.

Electrical Requirements

- 90 to 130 VAC, 50 to 60 Hz, 3-prong outlet with separate ground, separately fused at 15 amps.
- Outlet not controlled by an on/off switch.
- Use of electrical line conditioning equipment such as a surge protector and an uninterruptible power supply (UPS) is strongly recommended.
- Grounding to comply with Underwriters Laboratories (UL) 1459.

Upgrade Issues

If you are upgrading from a previous release of Amanda@Work.Group/Windows, see the readme.txt file on your installation CD for detailed information about changes you may need to make to your system.

General Uses

Amanda@Work.Group/Windows is an automated attendant and voice processing system designed especially for ease of use and flexibility. As an NT-based product, Amanda takes advantage of the technical innovations in the personal computer market. In addition, Amanda's standard hardware components can be repaired or replaced by any PC service company. The computer on which Amanda is installed must be used only for Amanda.

Depending on what lines from your PBX are connected to Amanda and when calls are sent to Amanda to be processed, Amanda can serve you or your customer in a variety of ways.

Configured as a primary attendant: Amanda answers all your incoming calls on the lines you designate and allows the callers to direct their calls to a specific person or department without being placed on indefinite hold. If a specific person is unavailable, Amanda can take a private message for that person without missing any details.

In this case, the telephone switching system sends all incoming calls to Amanda.

Configured as a secondary attendant: Amanda assists your regular operator when call volume is heavy, allowing callers to direct their own calls or hold for the operator. Some companies provide specific incoming lines for Amanda as a backdoor attendant for calls from vendors, family members, friends, and special clients who prefer to have Amanda process their calls.

In this case, the telephone switching system sends incoming calls to Amanda only when the regular operator's extension is busy or not answered.

Configured as an off-duty attendant: Amanda provides 24-hour access to your company and its employees when an operator is unavailable.

In this case, the telephone switching system sends all incoming calls to Amanda while the office is closed.

Configured as a voice messaging center: Amanda takes messages and allows users to send, store, and forward messages, increasing productivity and enhancing inter-office communication.

In this case, the telephone switching system transfers any incoming call to Amanda if the extension being called is busy or not answering.

Configured as an information system: Amanda provides answers to your callers' most frequently asked questions (so you can avoid costly interruptions and provide a higher level of customer service 24 hours a day). Information such as your address, available hours, directions to your offices, and so forth, might be better handled by Amanda. Amanda's serial ports can access databases and other information stored in other computers, allowing Amanda to give callers information on account balances, train schedules, and so forth.

In this case, the telephone switching system or even an operator can send incoming calls to Amanda. Then automatically, or if selected, Amanda plays out the requested information.

Purpose of This Guide

This guide explains how to set up Amanda@Work.Group/Windows for the first time. This guide covers:

- Connecting and configuring Amanda to work with your telephone switching system
- Configuring Amanda to provide the voice mail services that the owner selects

Customer Service and Support

The Amanda Company provides customer service and support Monday through Friday from 8:00 A.M. to 8:00 P.M. Eastern Time, except holidays.

Customer Support:
(800) 800-9822

For sales, contact The Amanda Company at the East Coast office.

Dealer Sales:
Telephone: (800) 410-2745

Distribution Sales:

Telephone: (800) 410-2745

International Sales:

Telephone: (203) 744-3600

International Support:

Telephone: (203) 744-0860

Web Site:

<http://www.taa.com>

End User Support

End user support covers the actual usage of Amanda through the telephone, such as picking up messages, sending messages, changing greetings, and using distribution lists. Registered Amanda sites receive free end user support for the life of their systems. Be sure to send in your registration card!

System Administration Support

System administration support covers the configuration of Amanda; such as setting up mailboxes, programming notification, scheduling automatic changes, and creating reports. Registered Amanda sites receive free system administration support for up to six months after the installation. Be sure to send in your registration card!

Installation Support

Installation support covers the initial connection of Amanda to a telephone switching system as well as solutions to problems that occur when the system is reconfigured or Amanda is upgraded.

The Amanda Company also offers installation support to any dealer who buys a turnkey system.

Qualified Amanda marketing partners and solution providers, who are in good standing, receive installation support for any system.

Application Support

Application support covers extended features that can be added to Amanda using Amanda's powerful Token Programming Language. The Amanda Company can write custom applications for you. All Amanda Solution Providers, who are in good standing, receive application support. Please contact your Amanda sales representative for more information.

Chapter 2: Getting Started

Setting Up Your Turnkey System

This document outlines the procedures you must perform to set up your new Amanda@Work.Group/Windows voice server for use at a given site. While much of the configuration was done for you before the turnkey system was shipped, you, the network administrator, and the Amanda administrator must configure a number of site-specific options after removing the voice server from its box.

Logging On to Amanda

Amanda runs as a service at startup. You log on so that you can run the Setup utility, etc.

To start the computer and log on:

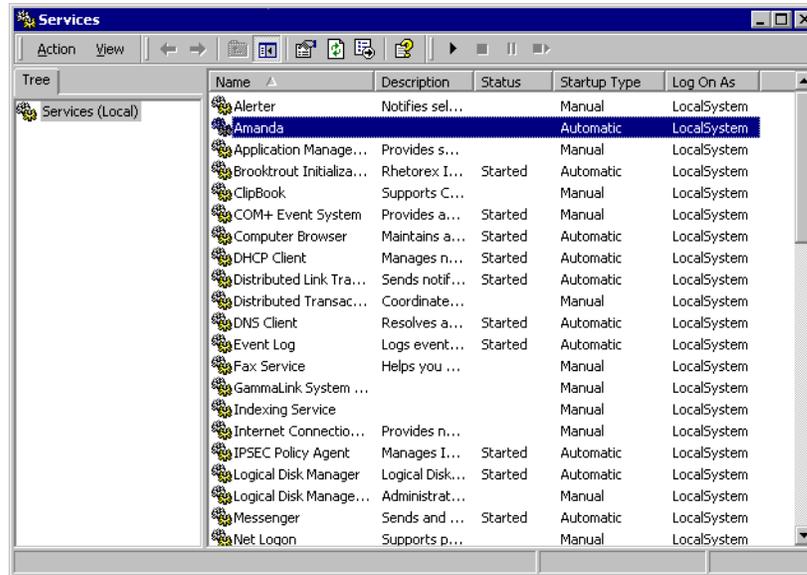
1. Turn on the computer.
The Windows NT or 2000 operating system starts. Eventually the Begin Logon dialog box tells you to press Ctrl+Alt+Delete to log on.
2. Press Ctrl+Alt+Delete to log on.
The Logon Information dialog box appears.
3. The logon name should default to Administrator. If not, type it in.
4. Type the password, which is AMandA, spelled exactly as shown here.
5. Click OK.

To confirm that your server is running as a Windows NT Service:

1. From the Start menu, select **Start⇒Settings⇒Control Panel**.
2. From the Control Panel window, select Services.
The Services dialog opens.
3. Scroll to locate Amanda in the Service list box.
The Status list indicates “started” and the Startup list is “Automatic.”

To confirm that your server is running as a Windows 2000 Service:

1. From the Start menu, select **Start⇒Settings⇒Control Panel⇒Administrative Tools⇒Services**.



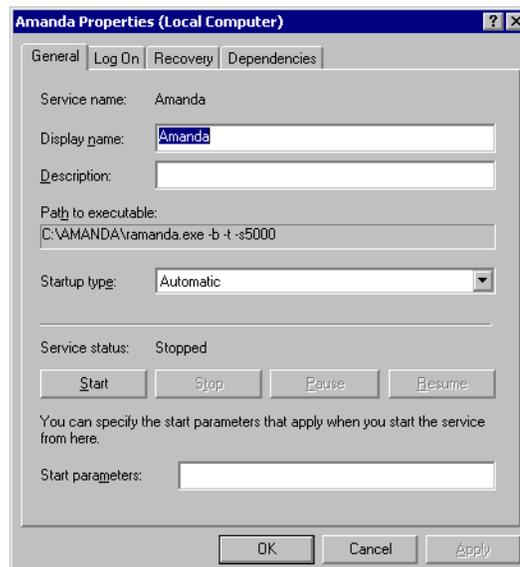
The Services window appears. It has toolbar buttons for Start and Stop that look like the play and stop buttons on a tape player.

2. Select Amanda in the Service list box.
3. Click the Start button.

To check Amanda's service properties:

- Within the Service Control Panel, double-click Amanda.

The Amanda Properties dialog box appears.



Shutting Amanda Down

To stop running your server as an NT Service (this shuts Amanda down):

1. From the Control Panel, select Services.
The Services dialog appears.
2. Scroll and select Amanda in the Service list box.
3. Click Stop.

If the server fails for any reason at step 3 above, the error messages are displayed in the Event Viewer application log.

To view the Windows NT service in the Application Log:

1. From the Start menu, select **Start⇒Programs⇒Administrative Tools (Common)⇒Event Viewer**.
The Event Viewer window appears.
2. On the Log menu, click Application.
The Event Viewer Application Log window displays service information entries.
3. Double-click an entry to view the Event Detail dialog.

To stop running your server as a Windows 2000 Service (this shuts Amanda down):

1. From the Start menu, select **Start⇒Settings⇒Control Panel⇒Administrative Tools⇒Services**.
The Services dialog appears.
2. Select Amanda in the Service list box.
3. Click Stop.

Using Setup to Define Codes, Integration Patterns, and Other Parameters

You must configure Amanda to work properly with your telephone switching system and to let Amanda know your customer's voice mail and other preferences. The Amanda Company provides the Setup utility to make configuring Amanda easy.

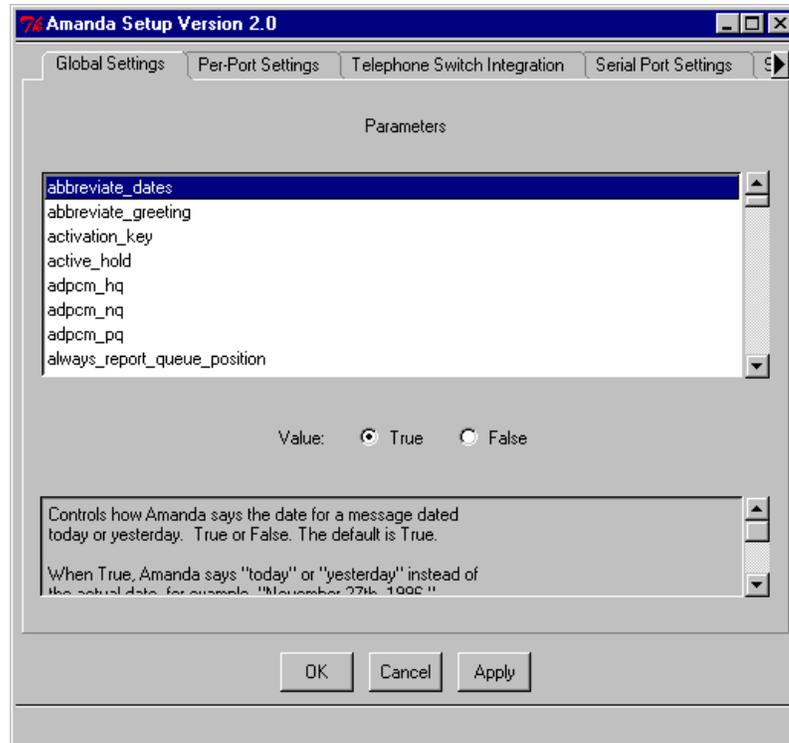
You run Setup to configure dial codes, DTMF integration patterns, and Amanda's system configuration parameters. This section explains how to navigate from one tab to another, setting options correctly.

You can use the Setup utility while the Amanda system is running, but your changes do not go into effect until the next time you start Amanda.

To run the Setup utility:

1. From the Start menu, select **Start⇒Programs⇒Amanda Server⇒Setup**.

The Amanda Setup dialog box opens, displaying the Global Settings parameters.



To define global settings:

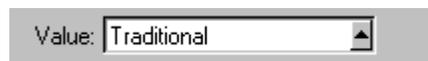
NOTE: See “Chapter 5: Configuring Amanda” for more information. Use the First Use Questionnaire to determine what configuration options must be set.

- a. Scroll the list box until you see the parameter you want to change.
- b. When you select the parameter from the list box, the lower portion of the dialog box changes to a description of the parameter as help in setting it. Other changes are because of the parameter’s type.

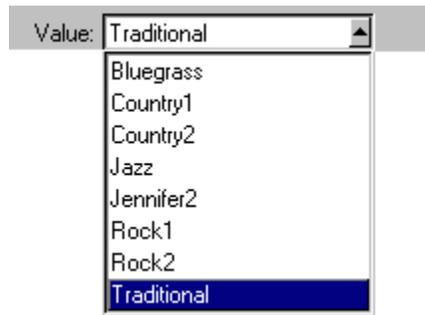
If the parameter is a Boolean, you select a True or False option button.



If the parameter has a few predefined values, you select from a list box of those settings.



You click the triangular button to see the possible settings:



If the parameter is a number, you usually use a spin box to select the setting.



Clicking the upper triangular button raises the number. Clicking the lower button reduces the number.

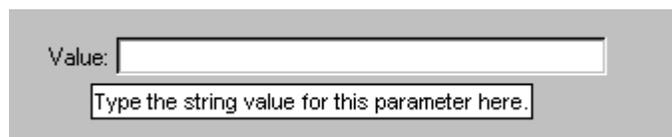
Sometimes a number is one of a set of predefined values and appears in a list box.



If the parameter can take any number of alphanumeric settings, you type the setting into a text box.



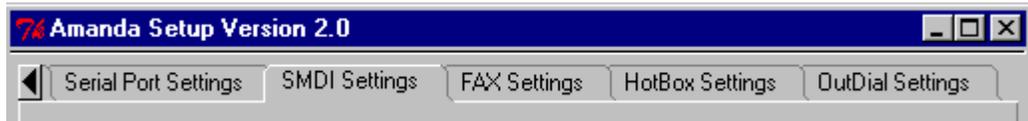
If you place the mouse cursor over a box's label, such as Value, and waiting a couple of seconds, the Setup utility displays helpful information.



You scroll the Tab bar, initialing by clicking the triangular button at the right end of the Tab bar.



Depending what tab is selected the triangular button can appear at either or both ends.



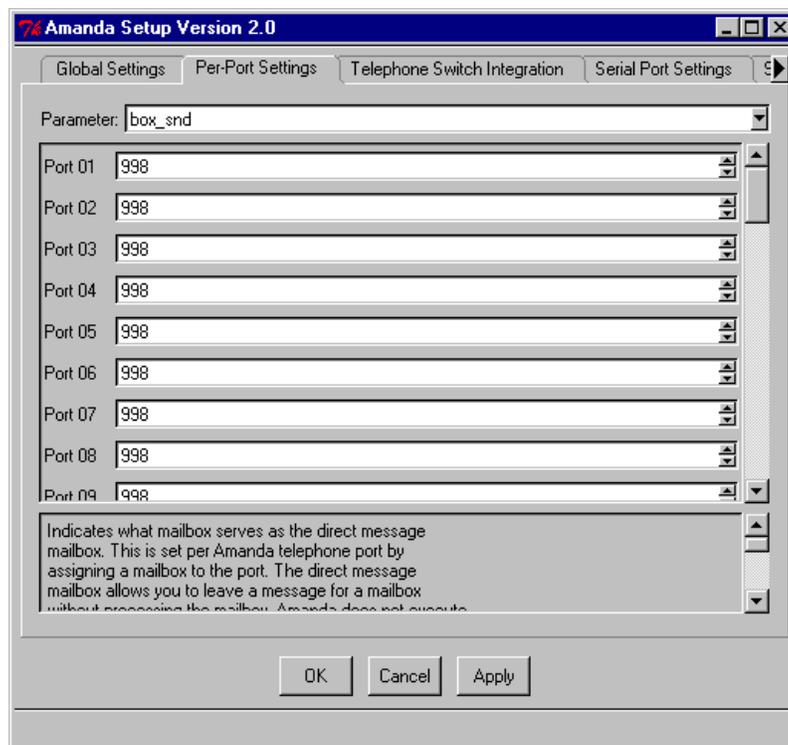
- c. When you are finished, click Apply (and another tab) or OK (to exit and save your changes).

Global settings are stored in the install.cfg file.

To define per-port settings:

See “Per Port Settings” on page 219 for an explanation of the per-port parameters.

- a. Select the Per Port Settings tab.



- b. Select the parameter you need from the parameter list box.
- c. Select a value, often a mailbox number, for each port.

This dialog displays the maximum number of ports that the Amanda system can support. You only need to set the ports that you use.

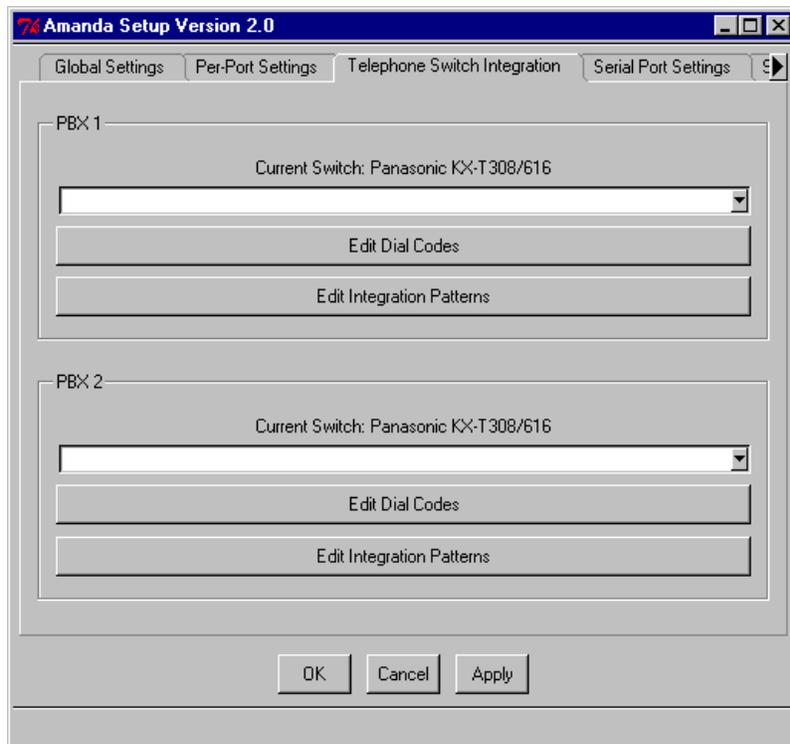
- d. When you are finished, click Apply (and another tab) or OK (to exit).

Per port settings are stored in the install.cfg file.

To define dial codes:

See “Defining Dial Codes” on page 25 for more information. The codes you define end up in the C:\AMANDA\PBX.DB\1001.PBX file.

- a. Select the Telephone Switch Integration tab.



You will be setting dial codes for PBX 1 and PBX 2 (if you have a second switching system attached to your Amanda system.)

- b. Use the correct group box for the switch (PBX 1 or PBX 2).
- c. Verify or select the correct switching system from the list box.
- d. Click Edit Dial Codes.

The Dial Codes dialog box opens.

Setting	Value
What to dial to put a caller on transfer hold:	F-
What to dial when there is no transfer dial tone:	F-
What to dial to return to caller after ring no answer:	F-
What to dial to return to caller after busy:	F-
What to dial after a call screening reject:	F-
What to dial to connect a caller to an extension:	H
What to dial BEFORE dialing the Mailbox extension:	
What to dial AFTER dialing the Mailbox extension:	H
What to dial when the system first starts up:	
What to dial when the system performs a shutdown:	
What to dial to create/record a conference call:	
Which DTMF tone(s) to listen to for hangup detection:	D
What to dial to set the message waiting indicator on:	#63-%U
What to dial to set the message waiting indicator off:	#64-%U
Number of seconds to wait for dialtone detection:	4
Number of 1/100 seconds to use for Flash time:	55

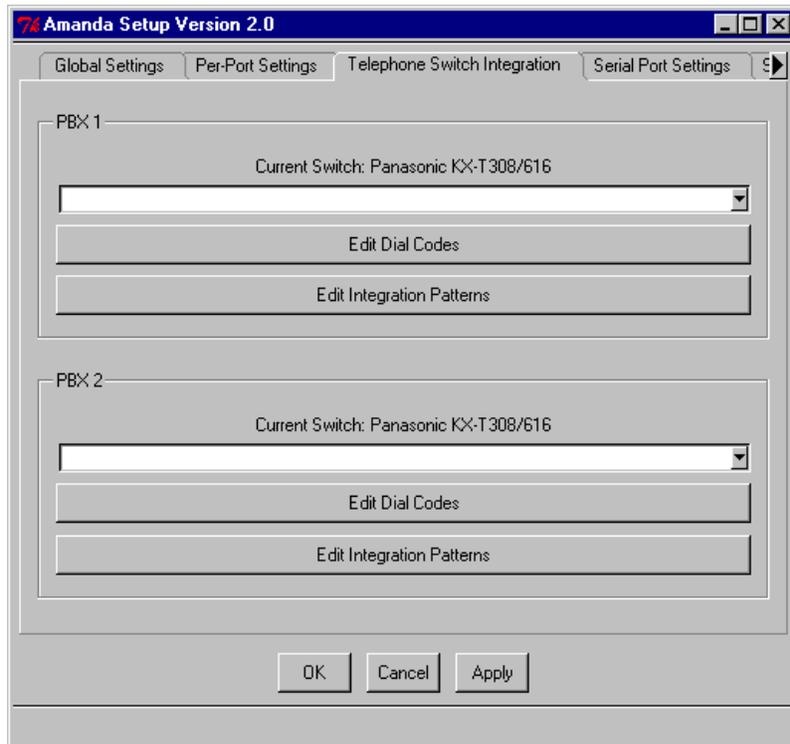
- e. Type the codes in the text boxes.
- f. Select numbers of seconds and partial seconds for dial tone detection and flash time.
- g. Click OK until you return to the Switching System Integration tab.
- h. Click Apply (and another tab) or OK (to exit).

Dial code settings are stored in the 1001.PBX or 2001.PBX file.

To define telephone system integration patterns (DTMF):

You need to verify or create integration patterns using the Setup utility. See “Using the Trace File for Integration” on page 31 for information about retrieving integration information from the trace file. See “Adding Integration Patterns” on page 38 for more details about adding patterns to the .PBX files.

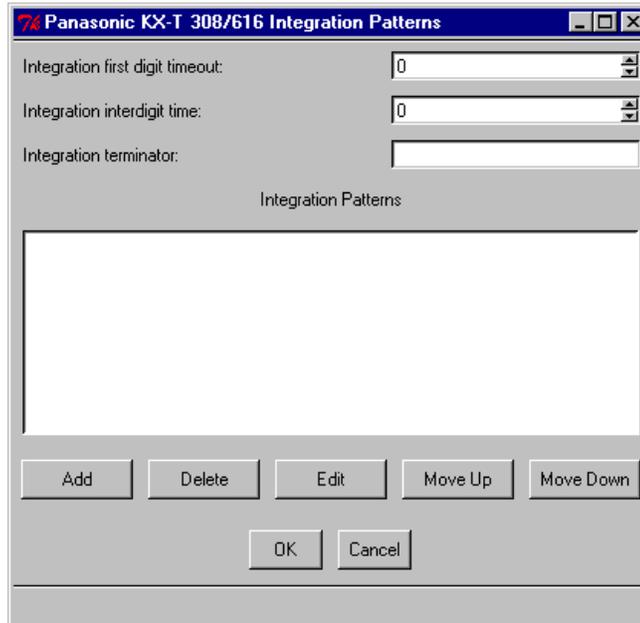
- a. Select the Telephone Switch Integration tab.



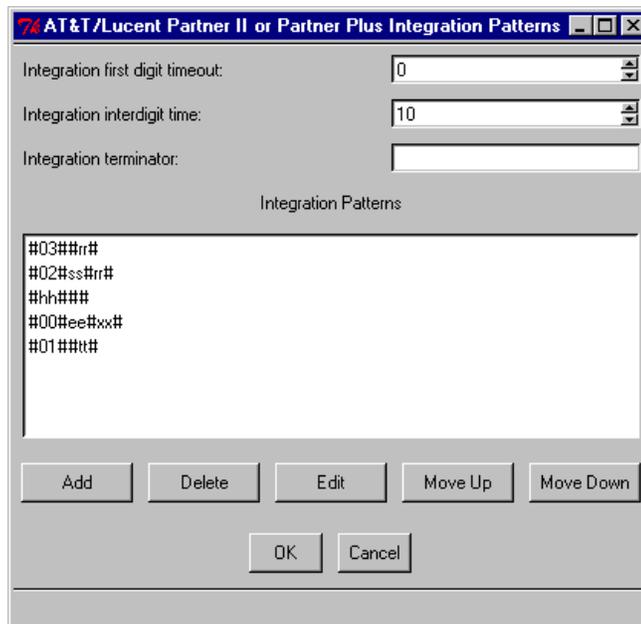
You will be setting dial codes for PBX 1 and PBX 2 (if you have a second switching system attached to your Amanda system.)

- b. Use the correct group box for the switch (PBX 1 or PBX 2).
- c. Verify or select the correct switching system from the list box.
- d. Click Edit Integration Patterns.

The Integration Patterns dialog box opens. If no integration patterns have been set for this switching system, the dialog looks like the following figure:



If some integration patterns have been set, the dialog box looks similar to the following figure:



- e. Click Add to create another integration pattern.
- f. Then type the pattern in the new text box that appears on the dialog box.
- g. Repeat steps e and f for other patterns.
- h. To edit an existing pattern, select the pattern and click Edit. Use the Edit dialog box to modify the pattern. Then click OK.
- i. To delete a pattern, select the pattern and click Delete.

- j. To change the order of your patterns, select a pattern to be moved. Click Move Up or Move Down.
- k. Click OK to return to the Switching System Integration dialog box.
- l. Click Apply (and another tab) or OK (to exit).

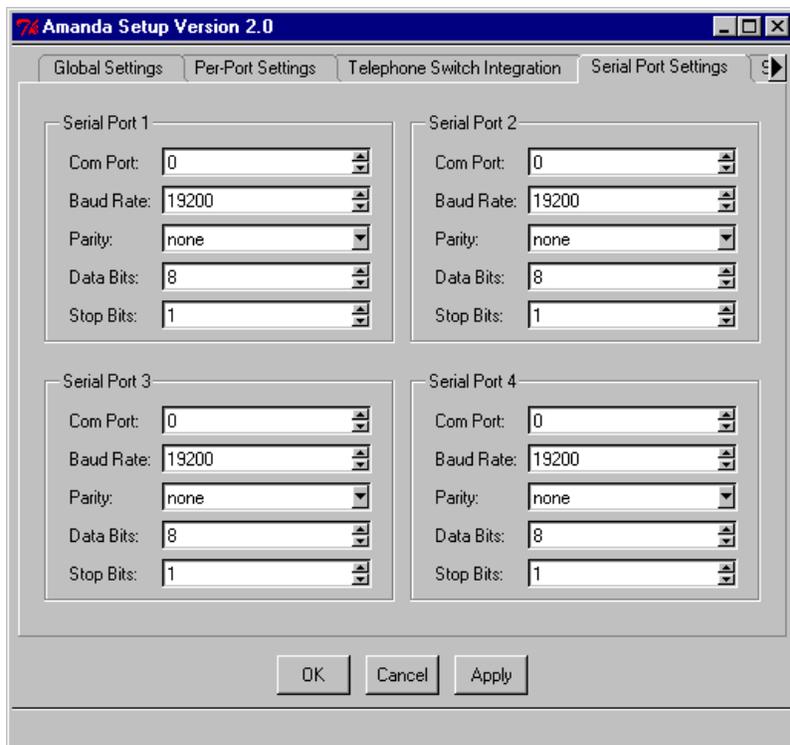
TIPS: Click the Delete button next to an integration pattern to delete a pattern. You can also edit existing patterns by placing your cursor in the text box for that pattern.

Integration settings are stored in the 1001.PBX or 2001.PBX file.

To define serial port settings:

You define serial port settings for any serial ports used by Amanda, for example, for faxing and serial integration (SMDI). See “Using a Fax Modem” on page 85 for more information about using a fax modem with Amanda. See “Chapter 8: Using Serial Integration” for details about serial integration.

- a. Select the Serial Port Settings tab.



- b. Use one of the Serial Port group boxes for each device. It is a good idea to use Serial Port 1 for COM1, Serial Port 2 for COM2, etc., but that isn't required.
- c. use the spin boxes and list boxes to select the correct settings for the device.
- d. Click Apply (and another tab) or OK (to exit).

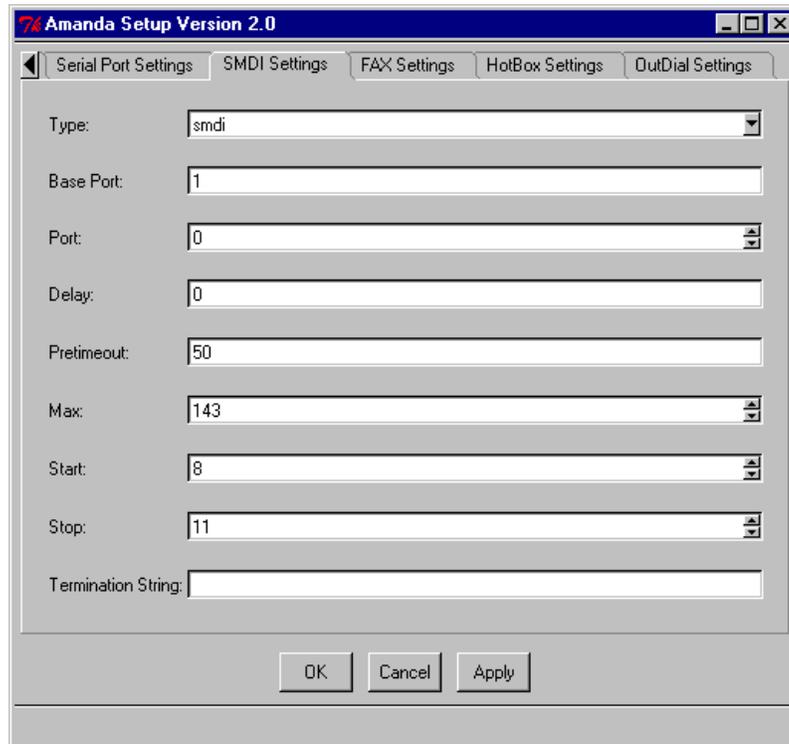
The Serial Port Settings tab is only one of the tabs that must be set for serial integration and fax modems. For serial integration you must also set the options on the SMDI Settings tab. For a fax modem, you must set the options on the Fax tab, and you might set the Hot Box Settings tab.

Serial port settings are stored in the install.cfg file.

To define serial integration settings (in addition to those for the serial port):

See “Chapter 8: Using Serial Integration” for details about the settings to be used for each type of serial integration:

- Bellcore Standard
 - NEC 2000 and NEC 2400
 - AT&T System 75 or Definity-G3
 - Ericsson MD-110 systems
 - Generic which can apply to other types of serial integration when the options are set correctly
- a. Select the SMDI Settings tab.



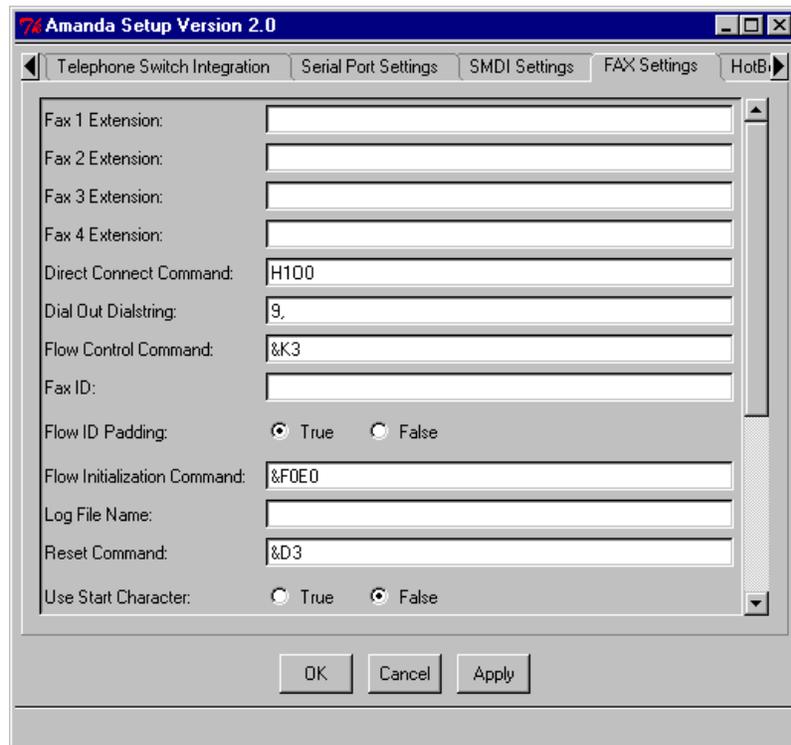
- b. This dialog has list boxes, text boxes, and spin boxes.
- c. Click Apply (and another tab) or OK (to exit).

SMDI settings are stored in the install.cfg file.

To define fax settings (in addition to those for the serial port):

See “Using a Fax Modem” on page 85 for more information about using a fax modem with Amanda. You might also need to use the Hot Box Settings tab. See “Detecting a Fax Machine Automatically” on page 90.

- a. Select the Fax Settings tab.



- b. Set the appropriate text boxes, etc. for your fax modem.

Make sure that you scroll to see and select values for the complete set of parameters.

- c. Click Apply (and another tab) or OK (to exit).

Fax settings are stored in the install.cfg file.

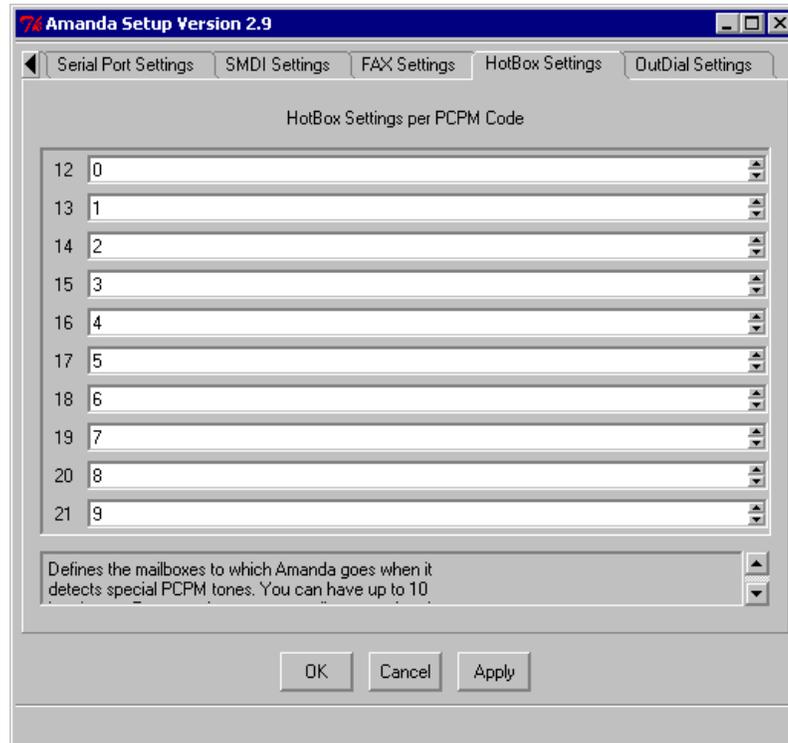
To define hot box settings:

A hot box is mailbox to which Amanda goes when the system detects special PCPM tones. You can have up to 24 hot_boxes. For example, you can configure a hot_box to detect connections from TDD machines for deaf communications.

In most cases, only one hot_box is defined to detect fax tones and the remainder are unused.

See “Hot Box Settings” on page 227 for an explanation of the hot box settings.

- a. Select the Hot Box Settings tab.



- b. Set one or more of the possible PCPM codes.
 c. Click Apply (and another tab) or OK (to exit).

Hot box settings are stored in the install.cfg file.

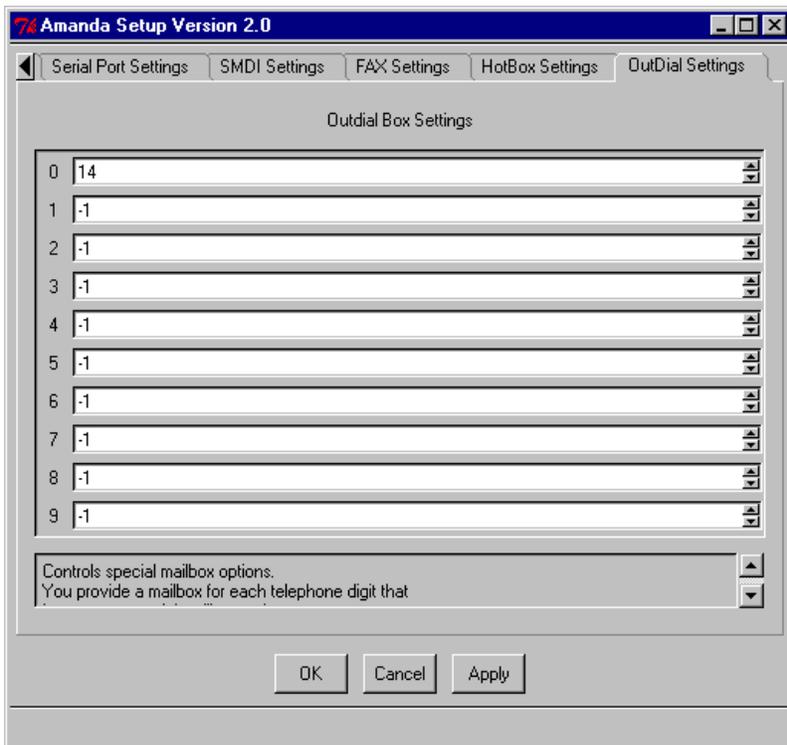
To define outdial settings:

The outdial parameter settings control special mailbox options.

You provide a mailbox for each telephone digit that becomes a special mailbox option. While logged into a mailbox, a user presses 7 to reach special options, then a digit, 0-9, depending on what you specify here. Then Amanda executes the tokens in the extension field of the mailbox you specify for that digit.

See "Outdial Settings" on page 228 for an explanation of the outdial settings.

- a. Select the Outdial Settings tab.



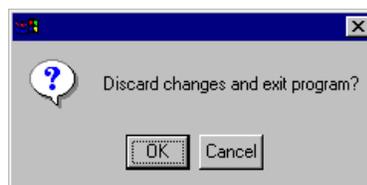
- b. Set one or more digit to the appropriate mailbox number.
- c. Click Apply (and another tab) or OK (to exit).

Outdial settings are stored in the install.cfg file.

To exit without saving any changes that have not already been applied:

- a. Click Cancel.

You see the following message:



- b. Click OK to exit Setup.

Using AccuCall Wizard to Create a PCPM Tone Table

The Brooktrout drivers in your Amanda voice server must be trained to recognize the tones your telephone switching system uses for busy, hangup, and so on. AccuCall Wizard is a painless way to determine the frequency and cadence of tones. If it is not successful AccuCall Plus can resolve problem tones.

To train your Brooktrout voice boards to recognize tones:

1. Connect your telephone switching system to the voice boards in Amanda voice server.
2. Program your telephone switching system.
3. From the Start menu, select **Start⇒Programs⇒Brooktrout⇒AccuCall for Windows**.
4. Follow the instructions in “Using AccuCall Wizard” on page 57.

Setting Up pcANYWHERE Software

Your Amanda voice server comes with an external data modem and a copy of pcANYWHERE 9.2, an application that allows The Amanda Company customer service representatives to dial into your Amanda system. You can run pcANYWHERE over a TCP/IP network instead of the modem—if that is more convenient.

You can also access the server using pcANYWHERE. However, The Amanda Company only provides one license for pcANYWHERE, and that is for the copy of it running on Amanda voice server. You will need one for your workstation. pcANYWHERE can be purchased at a PC software store.

The modem software must be installed before you start the following procedure. (In the Control Panel, click Modems and add your modem’s software, etc.)

To setup pcANYWHERE:

1. Unless you will be using the network for communication, connect the external data modem to COM4. This is the only 25-pin serial port on your system.
2. From the Start menu, select **Start⇒Programs⇒Symantec⇒pcANYWHERE**.
pcANYWHERE’s main window appears.
3. Click the Be A Host PC button to specify your connection type.
If you use a dial-up connection with a modem, select Modem.
If you use a TCP/IP connection, select Network.
4. On the File menu, select Wait For Connection.
5. Once the connection is made, you are asked for your logon account name and password.

The default account name is AMANDA. The default password is AManda.

NOTE: The default security type is pcANYWHERE security.

If you have any additional questions or problems using pcANYWHERE, please contact Amanda technical support at (800) 800-9822.

Running Amanda Server as a Standalone

If you are not connecting Amanda voice server to a network, the out-of-box settings for networks will not cause a problem. However, when running clients such as Amanda Administrator and Amanda Monitor on the server, use localhost as the server name when you log on to the server.

Attaching Amanda Server to a Network

Your Amanda voice server can run on a TCP/IP network. The two types of networks you may encounter are Windows Domains or Windows Work Groups. Before attaching Amanda to the network, you set up the appropriate accounts and addresses. See the instructions in “When Working with a Windows NT or 2000 Domain” and “When Working with a Windows WorkGroup” below.

When Working with a Windows NT or 2000 Domain

Every computer that is a member of the domain must have an account on the PDC (primary domain controller). These accounts give computers the rights needed to access other computers on the network and are created by your network administrator.

The Amanda Server computer must have a PDC account so that it can be logged into the network. You must configure the Amanda computer for the same domain as the other computers on the network and assign it a static (fixed) IP address.

In a Windows Domain environment, all security is centralized using the PDC. Only after you assign an IP address to the Amanda Server computer and log into the domain using the new account created for it can you access the network. You should see the Amanda Server computer in Network Neighborhood for the domain.

When Working with a Windows WorkGroup

All the computers in the network are peers so there is no centralized security. This means that network users can access the Amanda Server computer as long as you create Amanda accounts for them on the Amanda Server computer. The Amanda system handles its own security under the Administrative Tools / User Manager.

To make things easy, create Amanda accounts using the same names and passwords that the users enter to log on to the network. In this configuration, all you need to do is configure the Amanda Server for the same WorkGroup name and assign it a static (fixed) IP address. The subnet mask should also be the same as the other computers on the network.

NOTE: If your Windows server dynamically (automatically) assigns IP addresses using a DHCP, you must still assign the Amanda Server computer a fixed IP address.

Setting Network Properties

Regardless of the type of network, you must set network properties. However, there is an additional step for Windows NT or 2000 Domain networks.

To set network properties:

1. Right-click the My Network Places icon on the computer's desktop.
A dialog box appears.
2. Right-click the Local Area Connection and click Properties.
The General tab displays your basic network configuration listing component services and network protocols.
3. Select the Internet protocol and click Properties.
4. Configure the Amanda system with an IP address and subnet mask using the same TCP/IP scheme as the other computers on your network.
 - a. See your network administrator for a fixed IP address you can assign to the WorkGroup II system.
 - b. Enter the IP address, subnet mask, and gateway IP if applicable and click OK.
5. On the desktop:
 - a. Right-click the My Computer icon and click Properties.
 - b. Click the Network Identification tab and then the Properties button.
 - c. Where it says "Member of", configure this system for the same Domain or Work group the Amanda Server will be joining, and click OK.
 - d. If you are adding the Amanda server to a Domain, your network administrator will need to validate this computer so it can join the network by providing the correct account and password when prompted. Click OK when this is done.

NOTE: When configuring the Amanda Server for a Work group, the administrator account and password are not required.
6. Reboot the computer:
 - a. Click **Start⇒Shutdown** from the Start menu.
 - b. Select the Restart option button from the Shut Down Windows dialog box.
7. Do not make the recovery disk until after that reboot.

Backing Up the Initial Amanda Settings

The Amanda Company strongly recommends that you back up your initial Amanda settings, but only AFTER doing all of the following:

- After creating the PCPM tone table Using AccuCall Wizard (or AccuCall Plus)
- After defining dial codes using Amanda's Setup utility
- After defining integration patterns using trace files and Amanda's Setup utility
- After setting Amanda's configuration options using Amanda's Setup utility

To back up initial settings:

1. Have one empty, formatted floppy disks ready for use.
2. From the Start menu, select **Start⇒Programs⇒Amanda⇒InitBackup**.
3. Follow the directions on the screen.

NOTE: To restore the settings backed up in this way, select **Start⇒Programs⇒Brooktrout⇒Initial Settings Restoration Utility**.

Creating an NT Emergency Repair Disk

The Amanda Company strongly recommends that you create an NT emergency repair disk in case any problems should occur with your NT system. Only create this disk **AFTER** rebooting the computer so that all the network settings you specified are in effect. (This is the reboot mentioned in “Attaching Amanda Server to a Network” on page 21—not an additional one.)

To create the NT Emergency Repair Disk:

1. Have a floppy disk ready for use (it doesn't have to be formatted).
2. From the Start menu, click **Start⇒Run**.
The Run dialog box appears.
3. Type the following in the Open text box:
`rdisk /s`
4. After some configuration information is saved, a message box asks if you want to create an Emergency Repair Disk.
5. Click Yes and follow the directions on the screen.

¹Chapter 3: Defining Dial Codes

Defining Dial Codes

To communicate with the telephone switching system, Amanda must know the switching system's dial codes. Most Amanda systems are connected to only one switching system, but you can connect your system to two.

By default, the 1001.PBX file is used to store dial codes for the first switching system. If you have a second switching system, it uses 2001.PBX.

As part of a new installation, the file 1001.PBX is created for you based on the Panasonic KX-T308/616/1232 telephone switching system. If you are upgrading your Amanda system, the file you used for dial codes in the past will be renamed to 1001 (and 2001 if two switches are used). Also, the Setup utility may not know what switching system your dial codes file is based on. The names of the switching systems appear in the .PBX files containing codes for these systems and are displayed by the Setup utility. Yours may be based on an older version of Amanda that did not have the switching system names in the files. If so, yours may be identified by Setup as "not defined."

NOTE: Instead of using Setup, you can edit your .PBX file in the C:\AMANDA\PBX.DB directory using the JOVE utility. See "Chapter 12: Utilities," in *Administering Amanda@Work.Group/Windows* for information about JOVE.

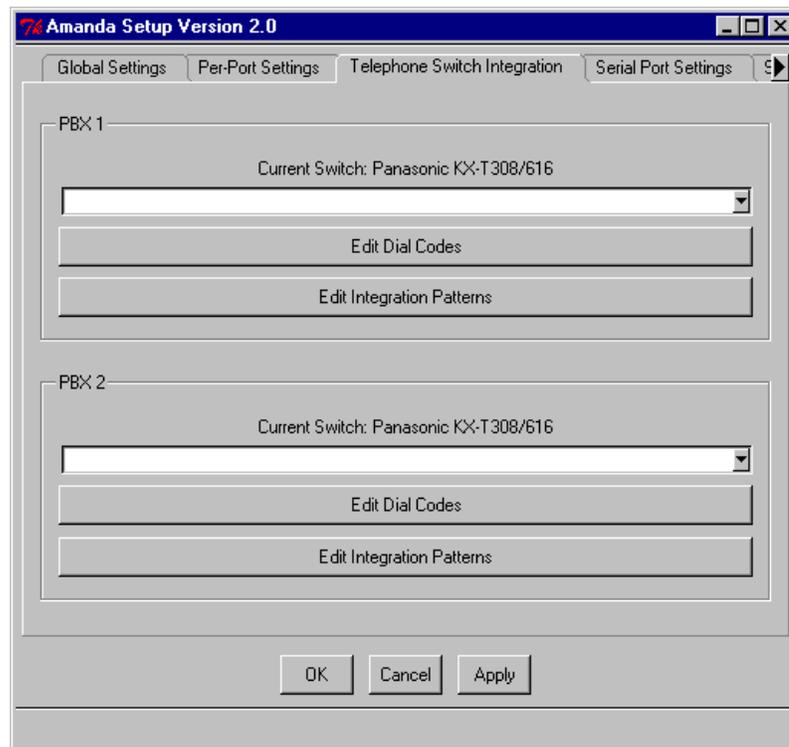
To define dial codes:

1. From the Start menu, select **Start⇒Programs⇒Amanda Server⇒Setup**.

The Amanda Setup dialog box opens.

The Setup utility's basic operation is explained in "Logging On to Amanda" on page 5.

2. Select the Telephone Switch Integration tab.



Most companies have only one telephone switching system and it is probably already listed as the current switch in the PBX 1 group box. However, your company may have two telephone switching systems.

3. If the wrong telephone switching system is current or no telephone switching system has been selected, select the switching system for which you are setting dial codes from the current switch drop-down list box.

For example, if you are setting up a second switching system, you use the list box in the PBX 2 group box. Otherwise you use the list box in the PBX 1 group box.

If your telephone switching system is not listed, pick one that is similar to it and define its settings to fit your system.

4. Click Edit Dial Codes.

The Dial Codes dialog box opens.

Label	Value
What to dial to put a caller on transfer hold:	F-
What to dial when there is no transfer dial tone:	F-
What to dial to return to caller after ring no answer:	F-
What to dial to return to caller after busy:	F-
What to dial after a call screening reject:	F-
What to dial to connect a caller to an extension:	H
What to dial BEFORE dialing the Mailbox extension:	
What to dial AFTER dialing the Mailbox extension:	H
What to dial when the system first starts up:	
What to dial when the system performs a shutdown:	
What to dial to create/record a conference call:	
Which DTMF tone(s) to listen to for hangup detection:	D
What to dial to set the message waiting indicator on:	#63-%U
What to dial to set the message waiting indicator off:	#64-%U
Number of seconds to wait for dialtone detection:	4
Number of 1/100 seconds to use for Flash time:	55

Some codes may have been preset for this telephone switching system, but you can change them, if necessary, and add others.

Pressing the Tab key moves you from one code to the next.

5. Use the following Dial Codes Table to understand each of the codes displayed on the screen.
6. Type in appropriate new settings, change existing settings, and leave unused dial codes blank.
7. When you have finished defining the dial codes, click OK to return to the Telephone Switch Integration tab.
8. Click OK to exit Setup or select other buttons and tabs as needed.

Dial Code Parameter

Dial Code Parameter	Description
What to dial to put the caller on transfer hold:	<p>The code Amanda dials to ask the telephone switching system to put the caller on transfer hold before transferring a caller to an extension.</p> <p>Usually, this code is “F-” (a hookflash followed by a half-second pause). This may need to be changed to “F--” (a hookflash followed by a one-second pause) or “F,” (a hookflash followed by a two-second pause) for telephone switching systems that are slow to provide a transfer dial tone after a hookflash. (Don’t use the quotation marks in the dial code.)</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_dtwait option.</p> <p>If tmo_dtwait is greater than 0, the number of dashes set for this option is irrelevant. Use the value 0 for tmo_dtwait for faster call processing. For more information about tmo_dtwait, see “Number of seconds to wait for dial tone detection:” on page 30.</p>
What to dial when there is no transfer dial tone:	<p>The code Amanda dials to return to the caller if both of the following are true:</p> <ul style="list-style-type: none"> You configure Amanda to wait for a transfer dial tone before transferring a call to an extension There is no transfer dial tone <p>In this case, Amanda treats the attempted transfer as though the extension was busy. Some telephone switching systems use “F-”, others use “-”. (Don’t use the quotation marks in the dial code.)</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_ndtret option.</p>
What to dial to return to the caller after ring no answer:	<p>During supervised transfers, if the extension rings the specified number of times but is not answered, Amanda dials this code to ask the telephone switching system to reconnect the caller to Amanda. (See the questionnaire in “Chapter 5: Configuring Amanda” for more information about configuring the number of rings.)</p> <p>Usually, this code is “F-”. (Don’t use the quotation marks in the dial code.)</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_rnaret option.</p>
What to dial to return to the caller after busy:	<p>During supervised transfers, Amanda dials this code to ask the telephone switching system to reconnect the caller to Amanda if the extension is busy.</p> <p>Usually, this code is “F-”. (Don’t use the quotation marks in the dial code.)</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_bsyret option.</p>
What to dial after a call screening reject:	<p>The code Amanda dials to reconnect to the caller if all of the following are true:</p> <ul style="list-style-type: none"> Amanda is performing a supervised transfer Call screening is ON The user at the extension that was called <i>rejects</i> the caller <p>In this case, Amanda plays the mailbox’s current greeting.</p> <p>Usually, this code is “F-”. (Don’t use the quotation marks in the dial code.)</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_hupret option.</p>

Dial Code Parameter

Dial Code Parameter	Description
What to dial to connect a caller to an extension:	<p>During supervised transfers, Amanda dials this code to complete the call transfer after detecting an answer at the called extension. If call screening is ON, Amanda dials this code only after the user at the extension <i>accepts</i> the call.</p> <p>Usually, this code is “H” (for Hang up). (Don’t use the quotation marks in the dial code.)</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_connect option.</p>
What to dial <i>before</i> the mailbox extension:	<p>If Amanda needs to dial something <i>after</i> dial tone detection, but <i>before</i> dialing the extension number, enter that code here.</p> <p>Usually this is left blank.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_prefix option.</p>
What to dial <i>after</i> the mailbox extension:	<p>If Amanda needs to dial something <i>after</i> dialing the extension number, enter that code here.</p> <p>Don’t use an “H” for a blind transfer here because this setting is global. Sometimes you need “1-” to bypass the hands-free answer feature (voice announce) on some telephone systems. (Don’t use the quotation marks in the dial code.)</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_suffix option.</p>
What to dial when the system first starts up:	<p>If you want Amanda to dial some initialization codes as the system starts up, define those codes here. For example, you may want to remove call forwarding on the ports.</p> <p>Usually this is left blank.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_init option.</p>
What to dial when the system performs a shutdown:	<p>If you want Amanda to dial certain codes as the system shuts down, define those codes here. For example, enabling call forwarding on the ports lets a live operator take the calls when Amanda shuts down.</p> <p>Usually this is left blank.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_stop option.</p>
What to dial to create/record a conference call:	<p>Controls how to do a conference call when the called party answers the telephone. You provide the digits used to conference the caller, called party, and Amanda (for example, “*3”). (Don’t use the quotation marks in the dial code.) If your telephone switching system does not have this capability, leave it blank.</p> <p>For example, if the Extension field for a mailbox contains 127KM, Amanda dials 127. When an answer is detected, Amanda dials the conference dial code (such as “*3”) which conferences the caller, the called party, and Amanda. Instead of hanging up when the system connects the two parties, Amanda records the conversation as a message in mailbox 127.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_conference option.</p>

Dial Code Parameter

Dial Code Parameter	Description
Which DTMF tone to listen to for hangup detection:	<p>If your telephone switching system plays a specific DTMF tone or sequence of tones when a caller hangs up (to make hangup detection faster), enter that DTMF digit or sequence here.</p> <p>If your telephone switching system has this capability, the code is usually the letter “d” which represents DTMF D. This may be a sequence of DTMF digits rather than a single DTMF digit. The maximum length is 10 characters. If your system does not support this feature, leave it blank.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dt_hangup option.</p>
What to dial to turn on the message waiting indicator:	<p>Controls what DTMF digits are dialed by Amanda to enable message notification automatically when a new message is left. This value is used only with the KA(1) token.</p> <p>Most popular telephone switching systems have a default value. If this field is blank for your switching system, enter the DTMF digits which enable a message waiting indicator on your telephone sets. To have Amanda dial these digits, use KA(1) in the notify method field. Amanda replaces KA(1) with these digits. For more information, see “KA(on_off)” on page 147 for more information.</p> <p>NOTE: New installations automatically have notification templates that turn message waiting indicators on and off. using the KA(1) token.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_light_on option.</p>
What to dial to turn off the message waiting indicator:	<p>Controls what DTMF digits are dialed by Amanda to disable message notification automatically when a new message is played or deleted. This value is used only with the KA(0) token.</p> <p>Most popular telephone switching systems have a default value. If this field is blank for your switching system, enter the DTMF digits which disable a message waiting indicator on your telephone sets. To have Amanda dial these digits, use KA(0) in the notify method field. Amanda replaces KA(0) with these digits. For more information, see “KA(on_off)” on page 147 for more information.</p> <p>NOTE: New installations automatically have notification templates that turn message waiting indicators on and off. using the KA(0) token.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the dl_light_off option.</p>
Number of seconds to wait for dial tone detection:	<p>This is the number of seconds Amanda waits for your telephone switching system to provide a continuous dial tone for one full second. If your system has few DTMF receivers or intercom paths for call transfers, one may not be immediately available for Amanda to transfer a call. In this case, this number should be greater than 0.</p> <p>Use 0 when Amanda does not wait for a dial tone (as when the telephone switching system returns stutter dial tone or silence on a transfer). A good value is 4 (seconds) when the system does wait for a dial tone. The range is 0–127.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the tmo_dtwait option.</p>
Number of 1/100 seconds to use for Flash time:	<p>Determines how long Amanda remains on-hook while performing a hookflash. The value is in hundredths of seconds.</p> <p>The usual value is 55 (just over half a second).</p> <p>When set too short, the hookflash does not happen; when set too long, it hangs up.</p> <p>If you are editing C:\AMANDA\PBX.DB\1001.PBX instead of using Setup, this is the flashtm option.</p>

Chapter 4: Defining Integration Patterns

Using the Trace File for Integration

If your telephone switching system supports DTMF integration (also called inband integration), you must verify or set integration patterns for it using the Setup utility.

Depending on the telephone switching system you select, some of the integration patterns might be already filled in. Many telephone switching systems are programmable, so patterns supplied by The Amanda Company can still need modification.

When The Amanda Company could not supply integration patterns, you can usually find them in the manual that comes with your telephone switching system.

If all else fails, you can:

1. Perform tests that add integration information to the TRACE.OUT file.
2. Convert that information to a set of integration patterns.
3. Add the integration patterns to the 1001.PBX file in the C:\AMANDA\PBX.DB directory using the Setup or JOVE utilities.

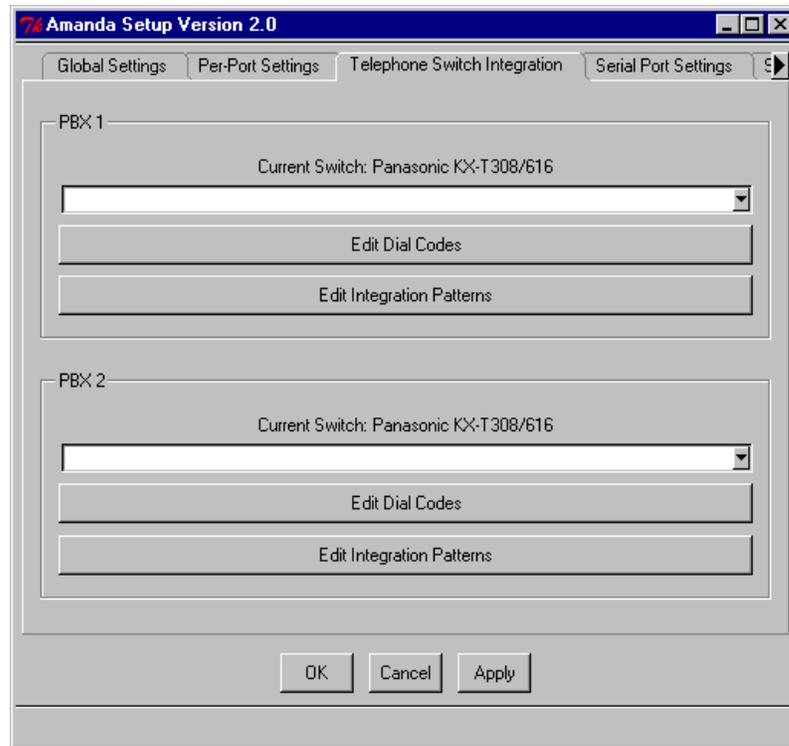
NOTE: See “Chapter 12: Utilities,” in *Administering Amanda@Work.Group/Windows* for information about JOVE.

Using an Integration Pattern to Capture Data

To perform the tests, you use only one integration pattern in the 1001.PBX or 2001.PBX file.

To create an integration pattern for use during testing:

1. From the Start menu, select **Start⇒Amanda Server⇒Setup**.
The Amanda Setup dialog box opens.
2. Select the Telephone Switch Integration tab.



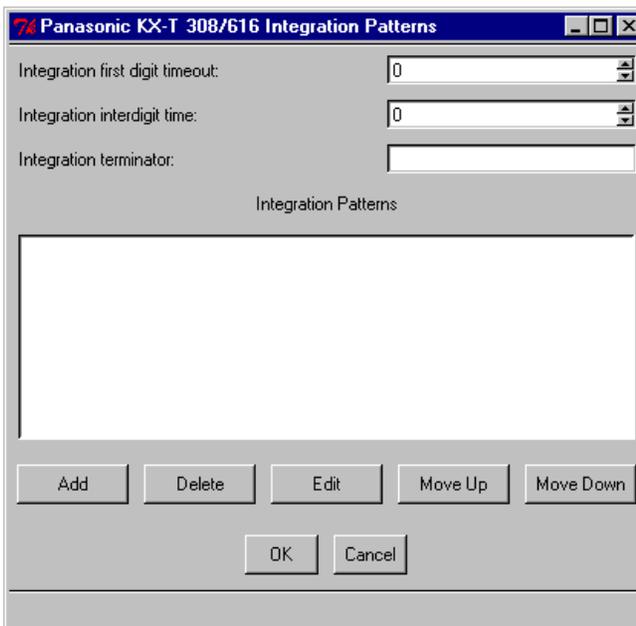
This process makes a backup copy of your current switching system settings—if you had any. The backup file is named 1001.BAK or 2001.BAK and can be renamed to 1001.PBX or 2001.PBX at a later date to restore the original settings—if appropriate.

3. From either the PBX 1 or PBX 2 group box (depending on which switching system you are determining integration patterns for), select or reselect a telephone switching system from the list box.

Either select the exact system or one that is similar.

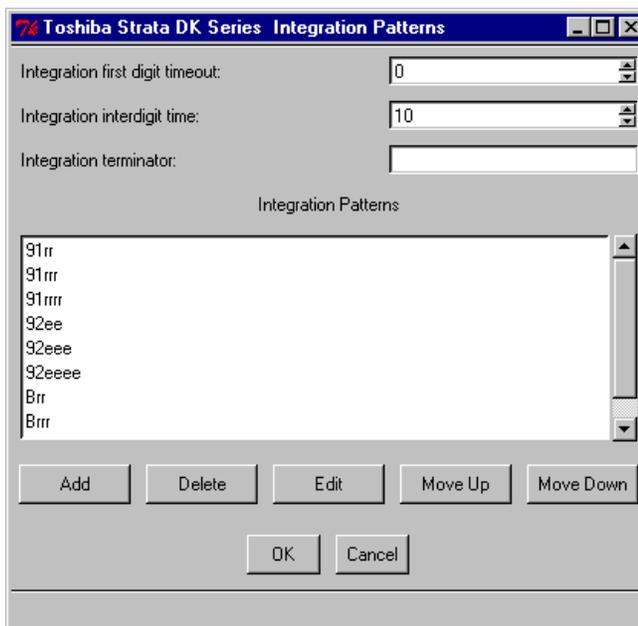
4. Set the dial codes for your switching system using the information in “Defining Dial Codes” on page 25.
5. Click Edit Integration Patterns.

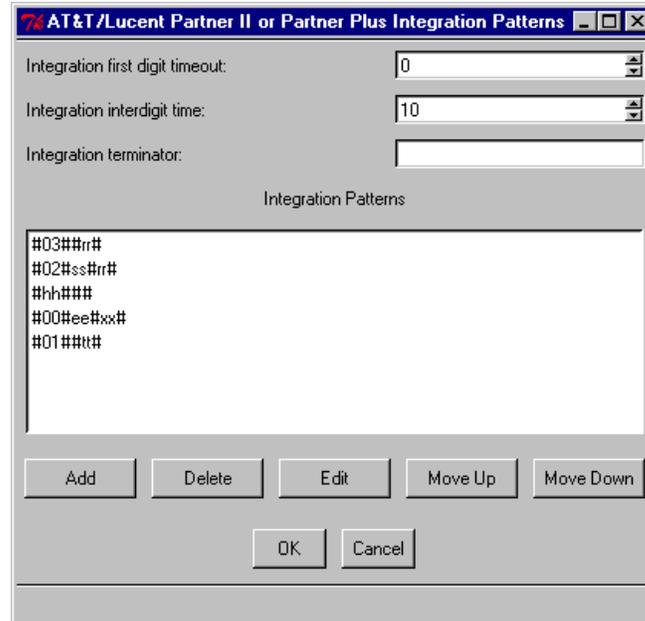
The Integration Patterns dialog box opens. This dialog box may have no settings as shown in the next figure.



Or it may come with several predefined integration patterns for your telephone switching system.

The next two figures show the predefined integration patterns for a Toshiba model and an AT&T model.





Many telephone switching systems are programmable, so existing patterns may still need modification. You can verify that the existing patterns are accurate by checking the manual for your telephone switching system.

TIP: You can press Tab to move from setting to setting. Click Delete to remove any unnecessary integration patterns.

6. In the Integration First Digit Timeout spin box, select a number of tenths of seconds.

A value of 0 prevents integration. Any other value is the amount of time that Amanda will wait for information from the telephone switching system. A suggested value for this timeout is 10 (which equals 1 second). In some cases you may need a value of 15 or 20.

7. Create the following pattern:

```
rrrrrrrrrr
```

This new integration pattern will capture up to 10 digits of In Band Signaling that will be displayed in the trace file for later inclusion in 1001.PBX or 2001.PBX.

Creating Test Patterns

After enabling the Trace capability and restarting Amanda, the telephone switching system must be programmed to perform the following capabilities:

- Select an extension that forwards on Ring No Answer to Amanda.
- Select another extension that forwards to the above extension on Ring No Answer.
- Select a third extension that forwards on Busy to Amanda.
- Select a fourth extension that forwards to the third extension on Busy.
- Select a fifth extension that forwards all calls to Amanda.
- If applicable, create a hunt group that will forward back to Amanda if the hunt group is busy or rings without answer.

- Create a Direct Inward Line by having an outside CO trunk line ring at an extension that will forward on Ring No Answer and Busy to Amanda. Tests 5 and 6 below do not have CO line identification enabled. Tests 7 and 8 do.

Running the Tests

To run the tests:

- Restart Amanda.

Test 1

- Place a call to the extension that forwards on Ring No Answer to Amanda. Once Amanda has received the forwarded call, hang up.

Test 2

- Place a call to the second extension that is forwarded to the first extension. When Amanda has received the call, hang up.

Test 3

- Place a call to the third extension that forwards on Busy to Amanda. Make sure that the extension is offhook and connected to another extension or outside line. Once Amanda has received the busy forwarded call, hang up.

Test 4

- Place a call to the fourth extension that is busy forwarded to the third extension. Make sure that both extensions are offhook and either connected to each other, or to outside lines. Once Amanda has received the busy forwarded call, hang up.

Test 5

- Call in on the CO line that is directed to an extension that is forwarded to Amanda on Ring No Answer. Make sure that CO Line ID is disabled. Once Amanda receives the call, hang up.

Test 6

- Call in on the CO line that is directed to an extension that is forwarded to Amanda on Busy. Make sure that the CO Line ID is disabled. Once Amanda receives the call, hang up.

Test 7

- Repeat test 5 with CO Line ID enabled.

Test 8

- Repeat test 6 with CO Line ID enabled.

Test 9

- Call directly into Amanda from any extension. When Amanda answers the call, hang up.

Reading the Trace File

To read the trace file:

1. Shut down Amanda.
2. At the C:\AMANDA> prompt in the DOS box, type:
JOVE TRACE.OUT
3. Then press Enter.
The first line should read similar to:
Oct 09 15:51:00 Begin trace of Amanda...
4. Press Ctrl+S to perform a search.
5. Type the following search text:
Using dtmf
6. Then press Enter.
The JOVE editor searches for the first call's integration pattern. The cursor should move to the trace line that reads similar to:
Oct 09 15:53:00 ichan01: Using dtmf data: #123
The # sign indicates a Ring No Answer forwarded call, and the 123 (for example) is the extension that forwarded the call to Amanda. These digits could be any combination of DTMF digits. For example, the AT&T Partner sends:
#03##123#
The #03## is the Ring No Answer code, and the 123# is the extension number that forwarded. Different telephone switching systems (and often different models) send different digits.
7. WRITE DOWN THE INTEGRATION INFORMATION FOR THIS CALL.
8. Press Ctrl+S again.
9. Keep the same search string by just pressing Enter.
You should progress to the next call's digits.
10. WRITE DOWN THE INTEGRATION INFORMATION FOR THIS CALL.
11. Repeat steps 8 through 10 until all 9 integration strings have been recorded. Some of the patterns may be identical (although the extension may be different if you tested from different stations).
12. To return to the C:\Amanda> prompt, press the following key combinations:
Ctrl+X
Ctrl+C
13. To exit the DOS box, type:
EXIT
14. Then press Enter.

To decide what integration patterns to add:

1. Look at the integration pattern from Test 1. This represents a Ring No Answer call that forwarded to Amanda. Locate the characters that match the extension number that forwarded. On your notepad, rewrite the pattern so that the extension number is replaced by the lower case letter r's. For example, if your pattern was "#123", then your new pattern would be "#rrr". In the case of the Partner example, the "#03##123#" would be changed to "#03##rrr#.

NOTE: You may have 2, 3, 4 or more digits in your extension numbers. The number of r's will match the number of digits in your extension dial plan.

2. Go to the integration pattern for Test 2. It may be similar to the one above, or it may contain a more complex pattern that has both the first and second extensions listed. If the pattern is identical to the previous pattern (for example, #03##123#), draw a line through it on your notepad.

If both extensions are listed, determine which number was the first extension (originally called) and which was the second extension. If your pattern looks similar to "#122123", then the 122 was the second extension, and 123 was the first extension. On your pattern, replace the first extension with the lower case r's and the first extension with lower case s's. Our example would look like "#ssrrr". The Partner would change from "#03##122#123#" to #03##sss#rrr#".

3. The integration pattern from Test 3 may be identical to the pattern from Test 1 (except for the extension number). If so, draw a line through it.

If not, then your switch sends a unique busy forwarded integration to Amanda. For example, the pattern may look like "*123". The "*" denotes a busy forwarded call, and the "123" is the extension that forwarded. Replace the "123" with lower case b's. Your pattern would now look like "*bbb".

4. The integration pattern from Test 4 may be identical to the one from Test 3. If so, draw a line through it.

If not, then identify the first extension number and replace the number with lower case b's. Identify the second extension number and replace the number with lower case s's. Your pattern may have looked like "*122123" and should now look like "*sssbbb".

5. The integration pattern from Test 5 is to differentiate a trunk based call from a station based transfer if the switch offers this level of differentiation. If this pattern is identical to pattern one or three, draw a line through it.

If not, evaluate the new pattern to see what other information was sent in addition to "123" which is the forwarding extension. If the integration pattern contains the trunk ID number (even though it is supposed to be disabled), replace the numbers with either x's (if the trunk ID is insignificant).

6. Repeat step 11 for the pattern from Test 6, but replace the extension number with b's rather than r's.
7. Repeat step 11 for Test 7. If the pattern is identical to the one from Test 5, draw a line through it.
8. Repeat step 11 for Test 8, but replace the extension number with b's rather than r's. If the pattern is identical to the one from Test 6, draw a line through it.

9. Test 9 captures the signaling for a direct call into voice mail. The integration pattern probably includes a prefix (usually 1 digit—but it could be several digits) and the extension number of the calling user. Replace the extension number with e's.
10. It is extremely important that there are no duplicate integration patterns. To make sure that each pattern is different, list them on a piece of paper, then rewrite them changing all character codes to zeros. What is left are dial code masks which must all be different. For example, using the following dial codes: 1***eee, #02#sss#rrr#, and #03##rrr#, the dial code masks are 1***000, #02#000#000#, and #03##000#, which are all different. If any dial code masks are the same, you must modify the duplicates or delete them.

Adding Integration Patterns

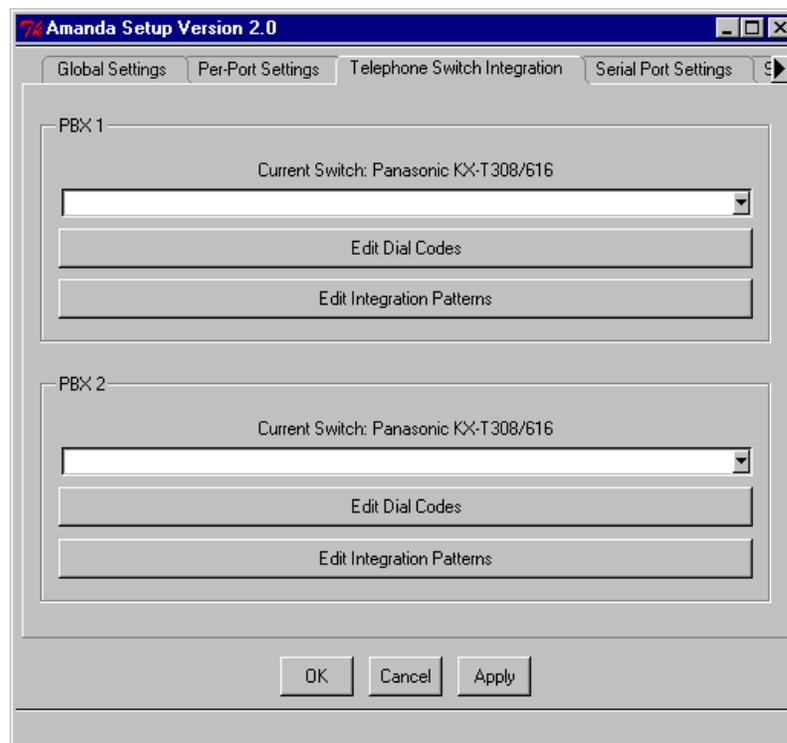
You define integration patterns using the Setup utility.

NOTE: Instead of using Setup, you can edit your .PBX file in the C:\AMANDA\PBX.DB directory using the JOVE utility. See “Chapter 12: Utilities,” in *Administering Amanda@Work.Group/Windows* for information about JOVE.

Using Setup

To define DTMF integration patterns using the Setup utility:

1. From the Start menu, select **Start⇒Amanda Server⇒Setup**.
The Amanda Setup dialog box opens.
2. Select the Telephone Switch Integration tab.



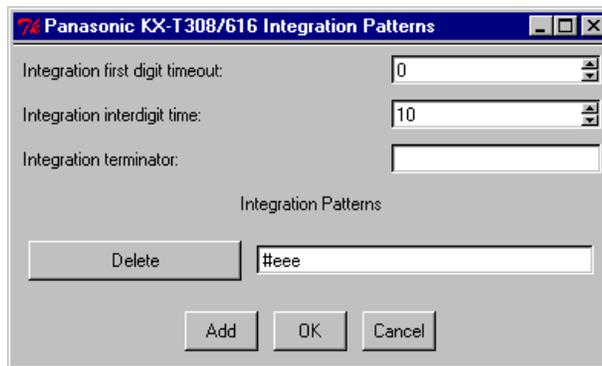
Most companies have only one telephone switching system and it is probably already listed as the current switch in the PBX 1 group box. However, your company may have two telephone switching systems.

3. If the wrong telephone switching system is current or no telephone switching system has been selected, select the switching system for which you are setting dial codes from the current switch drop-down list box.

For example, if you are setting up a second switching system, you use the list box in the PBX 2 group box. Otherwise you use the list box in the PBX 1 group box.

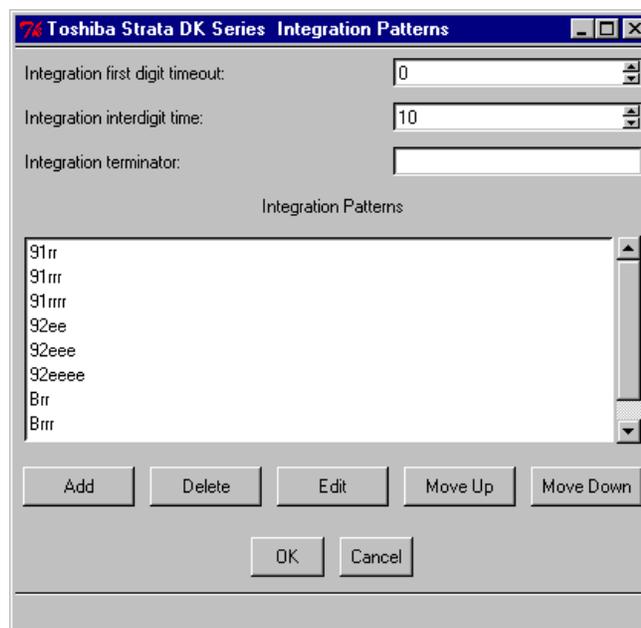
4. Click Edit Integration Patterns.

The Integration Patterns dialog box opens. This dialog box may have no settings as shown in the next figure.



Or it may come with several predefined integration patterns for your telephone switching system.

The next figure shows the predefined integration patterns for a Toshiba model.



Many telephone switching systems are programmable, so existing patterns may still need modification. You can verify that the existing patterns are accurate by checking the manual for your telephone switching system.

You can press Tab to move from setting to setting. Click Delete to remove any unnecessary integration patterns.

5. In the Integration First Digit Timeout spin box, select a number of tenths of seconds.
A value of 0 prevents integration. Any other value is the amount of time that Amanda will wait for information from the telephone switching system. A suggested value for this timeout is 10 (which equals 1 second). In some cases you may need a value of 15 or 20.
6. In the Integration Interdigit Time spin box, select the number of tenths of seconds that Amanda waits between integration digits. The default is 10 (one second).
7. In the Integration Terminator text box, type a one-character string containing the character that terminates DTMF input. The default is the empty string.
8. Add, edit, or delete integration patterns as appropriate.

To add a pattern:

1. Click Add.
2. Type the integration pattern in the box that appears.

To edit a pattern:

- Make correcting in the existing pattern by adding, replacing, or deleting characters.
For example, if a pattern is #6rr, the rr stands for any two-digit extension. If the #6 is accurate, but you plan to have three or four-digit extension numbers, you must do some editing. For three-digit numbers, change the Ring No Answer pattern to #6rrr instead of #6rr. (See “Using Character Codes” on page 41 for more information about rrr and other codes.)

To delete a pattern:

- Click the Delete button beside the pattern to be deleted.

Using JOVE

JOVE can be used to edit the 1001.PBX or 2001.PBX files to add integration patterns, but it is easier to use the Setup utility.

To add integration patterns to 1001.PBX using JOVE:

1. Open a DOS box:
On the Start menu, click Programs, then MS-DOS Prompt.
2. At the DOS prompt, type the following to go to the PBX.DB directory:

```
CD C:\AMANDA\PBX.DB
```
3. Then press Enter.

4. Type:
JOVE 1001.PBX
 5. Then press Enter. This is the same file we edited earlier.
 6. Press Down Arrow until you select the line that reads:
integration 10 `rrrrrrrrrr`
 7. Press Delete to remove this line.
 8. Take the integration patterns you created in the previous procedure. Type each one on a separate line in 1001.PBX. For example:
integration 10 `#03##rrr#`
integration 10 `#03##sss#rrr#`
integration 10 `#00#ee#`
- NOTE:** The 10 is a suggested value for the timeout. 10 equals 1 second. Any other value is the amount of time that Amanda will wait for information from the telephone switching system. In some cases you may need a value of 15 or 20. A value of 0 prevents integration.
- These are in addition to the dial codes and any other integration patterns that may have been in the original file. Enter them at the end of the file. Do not duplicate lines, but do remove any lines that are inaccurate.
9. To save and close the file, press the four following key combinations in order:
Ctrl+X
Ctrl+S
Ctrl+X
Ctrl+C

Using Character Codes

You must modify the DTMF patterns so that the integration patterns become general (not specific to extensions 111 and 127). Call states and extension information are defined by using one of the character codes shown below. Each character code represents a call state, the position of the extension number in the pattern, and the number of digits in the extension. When inband signaling patterns/strings come from the telephone switching system, Amanda compares them to the defined integration patterns and decides how to handle the calls.

The character codes in the integration patterns are defined as follows:

Code	Description
a	Answer state Amanda hangs up immediately.
b	Busy call state When bbb (or bbbb) appears in the integration pattern, Amanda checks the Busy Chain. If the Busy Chain is blank, the system plays the custom busy message for mailbox bbb (or bbbb) or the system busy message.

Code	Description
c	<p>ANI or Caller ID digits</p> <p>When a string of c's appears in the integration pattern, Amanda stores the DTMF characters at those locations in the port variable %H. With token programming the %H can be used to identify callers and so forth. A string of c's is usually used with e's, r's, b's, or t's. However, if none of these other integration letters are used, the system just stores the digits that matched the string of c's and processes the call normally.</p> <p>The captured data appears in the Subject line for outside calls reviewed with Amanda Messenger and Amanda Unified Messenger.</p>
e	<p>Direct dial call state (used to access a mailbox directly by Amanda asking for a security code)</p> <p>When eee (or eeee) appears in the integration pattern, Amanda assumes the caller wants to log in to mailbox eee (or eeee) and asks for the security code.</p>
h	<p>Immediate hang up state</p> <p>This is used to handle heartbeat or day/night automatic calls from the switching system.</p>
i	<p>Immediate record call state (plays the record tone and starts recording a message)</p> <p>When iii (or iiii) appears in the integration pattern, Amanda begins recording a message for mailbox iii (or iiii) without playing a prompt first.</p>
r	<p>Ring-no-answer call state that indicates who the call was for and that it was not answered</p> <p>When rrr (or rrrr) appears in the integration pattern, Amanda checks the Ring No Answer (RNA) Chain. If the RNA Chain is blank, the system plays the current greeting for mailbox rrr (or rrrr) or the system greeting.</p> <p>See the configuration option "integration_greeting" on page 202 for information about how the system greeting can be played when an integrated call has both the rrr and sss (or rrrr and ssss) fields set.</p>
s	<p>Information regarding where the call came from (for handling message replies)</p> <p>If sss (or ssss) is found in the integration pattern along with b's or r's, Amanda recognizes mailbox sss as the sender of the message—if one is left.</p>
t	<p>Trunk call or CO line ID; this can also be used for dynamic port allocation</p> <p>When ttt (or tttt) appears in the integration pattern, Amanda processes mailbox ttt (or tttt) normally. Whenever a call comes in on trunk line 3, for example, mailbox 3 is processed. If trunk lines 1 to 20 support two companies that share an Amanda system, mailbox's 1–10 can have @G(990) in their Extension fields—causing Amanda to play one company's greeting. mailbox's 11–20 can have @G(880) in their Extension fields—causing Amanda to play the other company's greeting.</p>
x	<p>Wild card that matches anything (use this carefully)</p> <p>For example 6xxxx would match every inband signaling pattern/string that had a 6 followed by four other characters.</p>

Realize that the character codes you use define not only the placement of the extension information in the pattern, but also the call state, that is, Ring No Answer, Busy, Direct, and so forth. Therefore, you can control Amanda's behavior based upon your specific requirements. For example, if your customer does not wish to allow for Busy call states, then modify the integration character codes and replace the b's with r's.

Some telephone switching systems have timing problems that cause the first DTMF digit to be missed. In such cases, it is useful to add integration patterns that are variations of the

current patterns. For example, you might add a second pattern for Direct calls (1***eee in our example) as ***eee. These are identical—except the first digit is missing in the second pattern. You can also try reducing the delay time (Delay option on SMDI tab in Setup utility).

Never remove leading digits from a pattern if they differentiate this pattern from another or if they are “active” digits (such as r’s and b’s).

Chapter 5: Configuring Amanda

Using This Chapter

This chapter contains a questionnaire that helps you determine exactly how your customer needs his Amanda system to be set up. It also guides you as you configure an Amanda system for the first time. Fortunately, The Amanda Company has configured Amanda so that over 90% of the configuration parameters need no change whatsoever.

For a complete list of the configuration options, see “Chapter 13: Configuration Reference.”

Using the Questionnaire

Use this “First Use” questionnaire to find out how your customers prefer to use their Amanda system. Use the results as you run Setup, selection 3, to set configuration options, and as you create the mailbox template (usually mailbox 997). Then create mailboxes for users.

Question Column

The questions address:

- How Amanda handles all callers.
- How Amanda interacts with most users. You assign new users the options that give them an initial, usable mailbox configuration. After each mailbox has been created, the System Administrator can change these options, and the users themselves can change some options.
- System Administration issues.

During your interview with the client, you will use the Question and Circle Response columns in this questionnaire to select the Amanda features for this site.

Location and/or Parameter Column

The contents of this column indicate whether you are changing the setting of a parameter, a field in the 997 mailbox (the template mailbox), and so on.

To display the Mailbox window (if you are not logged onto Amanda Administrator):

1. Start Amanda Administrator.
The Administrator Logon dialog box appears.
2. Enter your password in the Logon dialog box.
The mailbox List dialog box appears.

- Enter 997 (or the mailbox for the default template).
The Mailbox window displays template 997.

To display the Mailbox window (if you are already logged onto Amanda Administrator but displaying another window):

- Click the Mailbox menu and select mailbox.
The mailbox List dialog box appears.
- Enter 997 (or the mailbox for the default template).
The Mailbox window displays template 997.

For each feature, the Location column indicates whether the setting to be changed is a mailbox setting or a configuration parameter setting.

The mailbox settings are to be changed for mailbox 997, the mailbox that serves as a template for other mailboxes. If you have changed the template to another mailbox, change that mailbox's settings instead of the settings for mailbox 997.

The configuration settings are stored on the Amanda server in C:\AMANDA\INSTALL.CFG. However, you reset them using the Setup utility. The Setup utility's basic operation is explained in "Logging On to Amanda" on page 5.

First Use Questionnaire

Question	Circle Response	Location and/or Parameter	Action
1) Do you want to continually remind users to set up their mailboxes using the tutorial?	YES	Global settings parameter is <code>use_tutorial</code>	Set the parameter to True, which is the default. Amanda suggests that the user use the tutorial to set up his or her mailbox. Amanda continues to make this suggestion until the mailbox has been set up.
	NO		Set the parameter to False. Amanda does not suggest that the user use the tutorial.
2) Amanda normally says "Please hold while I try that extension" as the system transfers a call. This feature can be turned off. Do you want Amanda to say "Please hold....?"	YES	Global settings parameter is <code>please_hold</code>	Set the parameter to True, which is the default.
	NO		Set the parameter to False You can also bypass this message for individual mailboxes using the Token Programming Language (although only blind transfers are supported).
3) If YES to 2, Amanda can "Please hold while I try that extension." OR "Please hold for" and plays the callee's name and extension recording. Do you want Amanda to say the name of the callee?	YES	Global settings parameter is <code>id_callee</code>	Set the parameter to True. Amanda says, "Please hold for <i>name_ext_recording</i> ."
	NO		Set the parameter to False, which is the default. When False, Amanda says, "Please hold while I try that extension."
4) Later Amanda may say, "Please continue to hold." Do you want Amanda to say this?	YES	Global settings parameter is <code>please_hold2</code>	Set the parameter to True, which is the default.
	NO		Set the parameter to False
5) Do you want callers to be able to hold for busy extensions?	YES	Global settings parameter is <code>cancel_busy_hold</code>	Set the Caller Can Hold check box to T for True, which is the default.
	NO		Set the Caller Can Hold check box to F for False.

First Use Questionnaire (Continued)

Question	Circle Response	Location and/or Parameter	Action
6) If YES to 5, do you want active or inactive hold? On active hold, the caller is prompted to press * to remain on hold. On inactive hold, the caller takes no action to stay on hold. (800 numbers benefit from using active hold, because the caller cannot leave the telephone unattended.)	ACTIVE	Global settings parameter is <code>active_hold</code>	Set the parameter True, which is the default.
	INACTIVE		Set the parameter to F for False.
7) If YES to 5 and a caller is on hold, Amanda reports how many others are waiting for the same callee by saying, "There are <i>n</i> calls ahead of yours." before starting the hold music. If the caller is the first in line, Amanda can say, "There are 0 calls ahead of yours." or just play hold music. Do you want Amanda to say that 0 calls are in the queue?	YES	Global settings parameter is <code>always_report_queue_position</code>	Set the parameter to True.
	NO		Set the parameter to False to only play hold music in this case.
8) Do you want Amanda to verify that a caller is still on the telephone before transferring the call to an operator? (Amanda asks the caller to "Say yes at the tone" before transferring the call.)	YES	Global settings parameter is <code>dtmf_gate</code>	Set the parameter to True, which is the default.
	NO		Set the parameter to False.
9) Do you want direct messages to play the Name/Extension recording instead of the mailbox's greeting? (A direct message is left in a user's mail box without attempting to ring that user. By default, Amanda plays the mailbox's greeting. The Name/Ext recording is shorter than the mailbox's greeting.)	YES	Global settings parameter is <code>short_direct_send</code>	Set the parameter to True to play the user's Name and Extension Recording.
	NO		Set the parameter to False to play the mailbox's greeting (which is the default).
10) Do you want Amanda to answer all incoming calls or only answer when the operator cannot get to the phone within a certain number of rings? (This decision can vary from port to port.)	ALL CALLS	Per port parameter is <code>n_rings</code>	Set <code>n_rings</code> to 1 for each port. The default is one ring on each port. (Amanda is being set up as a primary attendant.)
	AFTER <i>x</i> RINGS What is <i>x</i> ?		Set <code>n_rings</code> to <i>x</i> for each port, where <i>x</i> is the number of rings. (Amanda is being set up as a secondary attendant.)
11) Do you want callers who use the company directory (411) to press * to transfer to the mailbox being described?	YES	Global settings parameter is <code>tmo_dir_transfer</code> .	Set <code>tmo_dir_transfer</code> a number greater than 0. The default is 2.
	NO		Set <code>tmo_dir_transfer</code> to 0.
12a) Do you want users and callers to be able to listen to, rerecord, or cancel messages and greetings that they create?	YES	Global settings parameter are <code>end_rec_menu</code> and <code>record_menu</code>	Set both parameters to True, which is the default.
	NO		Set both parameters to False.

First Use Questionnaire (Continued)

Question	Circle Response	Location and/or Parameter	Action
12b) Do you want users and callers to hear a prompt before they start recording or just the beep? The prompt is "Begin recording at the tone. Finish by pressing # or hanging up."	PROMPT and BEEP	Global settings parameters are begin_rec_prompt record_menu	Set begin_rec_prompt to True, which is the default. Set record_menu to True, which is the default.
	BEEP ONLY		Set begin_rec_prompt to False. Set record_menu to True, which is the default.
13) When a user listens to messages, should Amanda start with his first new (unheard) message or the first message in his message list (whether heard or unheard)?	NEXT NEW MESSAGE	Global settings parameter is play_new_first	Set the parameter to True.
	FIRST MESSAGE IN LIST		Set the parameter to False, which is the default.
14) What time stamp should a forwarded message have? You can use the time the message was recorded or the time the message was forwarded. (When you use the time that the message was recorded, the person receiving the forwarded message may think delivery was slow and be confused—unless the person forwarding the message adds a comment.)	TIME RECORDED	Global settings parameter is timestamp_forwards	Select the parameter to True, which is the default.
	TIME FORWARDED		Set the parameter to False.
15) Do you want Amanda to tell the user the date and time a message was recorded before playing the message? This option can be modified for each user.	YES	Mailbox 997 setting	From the Options group box, select the Play Date & Time check box.
	NO		From the Options group box, clear the Play Date & Time check box. NOTE: A user can always get the message date/time by pressing 74 during the message even if this option is set to NO.
16) If YES to 10, do you want Amanda to say 'today' and 'yesterday' instead of the exact date? This option is set for all users.	YES	Global settings parameter is abbreviate_dates	Select the parameter to True, which is the default.
	NO		Set the parameter to False.
17) How many times should the telephone ring before Amanda decides the user is unavailable? (After these rings, Amanda takes a message, reroutes the call, or does whatever the system is configured to do for Ring No Answer.)	1 2 3 4 5 6 7 8 9	Mailbox 997 setting	In the Options group box, the current default for Adjust Maximum Rings is 0, which means 4 rings. If the circled number is not 4, select the Adjust Maximum Rings check box and enter the circled number into the text box. CAUTION: If you are using the U token in Extension fields (to perform a partially supervised transfer), Maximum Rings must be set to 1.
18) Do you want users to be able to turn Do Not Disturb on and off?	YES	Mailbox 997 setting	From the Options group box, clear the Do Not Disturb Lock check box.
	NO		From the Options group box, select the Do Not Disturb Lock check box.
19) Do you want Do Not Disturb initially ON or initially OFF?	ON	Mailbox 997 setting	From the Options group box, select the Do Not Disturb check box.
	OFF		From the Options group box, clear the Do Not Disturb check box.

First Use Questionnaire (Continued)

Question	Circle Response	Location and/or Parameter	Action
20) Do you want users to be able to turn call screening on and off? (Call screening allows users to accept or reject calls based on who is calling.)	YES	Mailbox 997 setting	From the Options group box, clear the Call Screening Lock check box.
	NO		From the Options group box, select the Call Screening Lock check box.
21) Do you want call screening initially ON or initially OFF?	ON	Mailbox 997 setting	From the Options group box, select the Call Screening check box.
	OFF		From the Options group box, clear the Call Screening check box.
22) Do you want callers to be able to leave messages for the users they call?	YES	Mailbox 997 setting	From the Messages group box, select the Store check box and enter number of seconds for each message into the Maximum Length text box.
	NO		From the Messages group box, clear the Store check box. If the Copy Messages To text box has a mailbox different from none, do the following: 1 Select the Copy Messages To check box. 2 Type none in the Copy Messages To text box. 3 Clear the Copy Messages To check box.
23) Do you want everyone to use the same greeting (and in the same voice) when the telephone is not answered? (NO allows each user to create his own greeting.)	YES	Mailbox 997 setting	From the Personal Greetings group box, select the RNA Lock check box.
	NO		From the Personal Greetings group box, clear the RNA Lock check box. Each user should record a greeting and a Name/Extension recording. Until a user records these, the system greeting and Name/Extension recording are used. When the user records Greeting 1, the Current Greeting setting changes from 0 to 1 automatically. The user may also control what greeting is used. (Amanda@Work.Group/Windows provides 7 greetings per mailbox.)

First Use Questionnaire (Continued)

Question	Circle Response	Location and/or Parameter	Action
24) If YES to 23, do you want to use Amanda's system greeting or a company-wide custom greeting when a telephone is not answered? (The system greeting is "Please leave a message for" followed by the system or custom Name/Extension recording.)	SYSTEM	Mailbox 997 setting	From the Personal Greetings group box, click the  button after the RNA box. The Greeting List dialog box appears. Select System and click OK. From the Greeting List dialog box that appears, select System.
	CUSTOM		From the Personal Greetings group box, click the  button after the RNA box. When the Greeting List dialog box appears, select 1. In the corresponding Max. Length text box, enter the number of seconds for the custom recording. To create a company-wide custom greeting, record a greeting for some mailbox (e.g., 445), then use DOS on the Amanda server after shutdown to copy it (e.g., C:\VMB.DB\5\445\GRT1.VOX) as GRT1.VOX for each mailbox assigned to a user. For 3-digit extensions that start with 2, use: <code>COPY custom_grt</code> <code>C:\VMB.DB\?\2??\GRT1.VOX</code> For 4-digit extensions that end with 5, use: <code>COPY custom_grt</code> <code>C:\VMB.DB\?\4???\GRT1.VOX</code> (Here, <i>custom_grt</i> is <code>C:\VMB.DB\5\445\GRT1.VOX</code> .) Update the mailbox template (997) before you create the other mailboxes. Use the COPY command shown above after the IDs have been created.
25) If callers are permitted to hold when a user extension is BUSY (see question 3), do you want everyone to use the same greeting (and in the same voice)? (NO allows each user to create his own busy greeting.)	YES	Mailbox 997 setting	From the Personal Greetings group box, select the Custom Busy Lock check box.
	NO		From the Personal Greetings group box, clear the Custom Busy Lock check box. Set the Custom Busy Max. Length to a number greater than zero, such as 45. Each user should record a busy greeting. Until a user records his busy greeting, the system busy greeting is used. The user may also control what busy greeting is used.
26) If YES to 25, do you want to use Amanda's system busy greeting or a custom busy greeting? (The system busy greeting explains to the caller how to hold for the extension. If the caller presses *, Amanda plays music, then retries the extension. If it is still busy, Amanda changes the prompt: the caller can hold, enter another extension, or leave a message.)	SYSTEM	Mailbox 997 setting	From the Personal Greetings group box, clear the Custom Busy check box.
	CUSTOM		From the Personal Greetings group box, select the Custom Busy check box. Record the busy message for a mailbox (e.g., 445), then use DOS on the Amanda server after shutdown to copy that message (e.g., C:\VMB.DB\5\445\BUSY.VOX) as BUSY.VOX for each user's mailbox. For 3-digit extensions that start with 2, use: <code>COPY custom_bsy</code> <code>C:\VMB.DB\?\2??\BUSY.VOX</code> For 4-digit extensions that end with 5, use: <code>COPY custom_bsy</code> <code>C:\VMB.DB\?\4???\BUSY.VOX</code> (Here, <i>custom_bsy</i> is <code>C:\VMB.DB\5\445\BUSY.VOX</code> .) Update the mailbox template (997) before you create the other mailboxes. Use the COPY command shown above after the IDs have been created.

First Use Questionnaire (Continued)

Question	Circle Response	Location and/or Parameter	Action
27) Do you want Amanda to let the user know who the call is for? (This is primarily for people who answer calls for more than one person or share a telephone.)	YES	Mailbox 997 setting	From the Options group box, select the Identify Called Party check box.
	NO		From the Options group box, clear the Identify Called Party check box.
28) If YES to 27, do you want Amanda to let the user accept or reject the call based on who it is for?	YES	Mailbox 997 setting	From the Options group box, select the Call Screening check box.
	NO		Use the settings already specified for Screen Calls and ID Call? in questions 20, 21, and 27.
29) If YES to 28, do you want users to hear: <ul style="list-style-type: none"> • Both who is calling and who the call is for. • Only who the call is for. 	BOTH	Global settings parameter is <code>modified_call_screening</code>	Set the parameter to False.
	ONLY WHO CALL IS FOR		Set the parameter to True, which is the default.
30) Do you want to use a system or custom Name/Extension recording? (The system recording says the mailbox number instead of the user's name. For example, if the user's mailbox is 143, Amanda says "For mailbox 1-4-3.") NOTE: It is a good idea to have someone with a good voice make a Name/Extension recording for each user, so Amanda identifies users by name on the first day, even if you allow custom name/extension recording.	SYSTEM	Mailbox 997 setting	From the Options group box, clear the Record Name & Extension check box.
	CUSTOM		From the Options group box, select the Record Name & Extension check box. Each user should make a recording. Until a user makes his recording, the system recording is used.
31) Do you want to log information about messages? If YES, the MSG.LOG file will store: <ul style="list-style-type: none"> • The date and time every message is received • The date and time every mailbox is checked for messages along with the DTMF the user entered 	YES	Global settings parameter is <code>msg_log</code>	Set the parameter to True.
	NO		Set the parameter to False, which is the default.
32) Do you want to log information about accesses to mailboxes? If YES, the USER.LOG file will store the date, time, and mailbox when any mailbox is accessed by DTMF. This file can be analyzed for call distributions and accesses by dates, days, and times.	YES	Global settings parameter is <code>user_log</code>	Set the parameter to True.
	NO		Set the parameter to False, which is the default.
33) What password does the administrator want to use for Amanda? (You may not want to write this down, but be sure that it gets reset. The default is AMandA with the first two and the last letter capitalized.)	Write password here.	Global settings parameter is <code>password</code>	Enter a password which contains no more than eight letters. Passwords are case-sensitive.

First Use Questionnaire (Continued)

Question	Circle Response	Location and/or Parameter	Action
34) What language should Amanda use for prompts, such as "Please hold...?" (You can offer information in more than one language, ask for details.)	ENGLISH SPANISH	Global settings parameter is <code>prompt_file</code>	Set the parameter to one of the languages. ENGLISH is the default. If you do not select English, you must also install the prompts for the language.
35) Will Amanda be connected to a printer so that you can print reports?	YES	Global settings parameter is <code>lpt_port</code>	Set the parameter to 1.
	NO		Set the parameter to 0, which is the default.
36) What words do you want the screen saver to display on the Amanda computer? (Write the words. The default is "Buy more Amandas.")	Write a phrase.	Global settings parameter is <code>advertising</code>	Set the parameter to an acceptable phrase. Recommended length is up to 30 characters, but maximum length is 80.
37) When users don't delete messages, they accumulate. Do you want to get rid of messages that have been listened to and have been around for a long time? Be aware that deleted messages are gone forever.	YES	Global settings parameter is <code>purge</code>	See Action for Question 38.
	NO		Set the parameter <code>purge</code> to 0, which is the default.
38) If YES to 37, write a number of days (from 1 to 99) after which a message that has been heard should be deleted.	Write a number (1-99).	Global settings parameter is <code>purge</code>	Set <code>purge</code> to x, where x is the number of days (1-90) after being heard that a message is purged.
39) Do you want to change the The Amanda Company hold music to another type of music?	YES	Global setting parameter is <code>hold_music</code>	Set to one of the available music types: Bluegrass, Country1, Country2, Jazz, Jennifer2 (a jazz composition by an eight-year-old named Jennifer), Rock1, or Rock2/
	NO		Set the parameter to Traditional, the default.
40) Do you want to use the hold music provided by The Amanda Company or hold music and messages of your own?	The Amanda Company	N/A	Amanda plays C:\AMANDA\HOLD.VOX by default.
	YOUR OWN		<p>There is no parameter or mailbox field for this. To rerecord HOLD.VOX:</p> <ol style="list-style-type: none"> 1. Shut down Amanda. 2. At the DOS prompt (C:\AMANDA), type: <code>COPY HOLD.VOX MUSIC.VOX</code> so you can use this file later. If you already have a MUSIC.VOX file, use another name. 3. Restart Amanda. 4. Using the telephone, log in to the system administrator mailbox (999), select 8 for the System Administration menu, then 3 to record the busy-hold music. 5. Make your recording. It becomes the file C:\AMANDA\HOLD.VOX and is played by Amanda to callers on hold. 6. If you create HOLD0.VOX, HOLD1.VOX, etc. Amanda plays them after HOLD.VOX if the extension remains busy. Each one is created as HOLD.VOX, and must be changed to HOLDx.VOX with a DOS command: <code>COPY HOLD.VOX HOLDx.VOX</code> Do the recording for the real HOLD.VOX (the first music/message the caller hears) last.

Configuring a New Installation

Amanda has over 200 configuration parameters and settings. They are what make Amanda so powerful and flexible. You will probably leave over 90% of those parameters set to their default settings. However, armed with the answers to the First Use Questionnaire, you should review the most commonly changed parameters (those in the General Configuration section of the Setup utility).

To set a new Amanda system's general configuration parameters:

- Run Setup as explained in “Chapter 2: Getting Started.”

Using Default and Recommended Mailboxes

The following is a complete list of the default (and recommended) mailboxes in case you need to change (or set) them. If two departments share an Amanda system, you might use these mailboxes for one department and create another set for the other department. (For more information about sharing an Amanda system, see “Sharing Amanda” on page 110.) If you intend to use the defaults, don't overwrite these mailboxes when you create new mailboxes for employees.

Default and Recommended Mailboxes

Mailbox	Configuration Option	Purpose
0	(no option)	Mailbox for operator or receptionist. Mailbox 0 has been created for you. By default, this mailbox has Do Not Disturb locked OFF, call screening locked OFF, Greeting 0 as the current greeting, 999 in the Done Chain, stores messages, and is set to ring six times.
8	(no option)	Mailbox that acts as a shortcut to mailbox 998. Mailbox 8 makes it easier to send callers directly to voice mail. Live operators press transfer, call Amanda, dial 8# followed by the mailbox number, and hang up. The caller goes directly to voice mail.
411	box_idx	Mailbox for employee directory. Mailbox 411 has been created for you. By default, this mailbox has Do Not Disturb locked ON, call screening locked OFF, Greeting 1 as the current greeting, an empty Done Chain, and does not store messages. When callers press 411, they are asked to type the first few letters of the name of the person they are calling. When they hear the correct name and extension, they can press * to go directly to that mailbox.
990	box_grt	Mailbox for Company Greeting. Mailbox 990 has been created for you. By default, this mailbox has Do Not Disturb locked ON, call screening locked OFF, Greeting 1 as the current greeting, 991 in the Done Chain, and does not store messages.
991	(no option)	Mailbox for Caller Instructions. Mailbox 991 has been created for you. By default, this mailbox has Do Not Disturb locked ON, call screening locked OFF, Greeting 1 as the current greeting, 0 in the Done Chain, and does not store messages.

Default and Recommended Mailboxes (Continued)

Mailbox	Configuration Option	Purpose
994	hot_box	Mailbox for use with PCPM codes. For example, you can set up a hot_box to detect calls from modems. As you create a hot box mailbox, make sure that the mailbox does NOT store messages and that Do Not Disturb is off. In addition, the Extension field must transfer the caller to the fax machine or whatever device is to be used by this box. In most cases, only one hot_box is defined to detect fax tones and the remainder are unused. However, you cannot separate these for companies or departments that share Amanda.
995	future_delivery	Mailbox that stores messages to be delivered at some time in the future. Mailbox 995 has been created for you. By default, this mailbox has Do Not Disturb locked ON, call screening locked OFF, Greeting 0 as the current greeting, nothing in the Done Chain, and stores messages. You don't need to (and cannot) separate these for companies or departments that share Amanda.
996	guest_defaults	Mailbox which is the template for all new guest mailboxes. Mailbox 996 has been created for you. By default, this mailbox has Do Not Disturb OFF, call screening OFF, Greeting 0 as the current greeting, nothing in the Done Chain, and stores messages. You cannot separate these for companies or departments that share Amanda.
997	defaults_box	Mailbox which is the template for all new mailboxes. Mailbox 997 has been created for you. You cannot separate these for companies or departments that share Amanda.
998	box_snd	Mailbox for direct messaging. Mailbox 998 has been created for you. By default, this mailbox has Do Not Disturb locked ON, call screening locked OFF, an empty Done Chain, and does not store messages.
999	(no option)	Mailbox for system administration and for a quick hangup. Mailbox 999 has been created for you. You cannot separate these for companies or departments that share Amanda. By default, this mailbox has Do Not Disturb locked OFF, call screening locked OFF, an empty Done Chain, and an H in the Extension field. Never change or delete this mailbox.
10000	(no option)	Mailbox used to receive incoming fax messages and store them in the previous mailbox accessed. To use this global fax mailbox, you must have at least one fax modem connected to Amanda and assign a menu option to go to mailbox 10000. If you want to create personal fax mailboxes, you can copy this mailbox, and change the %P variable to indicate the mailbox where faxes are to be stored. Then whenever that mailbox is executed, the fax message will be stored in the mailbox whose number is stored in the %P variable.

Configuring the Brooktrout Driver

In some cases, you may need to change settings for your Brooktrout Driver using Brooktrout's Configuration Wizard.

For example, when calling some pager companies, Amanda gets only part of a ringback or no ringback sound at all. This confuses the Brooktrout version 2 driver. Amanda can treat a PCPM error (which means no ringback was detected) as an answer if both of the following are true:

- The Brooktrout driver's `VPP_MAX_START_SILENCE` parameter is set to a value appropriate for how long the paging company takes to answer the call and play their prompt (for example, beep-beep-beep). A setting of 625 (which equals 10 sec.) is suggested.
- The Brooktrout driver's `VPP_MAX_START_OVERRIDE` parameter setting must be 1.

To configure the Brooktrout driver:

1. On the Start menu, select **Start⇒Programs⇒Brooktrout⇒Configuration Wizard**.
2. Click Next until The Configuration Wizard—Advanced Options dialog appears.
3. Click the Advanced Options button.
The Advanced Options dialog appears.
4. Click the Configure Board Parameters button.
The Parameter Configuration dialog appears.
5. Use it to select and set board parameters.

Chapter 6: Defining Tone Patterns

Using AccuCall Wizard

This chapter describes how to use AccuCall Wizard and AccuCall for Windows.

Use AccuCall Wizard to train your Brooktrout voice board to recognize the call progress tones used by your telephone switching system. You can use AccuCall Wizard for standard tones such as Ringing, Busy, and Hangup, and, with a bit of configuration, for custom tones such as do not disturb, reorder, or dial tones.

AccuCall Wizard complements but does not replace the Brooktrout utility AccuCall for Windows. Use AccuCall Wizard for basic analog switch integration, then use AccuCall for Windows to refine or troubleshoot the PCPM table stored in your tone file (.TON) created by AccuCall Wizard.

AccuCall Wizard Features

Call progress tones, such as the busy, dial tone, and fast busy tones, provide Amanda with important information, which allows Amanda to control how Brooktrout voice boards manage Call Progress Monitoring (CPM). This is called Programmable Call Progress Monitoring (PCPM). AccuCall Wizard provides a quick method of creating PCPM tables.

For more information about the tones and PCPM, see “Understanding Call Progress Tones” on page 82.

AccuCall Wizard:

- Works with most switches in the marketplace
- Trains the Brooktrout voice board to recognize Ringing, Busy, and Hangup tones
- Allows custom tone configuration of up to three tones
- Creates a tone file (which contains a PCPM table) that can be used with Windows or DOS
- Loads the DOS file directly into the TAPI service provider
- Creates a file log containing error messages and error data for use in troubleshooting
- Provides complete online help for all phases of training

System Requirements

Before using AccuCall Wizard, all of the following must be true:

- Your PC is running Windows NT or 2000.
- You have installed a Brooktrout voice board and Brooktrout drivers for Windows NT or 2000.

- You are connected to a PBX.
- You have connected the first two ports of your first Brooktrout voice board to telephone extensions.

Training the Brooktrout Voice Board

AccuCall Wizard guides you as you train your Brooktrout board to recognize call progression tones from your telephone switching system.

To train the Brooktrout voice board:

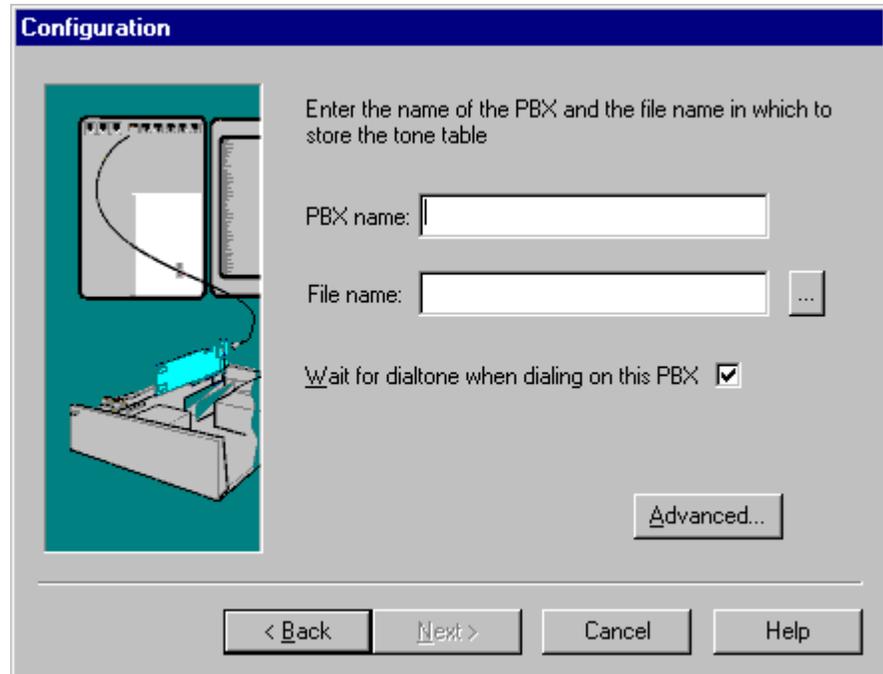
1. On the Start menu, select **Start**⇒**Programs**⇒**Brooktrout**⇒**AccuCall for Windows**.
2. From the AccuCall for Windows application window, select **File**⇒**Wizard** from the menu bar.

AccuCall Wizard's Welcome dialog box appears.



3. Click Next>.

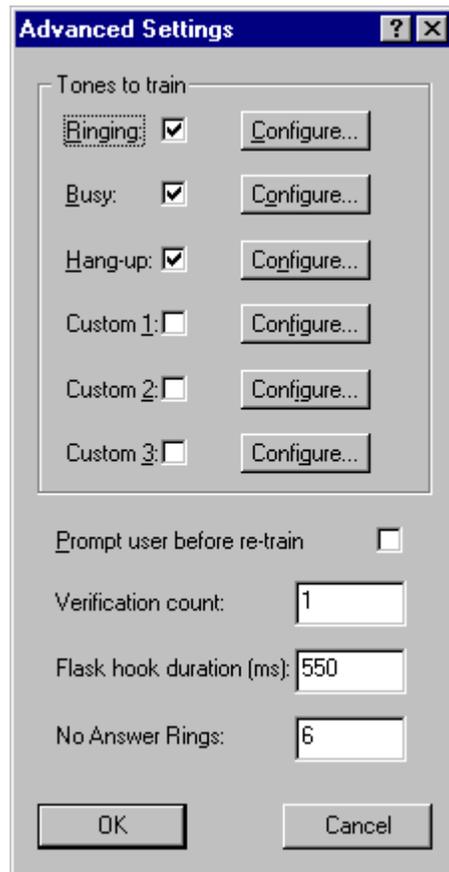
The Configuration dialog box appears.



4. Type the name of your telephone switching system in the PBX Name text box.
5. By default, AccuCall Wizard uses the name of the PBX as the file name.
6. Type or click  to browse for the path to your C:\AMANDA\PBX.DB\1001.TON or 2001.TON (the file in which the PCPM table will be stored).
7. If the dial tone on your telephone switching system is continuous, select the Wait For Dialtone When Dialing This PBX check box. This confirms that the telephone line is connected to the voice board channel before the training starts.

Clear it if the dial tone is **not** continuous.

8. Click Advanced to define custom tones or change the definition of the default tones (Ringing, Busy, and Hangup).

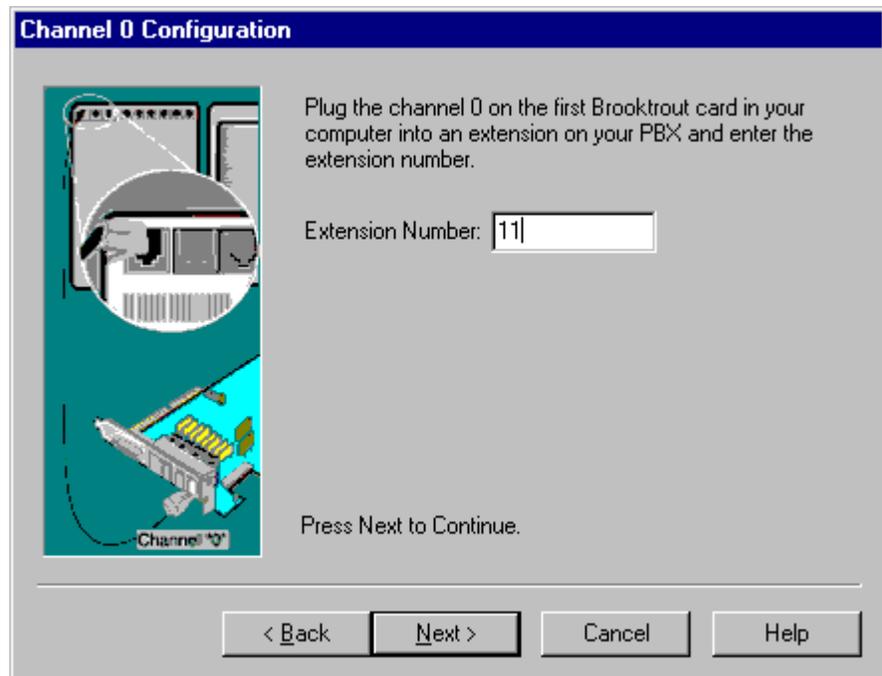


- a. Select the Ringing check box to train on the Ringing tone.
 - b. Select the Busy check box to train on the Busy signal.
 - c. Select the Hangup check box to train on the Hangup signal.
 - d. Select the Custom 1, Custom 2, and/or Custom 3 check boxes to train on a custom designed tone.
 - e. (Optional) Click Configure to customize any of the selected tones using the Custom Tone Configuration dialog box. See “Configuring a Customized Tone” on page 64 for details and “Configuration Examples” on page 66 for more information.
 For Ringing, Busy and Hangup tones, this dialog box shows how the pre-designed tones were configured.
 For custom tones, use this dialog to design your custom tone. After you design a custom tone, the selection box becomes checked.
 - f. Select the Prompt User Before Re-train check box to display the Test Results dialog for any failed tones. If there were no problems during testing, AccuCall Wizard does not display this dialog box.
 - g. Type the number of times that AccuCall Wizard should verify the tone in the Verification Count text box. The default is one.
 - h. Type the number of milliseconds for the flash hook duration.
 - i. Type the number of rings after which AccuCall Wizard reports that the telephone was not answered in the No. Answer Rings text box.
9. Click OK to exit the Advanced Settings dialog box and return to the wizard.

10. Click Next>.

The Channel 0 Configuration dialog box appears.

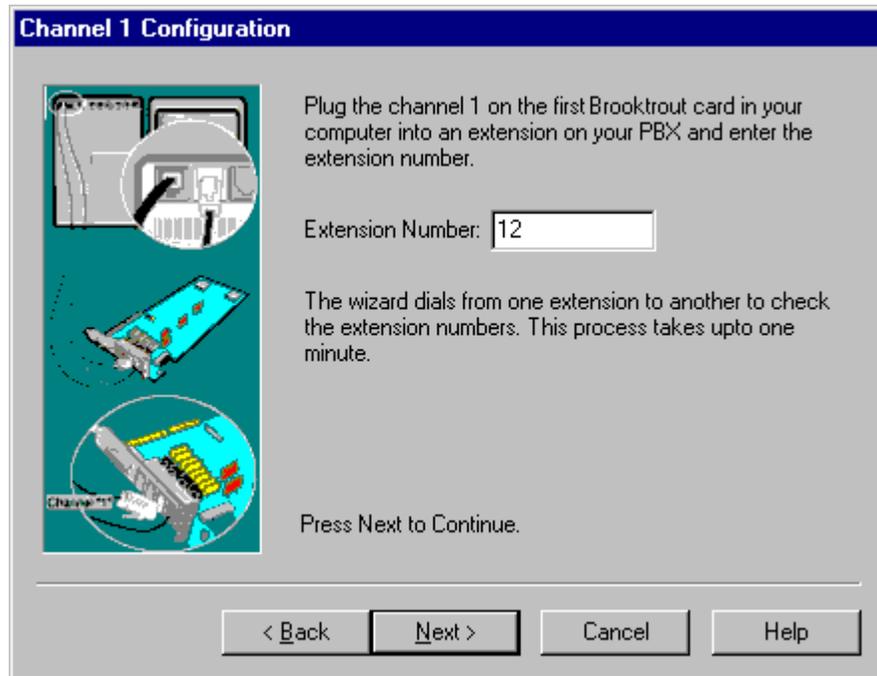
11. In the Extension Number text box, type the number for the first extension (connected to your Brooktrout voice board on channel 0).



12. Click Next>.

AccuCall Wizard tests the telephone line at the first extension. If AccuCall Wizard does not detect a line, check that the line is connected at both ends. You can also plug an ordinary telephone into the extension to check if the socket is working.

When AccuCall Wizard verifies that the first extension is present, the Channel 1 Configuration dialog box appears.



13. In the Extension Number text box, type the number of the second extension (connected to your Brooktrout voice board on channel 1).
14. Click Next>.

If AccuCall Wizard cannot detect the line, check that the phone line is connected at both ends. You can also plug an ordinary phone into the extension to check if the socket is working.

AccuCall wizard calls between the two extensions to verify the extension numbers. If either extension is incorrect, AccuCall Wizard displays an error message indicating which of the two numbers was not correct. You can change the second extension or click Back to re-enter the number for the first extension.

After AccuCall Wizard verifies both extension numbers, the Training and Testing dialog box appears.

15. Click Next> to begin the training session.

The dialog box informs you about the status of the training.



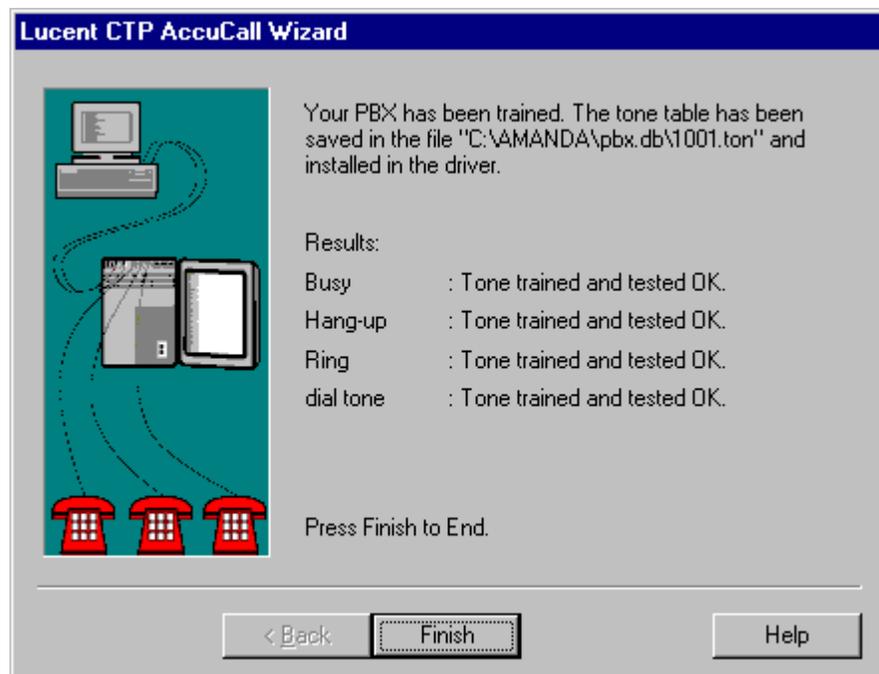
Current Tone Displays the name of the tone AccuCall Wizard is training.

Action Displays the phase of training for the current tone.

Progress Displays progress as a progress bar.

You can press **Cancel** at any time during training, but it may take up to 10 seconds for AccuCall Wizard to stop after you press **Cancel**.

When AccuCall Wizard finishes the training session, the **Finish** dialog box displays the results.



For each tone, AccuCall Wizard displays one of the following messages:

Message	Definition
Failed to train tone	AccuCall Wizard was unable to train your Brooktrout voice board to recognize this tone, but it created a PCPM table containing the failed tone along with the other tones.
Tone trained but failed to save	AccuCall Wizard was unable to place this tone in the PCPM table, but it made a PCPM table containing the other tones.
Tone trained but failed test	The tone failed the test, but AccuCall Wizard created a PCPM table containing the failed tone along with the other tones.
Silence detected	The tone does not exist on your PBX, so AccuCall Wizard detected silence. This is not an error message.
Tone trained and tested OK	AccuCall Wizard trained your voice board to recognize the tone and added it to the PCPM table.

16. Click Finish to end the AccuCall Wizard session.

Troubleshooting

If AccuCall Wizard failed to train your Brooktrout voice board to recognize one or more of the tones, it creates:

ACCUWIZ.ZIP Contains the PCPM table along with a recording of all tones

ACCUCAL.LOG Contains the training session's log

You can fix a failed tone from this zipped file using the Brooktrout utility AccuCall for Windows, or you can contact technical support for help.

Configuring a Customized Tone

Use the Custom Tone Configuration dialog box to designate a custom tone for AccuCall Wizard to store in the PCPM table.

To customize a tone:

1. From the Advanced Settings dialog box, select Custom 1, Custom 2, or Custom 3.
2. Click the Configure... button beside your choice.

The Custom Tone Configuration dialog box appears.

Custom tone configuration

Tone Settings

Tone Name: Terminating

PCPM code: Type:

Line Setup Details

Function	Channel	Dial String
Dial	0	555
Dial	0	322
Dial	0	555

Function: Channel: Dial String:

3. Type a name for this tone in the Tone Name text box.
4. Select the Terminating check box if the custom tone should terminate voice functions. (Clear it otherwise.)

Examples of terminating tones are the busy signal and a hangup.

5. Type the PCPM code for the custom tone in the PCPM Code text box. PCPM codes range from 1 to 255.

Use 7 for busy, fast busy, do not disturb, hangup or cleardown tones.

Use 8 for ringing tones.

Use 10 for answer tones.

Use 11 for intercept tones.

Use 13 for a fax tone (13 to 36 are acceptable).

6. From the Type drop-down list box, select the type of tone: Ringback, Busy, and Other. The default is Other.

Use Busy for busy, fast busy, do not disturb, hangup, and cleardown tones.

Use Ringback for all types of ringing tones.

Use Other for all other tone types.

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow. Set these so channel 0 receives the custom tone. For example, the pre-designed hangup tone uses the following instructions:

Function	Channel	Dial String
Dial	1	EXT0
Wait for Call	0	n/a
Off hook	0	n/a
On hook	1	n/a

According to these instructions, channel 1 calls channel 0. Channel 0 waits for the call, then goes off hook. Then channel 1 goes on hook so channel 0 receives the hangup tone.

To add a line setup instruction:

- a. From the Function drop-down list box, select a type of instruction: Off hook, On hook, Dial, Wait for call, or Pause.
- b. From the Channel drop-down list box, select the telephone channel to perform the instruction.
Channel 0 must receive the custom tone so the default is 0.
- c. In the Dial String text box, type the telephone number for AccuCall Wizard to dial.
- d. Click Add to add the selected Function, Channel, and Phone number to the instruction list.

To insert a line setup instruction above the selected instruction:

- a. Select the instruction from the Line Setup Details list box.
- b. Make your changes then click Insert.

To delete a line setup instruction:

- a. Select the instruction from the Line Setup Details list box.
The Function, Channel, and Dial String boxes reflect your choice.
- b. Click Delete.

To edit a line setup instruction:

- a. Add or insert the new line.
 - b. Delete the old.
7. Select OK from the Advanced Settings dialog box to go back to AccuCall Wizard's Tone Configuration dialog box.
 8. Click Next>.
The First Extension dialog box appears.

Configuration Examples

The following examples show the configuration settings for common call progression tones that you might want to train your Brooktrout voice card to recognize. In each of these examples, [EXT0/1] indicates the number of either extension 0 or 1.

To configure the Dial Tone tone:

1. In the Custom Tone Configuration dialog box, type the name Dial Tone in the Tone Name text box.
2. Clear the Terminating check box.
3. Type a number from 1 to 255 in the PCPM Code text box.
4. From the Type drop-down list box, select Other.

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow.

Function	Channel	Dial String
Offhook	0	

According to these instructions, channel 0 goes offhook to hear the dial tone.

To configure the external ring tone used by your PBX:

1. In the Custom Tone Configuration dialog box, type the name Network Ring in the Tone Name text box.
2. Clear the Terminating check box.
3. Type 8 in the PCPM Code text box.
4. From the Type drop-down list box, select Ringback.

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow.

Function	Channel	Dial String
Dial	0	[any non-busy number]

According to these instructions, channel 0 dials any non-busy number to hear the network ring tone.

To configure the external busy tone used by your PBX:

1. In the Custom Tone Configuration dialog box, type the name Network Busy in the Tone Name text box.
2. Select the Terminating check box.
3. Type 7 in the PCPM Code text box.
4. From the Type drop-down list box, select Busy.

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow.

Function	Channel	Dial String
Dial	0	[any busy number]

According to these instructions, channel 0 dials any non-busy number to hear the network ring tone.

Dial 0 [any busy number]

This configuration tells channel 0 to dial a busy number and hear the external busy tone.

To configure the reorder tone used by your PBX:

1. In the Custom Tone Configuration dialog box, type the name Reorder in the Tone Name text box.
2. Select the Terminating check box.
3. Type any number from 1 to 255 in the PCPM Code text box.
(Use 7 if the reorder tone is a busy, and therefore, terminating tone.)
4. From the Type drop-down list box, select Other.
(Use Busy if the reorder tone is a busy tone.)

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow.

Function	Channel	Dial String
Dial	0	[any invalid number]

According to these instructions, channel 0 dials an invalid number to hear the reorder tone.

Pre-Configured Tones

AccuCall Wizard automatically trains the voice board to recognize the pre-configured Ringing, Busy, and Hangup tones. You can view the configuration for these tones by selecting the Configure button next to any of the three tones in the Advanced Settings dialog box.

The following examples explain the configuration for the three default tones. In these examples, [EXT0/1] indicates the number of either extension 0 or 1.

To configure the Ring tone:

1. In the Custom Tone Configuration dialog box, type the name Ring in the Tone Name text box.
2. Clear the Terminating check box.
3. Type 8 in the PCPM Code text box.

- From the Type drop-down list box, select Ringback.

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow.

Function	Channel	Dial String
Dial	0	EXT1

According to these instructions, channel 0 calls channel 1. Channel 0 then hears the Ring tone.

To configure the Busy tone:

- In the Custom Tone Configuration dialog box, type the name Busy in the Tone Name text box.
- Check the Terminating check box.
- Type 7 in the PCPM Code text box.
- From the Type drop-down list box, select Busy.

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow.

Function	Channel	Dial String
Offhook	1	
Dial	0	EXT1

According to these instructions, channel 1 to go offhook. Channel 0 then dials channel 1 and hears the busy tone.

To configure the Hangup tone:

- In the Custom Tone Configuration dialog box, type the name Hangup in the Tone Name text box.
- Check the Terminating check box.
- Type 7 in the PCPM Code text box.
- From the Type drop-down list box, select Other.

The Function, Channel, and Dial String options define a series of line setup instructions for AccuCall Wizard to follow.

Function	Channel	Dial String
Dial	1	EXT0
Wait for call	0	
Offhook	0	
Onhook	1	

According to these instructions, channel 1 dials channel 0. Channel 0 waits for the call, then goes offhook. Then channel 1 goes onhook, and channel 0 hears the Hangup tone.

Some PBXs do not use a hangup tone. In this case, a message appears in AccuCall Wizard's final dialog box saying that silence was detected.

Using AccuCall for Windows

Call progress tones, such as the busy, dial, and fast busy tones, provide Amanda with important information, which allows Amanda to control how Brooktrout voice boards manage Call Progress Monitoring (CPM). This is called Programmable Call Progress Monitoring (PCPM). AccuCall for Windows provides a quick, error-resistant method to create and edit PCPM tables.

NOTE: Running Accucall is only necessary if you have Amanda performing supervised transfers or if your telephone systems sends a tone as a disconnect signal.

Before running Accucall, place a few test calls to see if the Amanda system performs PCPM correctly. You can call into Amanda from an outside line and dial an on-hook extension that has a mailbox configured to perform a supervised transfer. Using the Monitor client, you'll see the port go into PCPM while Amanda supervises the call. To test the RNA condition (ring-no-answer), allow the telephone to ring until the PCPM changes to RNA. To test the Busy condition, perform the same test while the extension is off-hook. You should see the PCPM change to Busy. If your RNA and Busy test calls were successful, you don't need to run Accucall. If they failed and the PCPM changed to Error, running Accucall will fix the problem.

AccuCall for Windows can do the following:

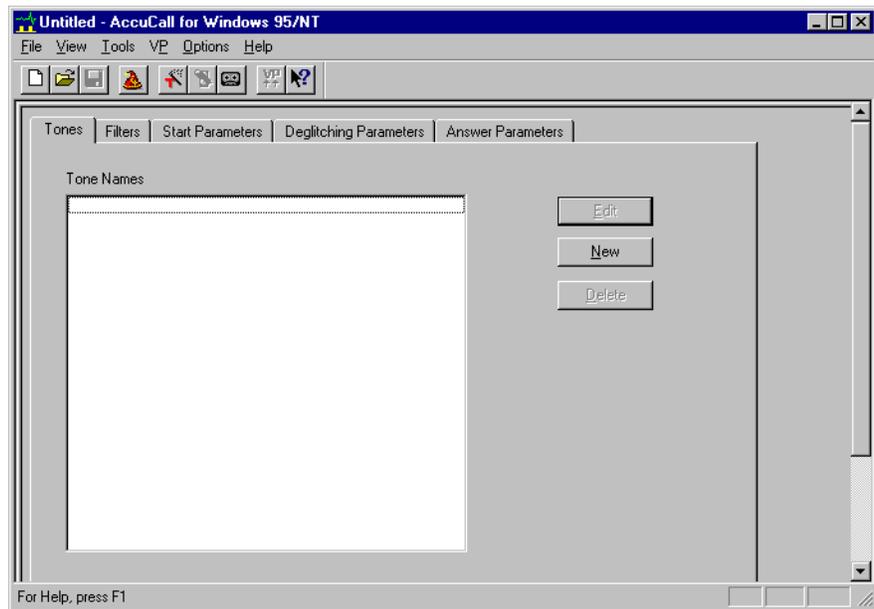
- Add a new tone to your PCPM table
- Test if a that tone can be detected on the line
- Edit a tone in an existing PCPM table
- Record a tone

Starting AccuCall for Windows and Opening a Tone (.TON) File

To start AccuCall for Windows:

1. From the Start menu, select **Start⇒Programs⇒Brooktrout⇒AccuCall for Windows**.

The AccuCall for Windows application window appears.



2. Do one of the following (to create a new or use an existing PCPM table):
 - On the File menu, click New... to create a new PCPM table.

The New dialog box appears.

 - a. Select C:\AMANDA\1001.TON or 2001.TON.
 - b. Click OK.
 - On the File menu, click Open... to use an existing PCPM table.

The Open dialog box appears.

 - Select C:\AMANDA\1001.TON or C:\AMANDA\2001.TON then click OK.

This chapter explains how to use the Tones and Filters tabs. Nothing is listed in the Tone Names list box if you are testing the first tone in a new PCPM table. See AccuCall for Windows help pages for details about the Start, Deglitching, and Answer tabs. You should **never** change many of these settings without direction from Brooktrout customer support!

Setting up your Test Environment

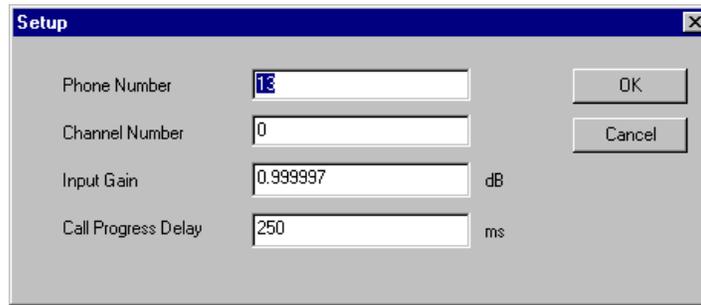
Before you use AccuCall for Windows to learn, test, edit, or record a tone, you must provide information about your test environment.

AccuCall for Windows stores the most recent test environment information in an .INI file. Therefore, if you have no changes to the environment, you can skip this procedure and go on to “Learning a New Tone” on page 72.

To give AccuCall for Windows the test environment information:

1. On the Options menu, click Setup.

The Setup dialog box appears.



The settings you use here becomes the default settings used throughout AccuCall for Windows.

2. In the Phone Number text box, type the number for the line to be accessed first or most frequently.
To use a dial tone, replace the number with a string of commas (for example:,,,,,). Each comma triggers two seconds of processing.
3. In the VP Channel Number text box, you indicate what Brooktrout voice board you are using (0 for the first port, 1 for second, and so on).
4. Do not change the settings for the Input Gain and the Call Progress Delay text boxes.
Input Gain should remain 0.99997 dB, the number selected by Brooktrout's engineers.
Call Progress Delay allows time for the energy on the line to stabilize after the number is dialed.
5. Click OK to return to the AccuCall for Windows application window.

Learning a New Tone

You must learn a new tone and test it before learning the next tone.

To use AccuCall for Windows to learn a new tone:

1. Set up the telephone situation you want to test.

For example, for a ring-no-answer tone:

Make an extension that is not forwarded, not in a hunt group, not in hands free/speaker phone mode, and not answered by anyone.

For example, for a busy tone:

Make an extension be offhook and connected to either another internal extension or to an outside line.

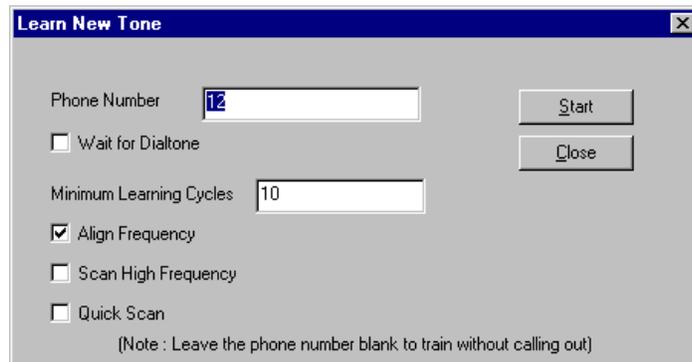
For example, for a reorder tone:

Use a telephone number for an invalid extension. This extension number must return the reorder tone. For example, you might use 777 or 888. Test this tone from a single-line telephone before you run this test.

NOTE: A reorder tone only needs to be learned if it is the disconnect signal provided by your telephone system signaling a hang-up. If your telephone system sends a reorder as a disconnect, make sure you set the reorder tone to be terminating and that its frequencies are defined within the first four filters in the Filter tab. If your telephone system provides some other type of positive disconnect signal, you don't need to learn the reorder tone.

2. On the Tools menu, click Learn New Tone.

The Learn New Tone dialog box appears.



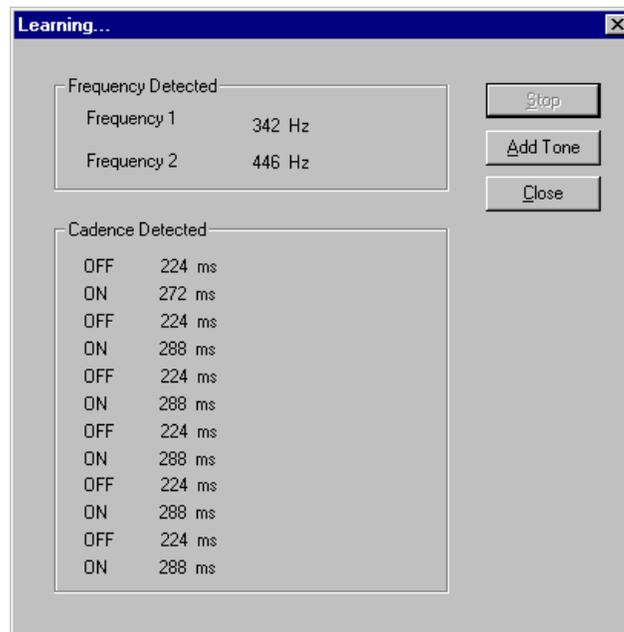
3. Type the telephone number for the extension that has the tone to be learned.
4. Select the Wait For Dialtone check box to wait for the dial tone—if appropriate.
5. In the Minimum Learning Cycles text box, type the number of times that the function repeats the cadence analysis.

For example, for Ring No Answer, this is the number of rings AccuCall for Windows will listen to before completing the test cycle.

The Amanda Company recommends using 10.

6. To identify a frequency that is within 40Hz of the PCPM table frequency as the PCPM table frequency, select the Align Frequency check box.
7. When learning pager or other high frequency tones, select the Scan High Frequency check box to scan the tone for higher frequencies.
8. For short duration tones, select the Quick Scan check box.
Frequencies are scanned at twice the normal speed, but accuracy is reduced.
9. Click Start.

The Learning... dialog box displays the cadence and indicates that AccuCall for Windows is learning the tone.



The tested tone's on and/or off times are displayed in the Cadence Detected group box while AccuCall for Windows is learning the tone.

After the tone is learned, the tone's frequencies appear under Frequency Detected.

10. After AccuCall for Windows finishes learning the tone, click Add Tone.

The Edit Tone dialog box appears. It displays the tone's frequencies in the Frequency 1 and Frequency 2 text boxes. It displays cadence information in the Primary Cadence and Secondary Cadence group boxes.

The screenshot shows the 'Edit Tone' dialog box with the following fields and controls:

- Tone Name:** A text box for naming the tone.
- Description:**
 - Type:** A dropdown menu currently set to 'Busy'.
 - Terminating:** An unchecked checkbox.
 - Cadence Only:** An unchecked checkbox.
 - PCPM code:** A text box containing '0'.
 - Quick Count:** A text box containing '-1' with 'ms' next to it.
- Primary Cadence:**
 - First Element:**
 - Frequency 1: 0 Hz
 - Frequency 2: 0 Hz
 - Duration: 0 ms
 - Max Duration: 0 ms 10 %
 - Min Duration: 0 ms 10 %
 - Second Element:**
 - Frequency 1: 0 Hz
 - Frequency 2: 0 Hz
 - Duration: 0 ms
 - Max Duration: 0 ms 10 %
 - Min Duration: 0 ms 10 %
- Secondary Cadence:**
 - First Element:**
 - Frequency 1: 0 Hz
 - Frequency 2: 0 Hz
 - Duration: 0 ms
 - Max Duration: 0 ms 10 %
 - Min Duration: 0 ms 10 %
 - Second Element:**
 - Frequency 1: 0 Hz
 - Frequency 2: 0 Hz
 - Duration: 0 ms
 - Max Duration: 0 ms 10 %
 - Min Duration: 0 ms 10 %

You usually don't need to change any of the frequency and cadence setting if Accu-Call for Windows learned the tone successfully.

11. Type a name for the tone in the Tone Name text box.
12. From the Type drop-down list box, select a type for the tone: Busy, Ringback, or Other.
13. If the tone is a terminating tone, select the Terminating check box.

For example, Ring No Answer tones are non-terminating, while Reorder tones are terminating.

If you select this check box, the tone is monitored in the background while other functions are running. If the tone is detected, then the function is terminated.

14. To ignore the frequencies when matching this tone with the one being detected on the line, select the Cadence Only check box.

This check box is useful for modulated tones, when the tone is not continuous (variable amplitude), or for noisy lines.

15. To ignore the cadence when matching this tone with the one being detected on the line, type a positive integer in the Quick Count text box.

The value entered in this box becomes the amount of time (in milliseconds), that the frequencies have to be present for this tone to be detected. The Quick Count setting is mainly used for dial-tone detection.

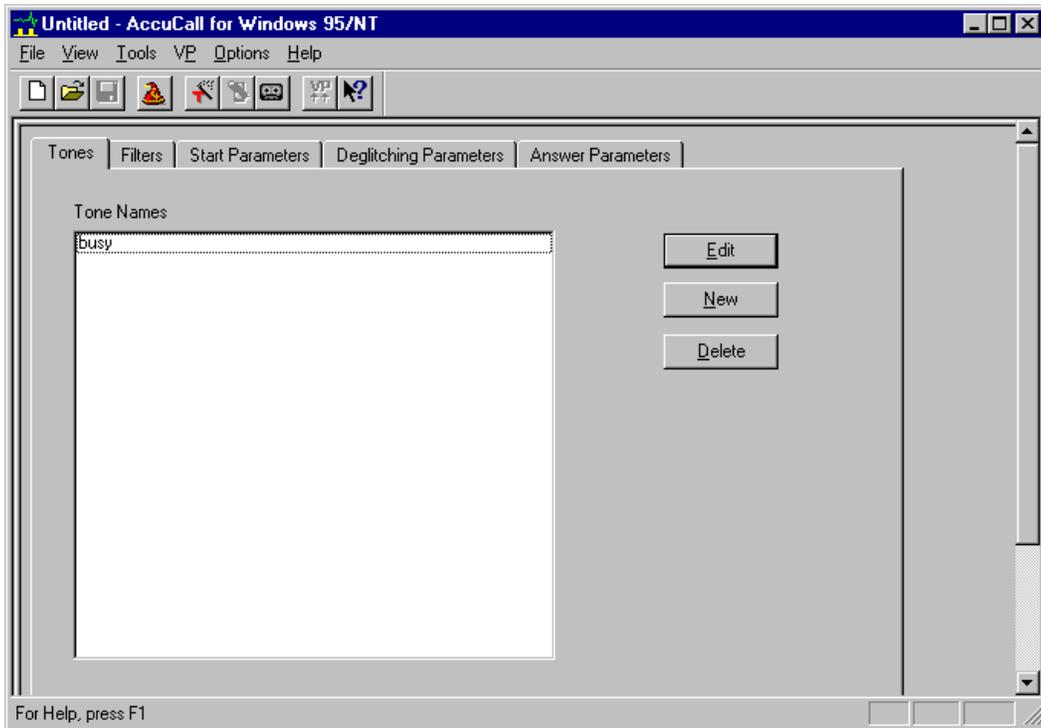
A value of -1 disables this feature. Do not use this feature if other tones also use the same frequencies.

16. Type a PCPM code in the PCPM Code text box.

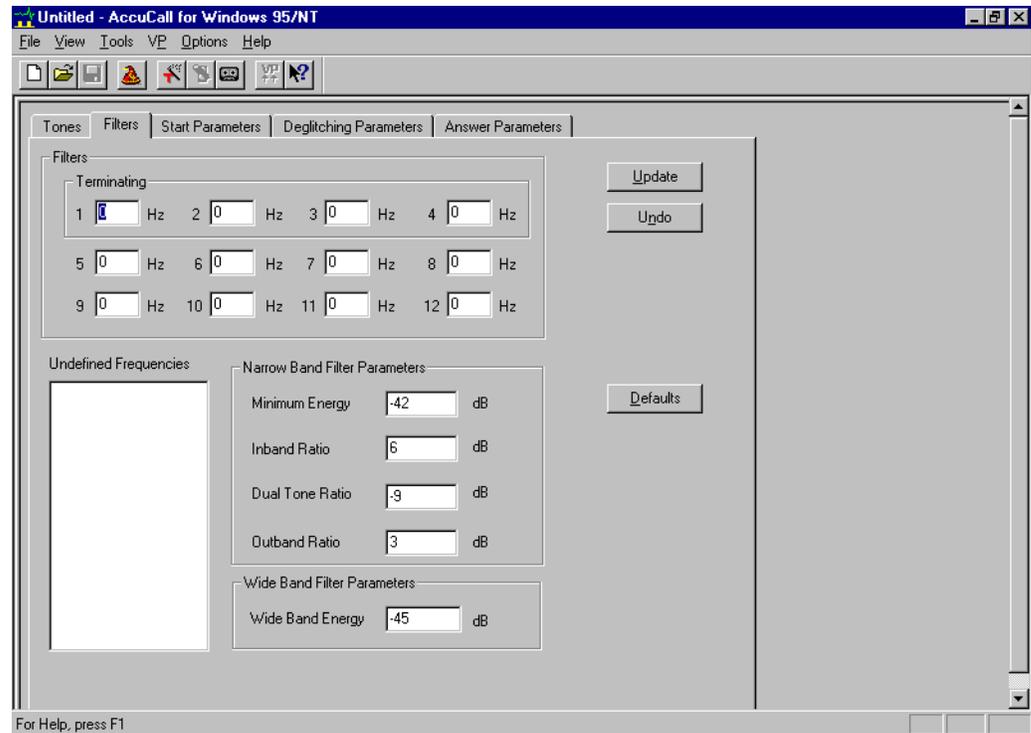
For example, ring tones are always 8. Busy and Reorder (or Fast Busy or Error) are always 7.

17. Click OK.

The tone's name, for example busy, appears in the Tones window.



18. You must add the tones frequencies to the Filters window.
 - a. Select the Filters tab (or from the View menu, click Filters).



The frequencies from the just-learned tone appear in the Undefined Frequencies list box—unless a frequency is identical to an existing filter’s frequency.

- b. Type the frequency’s exact value into one of the twelve text boxes in the Filters box.

If you designated a tone as Terminating in the Edit Tone dialog box, you must type each of its frequencies in one of the first four text boxes.

- c. After you have entered the frequency or frequencies, click Update.

19. Test each tone before learning the next tone.

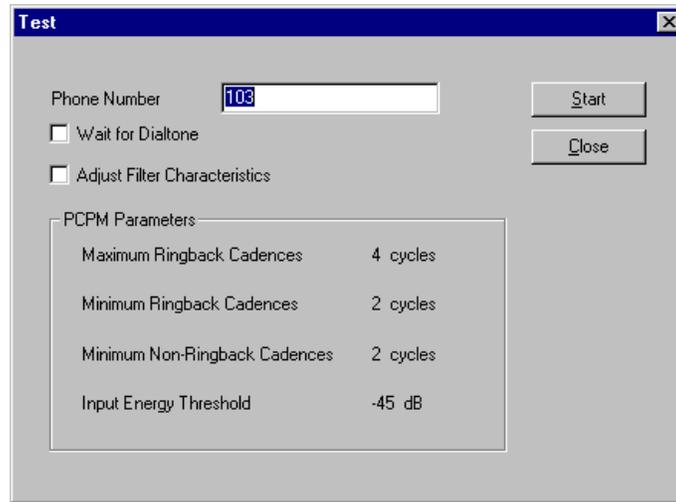
Testing a Tone

This procedure uses AccuCall for Windows to test whether your Brooktrout driver recognizes a tone. You must test a tone as soon as you add it. You also need to test a tone when you change its traits because you want to know what effect the change has on the driver’s ability to recognize the tone.

To test a tone:

1. From the Tools menu, click Test PCPM Table.

The Test dialog box appears.



2. Enter the telephone number of the line that has the tone to be tested.
3. If the dial tone on your telephone switching system is continuous, select the Wait For Dialtone check box. This confirms that the telephone line is connected to the voice board channel before the training starts.

Clear it if the dial tone is not continuous.

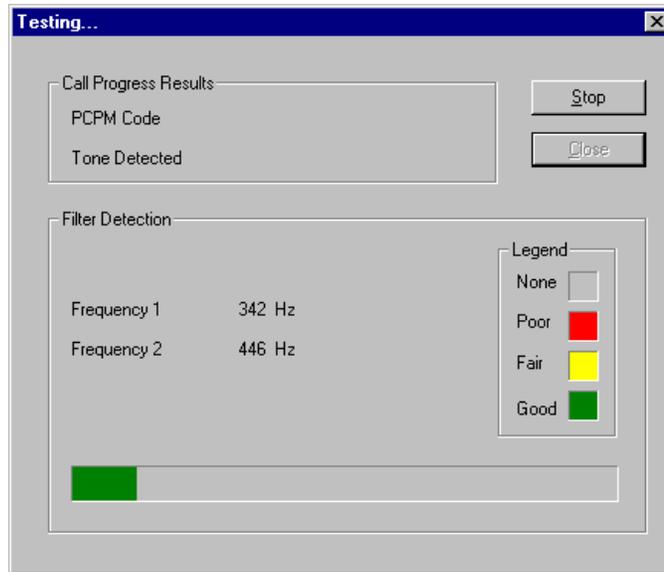
4. If this is the first tone in this tone file, select the Adjust Filter Characteristics check box.

This allows AccuCall for Windows to use the traits of the test tone to tune the filter characteristics it uses to detect all frequencies.

Only use it on subsequent tones if tones are not being recognized very well. If you select the Adjust Filter Characteristics check box on a subsequent tone, delete from the PCPM table all other tones, then learn those tones again.

5. Click Start.

The Testing... dialog box appears.



6. Click one of the following:
 - Stop if you want to abort the test before it completes the assigned cycles.
 - Close to close the Testing dialog box after the test is finished.

Adding a Tone Manually

If you know all the settings for a tone's traits, you can enter them all manually.

If, afterwards, you learn a tone, AccuCall for Windows will overwrite those values.

To add a tone manually:

1. Select the Tones tab (or from the View menu, click Tones).
2. Click New.

The New Tone dialog box appears.

3. Add the appropriate data then click OK.

To add the tone's frequency to the Filters window:

1. Select the Filters tab (or from the View menu, click Filters).
2. Add the new frequency and delete the old (unless it is used by another tone).

Editing a Tone

Sometimes you will manually change some of a tones properties.

To change one or more properties of a tone:

1. Select the Tones tab (or from the View menu, click Tones).
2. Click Edit.

The Edit Tone dialog box appears.

3. To change the name you originally gave this tone, type a new name in the Tone Name text box.
4. To change whether a tone's terminating status, select or clear the Terminating check box.

You can use this check box to terminate functions in real time when the tone is detected. When selected, the tone must use one of the first four filters listed in the Filter dialog box.

5. To stop AccuCall for Windows from testing the frequency of the tone, select the Cadence Only check box.

This is useful if one or more of the tones in the PCPM table for the PBX has the same frequency.

Clear it to use both the frequency and the cadence.

6. To have AccuCall for Windows test whether the tone's frequency is on the line for a specified duration of time, type that number of milliseconds in the Quick Count text box.

This is useful if the tone's frequency is constant, (for example: a dial tone), or if the tone's cadence is very short, (for example: fax or pager tones).

Do not use this option if any tones in the PCPM table use the same filters.

The value '-1' turns this option off.

7. Click OK.

If you change a tone's frequency, you will have to change the Filters window as well.

To add a new frequency to the Filters window:

1. Select the Filters tab (or from the View menu, click Filters).
2. Add the new frequency and delete the old (unless it is used by another tone).
3. Type the frequency's new value over its current value in the Filters box.

If you designate a frequency as Terminating in the Edit Tone dialog box, you must type that tone in one of the first four text boxes.

4. After you have made the modifications you want to make, click Update.

Using Your PCPM Table

This procedure describes how to have the Brooktrout voice processing driver use your PCPM table.

To use your PCPM table:

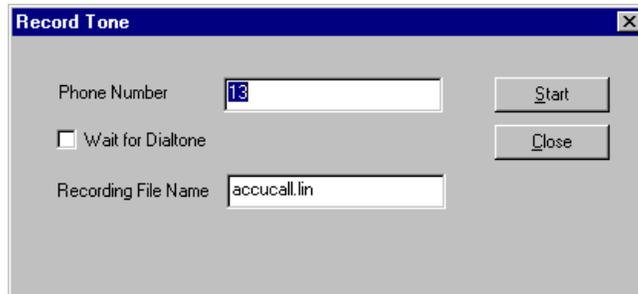
1. Open the PCPM Table stored in your tone file (.TON).
2. On the VP menu, click Install Table to VP Driver.

Recording a Tone

To record a tone:

1. From the Tools menu, click Record Tone.

The Record Tone dialog box appears.



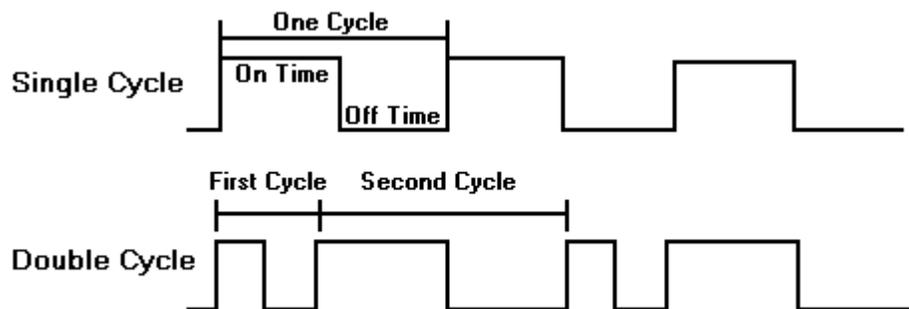
A progress bar appears.

2. Click Stop at any time to stop the recording.

Understanding Call Progress Tones

Your PBX uses audible tones called call progress tones to indicate the progress of a call. These tones include the dial tone, busy tone, and ringing tone like those used by the public telephone network. Amanda and individual callers use call progress tones to determine how to respond during a call. For example, the busy signal indicates that the extension is busy. Different tones vary in frequency and cadence.

- A call progress tone usually has one or two frequencies, referred to as single-frequency or double-frequency tones. Individual frequencies can range between 300 Hz and 4000 Hz.
- A cadence consists of the on time and off time. Tones can either have one cycle or two cycles, referred to as single cycle or double cycle cadences as shown in the following figure.



The following table shows some common tones for the US public telephone network.

Tone	Frequency	Cadence	
		On Period	Off period

Trunk/Fast Busy	480 Hz and 620 Hz	250 msec.	250 msec.
Station Busy	480 Hz and 620 Hz	500 msec.	500 msec.
Ringing	440 Hz and 480 Hz	2 sec.	4 sec.

Recognizing Tones

Since PBXs use different frequencies and cadences for their tones, you need to train your Brooktrout board to recognize these specific tones.

AccuCall Wizard automatically trains your board to recognize the hangup, busy, and ringing tones of your PBX.

- The hangup tone indicates that the other line has gone onhook.
- The busy tone indicates that the line you called is busy. There are two types of busy signals: trunk busy and station busy. Trunk busy, also called fast busy, indicates that all paths in the network are busy. Station busy means that the number or extension you called is busy.
- A ringing tone indicates to the called station that there is an incoming call. A simulated ringing signal is returned to the caller to indicate that a path has been established and the called number or extension is being rung. The simulated signal is called ring back.

You can customize AccuCall Wizard to recognize custom tones such as dial tone or any other tones used by your PBX with a frequency of 300 Hz to 4000 Hz.

AccuCall Wizard stores information about each tone in a tone table. For each tone, the tone table contains the frequency, cadence, Programmable Call Progression Monitor (PCPM) number associated with the tone, and other tone-specific characteristics. AccuCall Wizard automatically assigns a PCPM number to the pre-configured tones.

Responding to Incoming Tones

When your Brooktrout board receives a call progress tone, it analyzes the frequency and cadence of the tone. Your driver compares the tone characteristics to those stored in the tone table. If it finds a match, the driver returns the PCPM number associated with the tone. The PCPM number conveys information about what type of tone it is and how Amanda should respond.

For example, if your Brooktrout board detects a busy tone, the driver compares the cadence and frequency of that tone to those stored in the tone table. When it matches the incoming tone to the stored busy tone, the driver reports to Amanda that a PCPM code of 7 has been received. This lets Amanda know that the line is busy, and the system responds appropriately.

Chapter 7: Faxing

Using This Chapter

This chapter:

- Explains how to set up a fax modem or the Brooktrout TruFax/200 board for use with Amanda. This applies to any voice board supported by Amanda.
- Explains how to detect a fax machine automatically.
- Provides an overview of Amanda Fax, a fax driver for sending faxes from any Windows application that can print. Amanda Fax is an Amanda client.

Using a Fax Modem

You can use a fax modem on any Amanda@Work.Group/Windows system.

The fax modem used in Amanda may be internal or external as long as it meets all of the following requirements:

- Class 2 or Class 2.0 compliant. (Be aware that Class 2 is different from Class 2.0.)
- Internal fax modems must have a UART 16550 serial interface, and external fax modems must be connected to UART 16550 serial ports.

NOTE: If you have a Class 2 modem, the default configuration settings for fax options should work well with your modem. If you have a Class 2.0 modem, change the setting for fax_send_reverse to F for False.

You must configure the fax modem for one of the following:

- COM1 with IRQ4 and no other devices on COM1 or using IRQ4
- COM2 with IRQ3 and no other devices on COM2 or using IRQ3
- COM3 with IRQ11 and no other devices on COM3 or using IRQ11

We recommend using COM1 and/or COM2 for fax modems. This port must be dedicated to the fax modem.

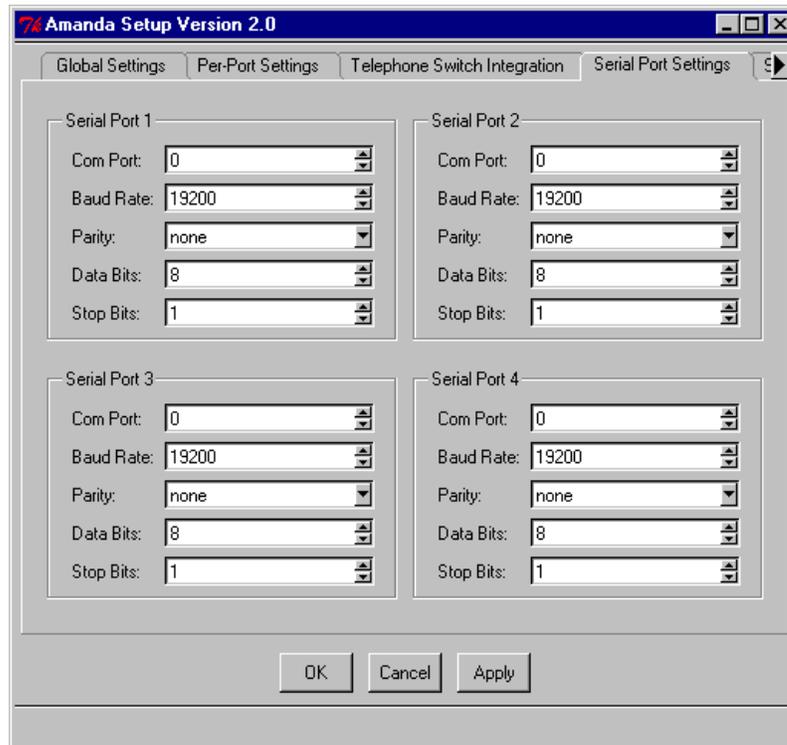
To configure a fax modem for Amanda:

1. From the Start menu, select **Start⇒Amanda Server⇒Setup**.

The Amanda Setup dialog box opens.

The Setup utility's basic operation is explained in "Logging On to Amanda" on page 5.

2. Select the Serial Port Settings tab.



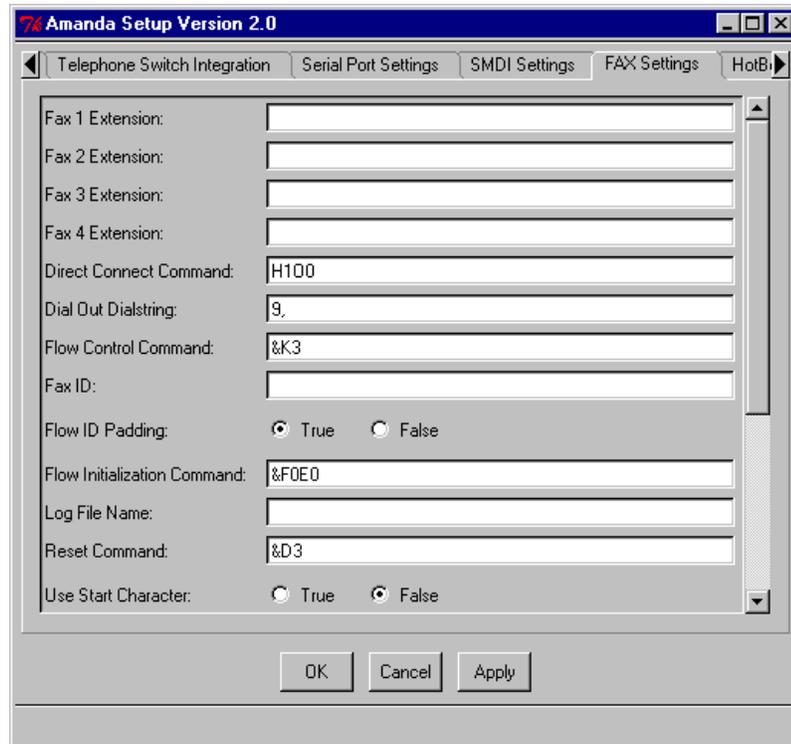
3. Select a serial port that has not yet been assigned.

To prevent confusion, you can use Serial Port 1 for COM port 1 (COM1), Serial Port 2 for COM port 2 (COM2), etc., but this is not necessary. The serial port is a logical port as understood by the Amanda system. The COM port is the physical port assigned to that logical port. For example, you can use define Serial Port 4 as COM port 1.

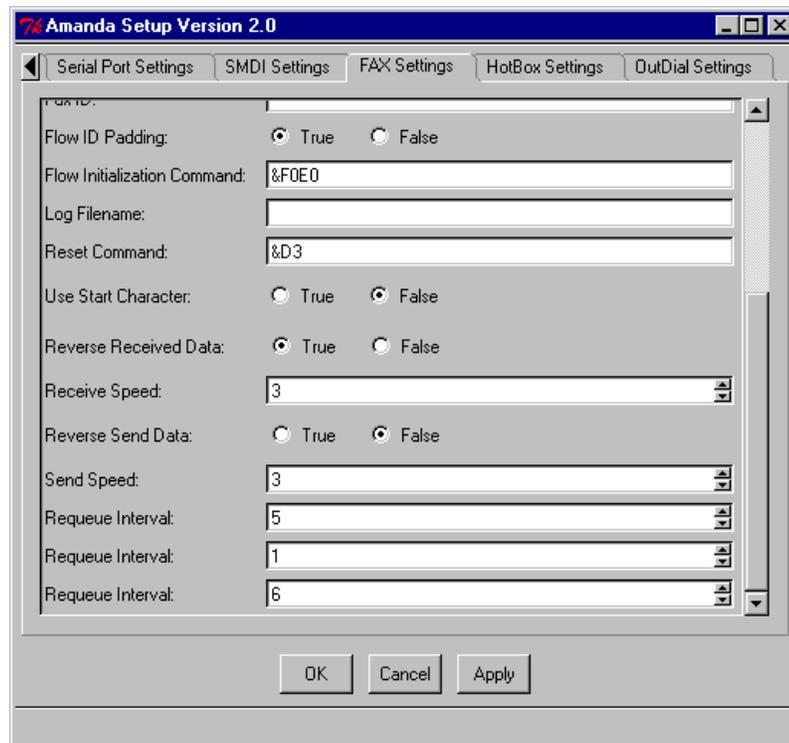
Remember the number of your serial port because you use it in step 5.

- a. Use the spin buttons to select settings for the correct COM Port, Baud Rate (really bps—bits per second), Data Bits, and Stop Bits for your fax modem.
- b. Select a parity type from the Parity drop-down list box.

4. Scroll the tab bar and select the FAX Settings tab.



Scroll the dialog box to see additional fax parameters.



Check your modem manual for the information you need to set these parameters.

5. Set Fax *n* Extension (where *n* is the number for the logical serial port) to the extension number where the fax modem is connected on the telephone switching system (this must be a single line extension).
You can have up to four fax modems connected to telephone extensions.
6. Set Dial Out Dialstring to the outside access code for the telephone switching system. (Adding a comma causes a 2-second pause.)
This parameter defaults to "9," which works for most systems.
7. Set the Flow Control Command to the Class 2 command for the type of flow control used by your fax modem. For several modems, the default "&K3" works.
8. Set Fax ID to a number or a name used to identify your fax modem (for example, 'FAXA').
9. Many older Class 2 fax modems need a string of leading digits '1111' for their Fax ID. By default, Amanda adds these digits.
However, if they appear on the receiving fax machine, set Fax ID Padding to true.
10. Set Longest Local Extension to the maximum number of digits contained in a local extension number. This is used when the "72" Fax retrieve command is selected so that *Dial Out Dialstring* (usually '9,') will be applied only for outside calls.

NOTE: You don't need to change the default values for the other fax configuration parameters. For a description of these settings, see "Fax Settings" on page 224.

To use the fax modem effectively, you must also use tokens to program the Extension fields for one or more mailbox. For more information, see "Allowing One-call and Two-call Faxbacks" on page 173.

Fax settings are stored in the install.cfg file.

Suggested Settings

The following modems have been used with Amanda with the following settings. This is not a comprehensive list, and many other modems work with Amanda. The following settings are not even guaranteed to work with your modem (even if your modem is one of those listed) because modem manufacturers produce a variety of models and change their firmware from time to time. However, you may want to try them.

Zoom Modems:

Flow Control Command	&K3
Dial Out Dialstring	-

Rockwell-based Modems:

Flow Control Command	&K3
----------------------	-----

Aceex Modems

Flow Control Command	\Q3 &K3
----------------------	---------

Practical Peripherals Modems

Flow Control Command	X3 &K3
----------------------	--------

SmartOne 1442 Faxmodems

Flow Control Command	&K4
----------------------	-----

Direct Connect Command	H100
fax_receive_reverse	T
Maximum Retries	&D3
Reverse Send	F

Boca modem M144EW

Flow Control Command	&K3
----------------------	-----

Using the Brooktrout TruFax/200 Board

The Brooktrout TruFax/200 board is a two-port ISA board. Its driver supports up to 6 boards, giving Amanda the ability to have as many as 12 industrial-strength fax ports, in addition to 48 voice ports. You cannot simultaneously use both fax modems and TruFax boards. Amanda's support for them is mutually exclusive.

To use TruFax boards:

1. Configure the board that you will be using.

As with Brooktrout voice boards, all the fax cards can be jumpered to use the same IRQ interrupt number, but they should all have unique I/O addresses set via the Address dip switches.

Make sure that the IRQ and I/O addresses that you choose do not conflict with any other devices in the computer, and configure the system's BIOS's plug-and-play settings so that it is aware that a Legacy ISA device will be using the IRQ you have chosen. Then it will not subsequently try to assign another device to that same IRQ.

2. Install the TruFax driver from the Amanda installation CD by executing TruFax.exe and following its prompts.

NOTE: The TruFax board does not use DMA, so you should input -1 in response to that question. Be sure to choose Yes to have the driver start automatically when you start the computer.

3. Test your installation by running the faxinit.exe program manually from the command prompt. The driver normally finds all the TruFax/200 boards automatically, but sometimes you have to create a configuration file listing the I/O addresses of the boards that you have installed. This prevents the driver from searching other I/O addresses and becoming confused by other devices it happens to find at those addresses. If you have four boards at 304, 308, 30C, and 310, the configuration file would read

```
addr 304
addr 308
addr 30C
addr 310
```

Type the name of this configuration file on the command line after faxinit.

IMPORTANT: If a configuration file is necessary, you must run the "Install TruFax Driver" again so that you can change your answer to the last question (which asks what arguments should be passed to faxinit when the driver is starting). Otherwise, the driver will continue to use your new configuration file each time the system starts.

4. When using the TruFax boards from Amanda, only the following fax parameters are used:
 - Fax ID, an up to 20-character string used to identify your Brooktrout TruFax/200 board. Use the company name or the telephone number of your fax machine.
 - Log Filename, the name of the log file that records data about files (not messages) that are faxed. The Amanda Company recommends using FAX.LOG.
 - Maximum Retries, the number of times (from 0 to 9) to attempt to resend a fax after an unsuccessful transmission.
 - Fax n Extension (where n is 1, 2, 3, or 4), parameters that specify the extension numbers that the telephone switching system uses for first four fax ports (the fax ports on the first two TruFax cards). If there are more than four TruFax ports, then their extensions must be consecutive and are determined from Fax 4 Extension. For example, the 5th fax port is assumed to be the next extension; the 6th the one after that, etc.

The remaining fax parameters apply only to fax modems, so they are not used by the TruFax boards.

Hot box settings are stored in the install.cfg file.

5. You can set fax_monitor, a global setting parameter that notifies the sending mailbox about the success or failure of a fax transmission.

Global settings are stored in the install.cfg file.

Integration settings are stored in the 1001.PBX or 2001.PBX file.

6. Finally, you can set tmo_dtwait, the dial code parameter that determines whether a TruFax board waits for a dialtone before dialing. If this parameter's setting is positive, the TruFax board will wait for a dialtone.

Dial code settings are stored in the 1001.PBX or 2001.PBX file.

Detecting a Fax Machine Automatically

Amanda can detect and accept incoming faxes automatically.

To automatically detect and accept an incoming fax:

- The fax connect tone must be in the PCPM tone table.

The tone information is stored in C:\AMANDA\PBX.DB\1001.TON.

The tone must be one of the first four tones or frequencies defined, and it must be marked as a terminating tone. The PCPM code associated with the tone must be in the range 12–21.

- A mailbox (usually 994) must be set up to process faxes. To learn how to create that mailbox, see *Administering Amanda@Work.Group/Windows*.
- That mailbox must be specified in the hot_box configuration option. See “Creating the Hot Box Mailbox” on page 91.

Hot box settings are stored in the install.cfg file.

Modifying the PCPM Tone Table

To modify the tone table for Brooktrout voice boards:

1. Run AccuCall Plus.

For more information about AccuCall Plus, see “Using AccuCall for Windows” on page 70.

2. To detect a FAX tone, use the following:

NAME:	FAX CNG TONE
TYPE:	OTHER
TERMINATING:	YES
CADENCE:	NO
FREQ1:	1100
FREQ2:	NONE
PCPMCODE:	12 (12 through 21 are acceptable)
QUICKCOUNT:	400
ON TIME:	528
OFF TIME:	2976

All other values can remain at their defaults.

NOTE: Remember to insert the FREQ1 value of 1100 into the filter table in one of the first four positions. Only frequencies in the first four positions are used for terminating tones.

Creating the Hot Box Mailbox

The Amanda Company recommends using mailbox 994 as the first hot_box, but you can use any valid mailbox. Use the mailbox window of Amanda Administrator to create the mailbox that will process the PCPM tone. See *Administering Amanda@Work.Group/Windows* for information about creating mailboxes.

Scenario #1: Blind transfer to fax machine

After calling Amanda, the caller presses the Start button on his fax machine during the Company greeting (or some other greeting). Amanda recognizes the tone and processes mailbox 994. mailbox 994 performs a blind transfer to the fax machine. The Extension field for mailbox 994 must contain the extension connected to the fax machine followed by an H (hangup).

Example Extension field:

1000H

where extension 1000 is connected to the fax machine

Scenario #2: Fax message left for user (who can view the fax using Amanda Messenger)

The caller dials a user and presses the Start button on his fax machine during the user's greeting. Amanda recognizes the tone and processes mailbox 994. mailbox 994 tells Amanda to create a fax message for the user who was called. The Extension field for mailbox 994 contains tokens similar to the following:

Example Extension field:

```
@J( %P, ' ', '%X%F-H' )
```

which translates as the following:

@	Indicates to Amanda that the system is to perform token programming
J() token	Command that allows a fax to be received as a file or as a message for a mailbox
%P	Indicates that the owner of the most recently processed mailbox is to receive the fax message
' '	Makes Amanda wait until a call rings into a fax port
%X	System variable that contains the codes needed to transfer dial tone on the current port
%F	The extension of the fax port being used
-H	A hangup (after pausing a half second to complete a blind transfer)

Setting the Hot Box Options

You must let Amanda know the mailbox that will process the PCPM tone by setting the hot_box configuration option.

To designate a mailbox to accept incoming faxes:

1. Run the Setup utility. At the DOS prompt, from the directory C:\AMANDA, type:

```
SETUP
```

 Then press Enter.
2. From the main menu, press 3.
 The System Configuration Options menu appears.
3. From the System Configuration menu, type:

```
A
```

 (for Advanced Configuration).
4. From the Advanced Configuration menu, type:

```
H
```

 (for Hot Boxes).
5. Select the number that corresponds to the PCPM code.

6. Type the mailbox number next to the code.
Your typing replaces previous setting (by default -1 for no mailbox).
7. Press F10 to save.

Sending Faxes

You can install Amanda's fax driver—Amanda Fax. You can use Amanda Fax from any Windows application that has a Print command. You can send documents, spreadsheets, pictures, or anything else that the application can print. You can:

- Fax an item to another location via Amanda's fax modem.
- Create a fax message to be mailed to users on your Amanda system.
- Save the item as a file that can be:
 - Sent later as a fax via Amanda's fax modem.

For example, if you copy this file to Amanda server using Amanda Monitor, you can fax it to callers.

- Imported as a fax message.

To fax documents via Amanda voice server or create fax messages to be sent via Amanda Messenger, you need a fax modem attached to and properly configured for use with your Amanda voice server.

In all cases, you need Amanda Fax installed on each workstation from which faxes will originate.

For details about installing and using Amanda Fax, see *Amanda@Work.Group/Windows Workstation Features*. For details about faxbacks, see the "Programming Examples" chapter in *Administering Amanda@Work.Group/Windows*.

Chapter 8: Using Serial Integration

Serial Integration Overview

Serial integration is a type of digital integration in which the telephone switching system uses the computer's serial port to communicate to Amanda. A data line from the central office or telephone switching system sends information and instructions (about the caller and called party) to your on-site voice mail system.

For example, if you call Amanda from an internal extension, Amanda recognizes you and asks only for your security code. Serial integration makes getting your messages faster.

Amanda can support the following types of serial integration on Brooktrout voice boards:

- Bellcore Standard
- NEC 2000 and NEC 2400
- AT&T System 75 or Definity-G3
- Ericsson MD-110 systems
- Generic which can apply to other types of serial integration when the options are set correctly

NOTE: The Amanda Company recommends using a user's telephone extension number as his mailbox in all cases, but, with digital integration, this one-to-one correspondence is required.

Serial port and serial integration (SMDI) settings are stored in the install.cfg file.

Bellcore Standard SMDI

This section covers serial integration for any telephone switching system that uses Bellcore Standard Simplified Message Desk Interface (SMDI). For example, Centrex, Northern Telecom SL-1 with a VoiceBridge, and Fujitsu F-9600 use SMDI.

To modify configuration options for use with Bellcore Standard SMDI:

1. Choose an available serial port on the computer. The serial port you use must be COM1, COM2, COM3, or COM4.

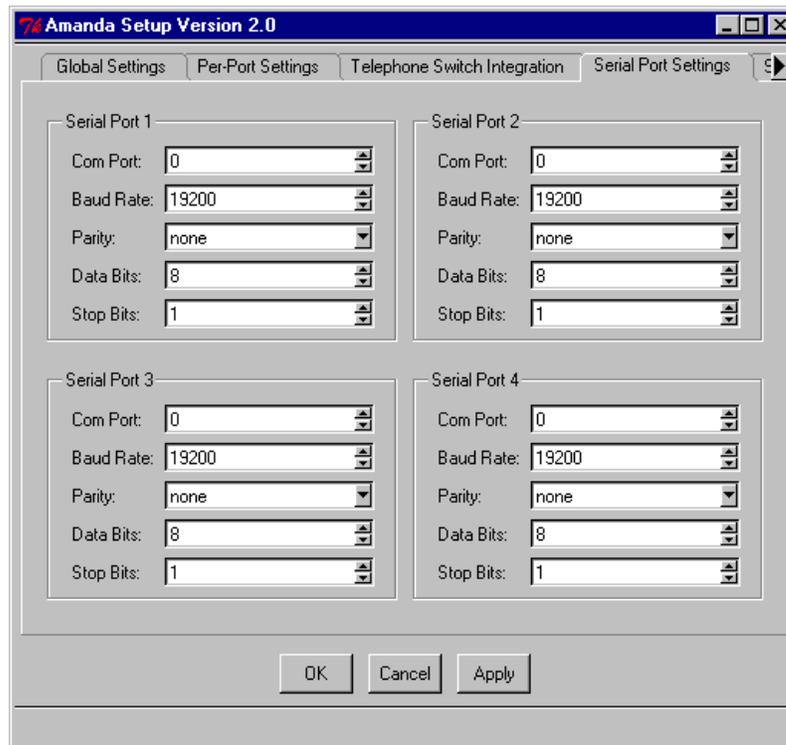
Whatever serial port you use, make sure nothing else is configured to use that port or the IRQ (hardware interrupt) configured for use with that port.

2. From the Start menu, select **Start⇒Programs⇒Amanda Server⇒Setup**.

The Amanda Setup dialog box opens.

The Setup utility's basic operation is explained in "Logging On to Amanda" on page 5.

3. Select the Serial Port Settings tab.

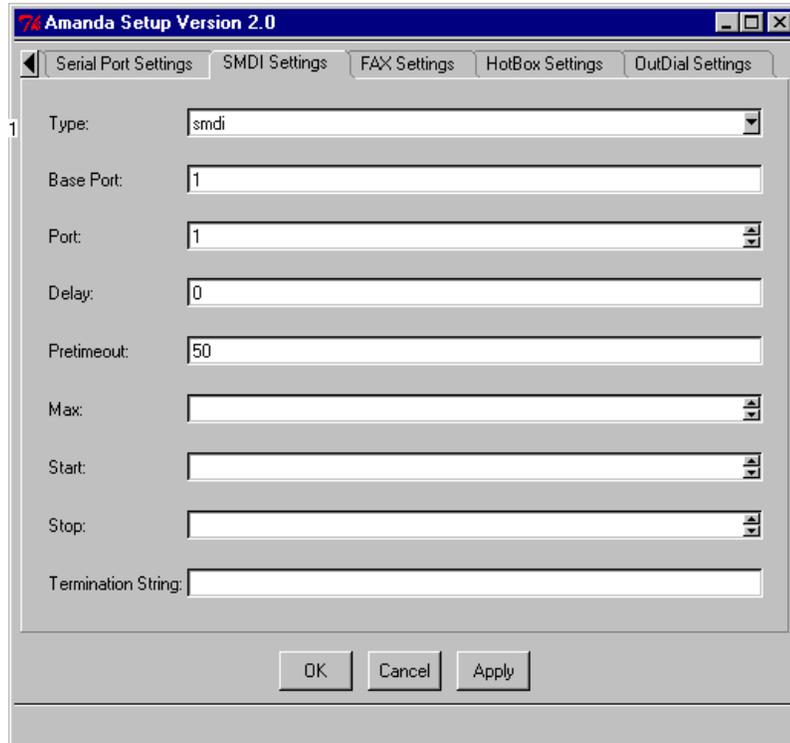


4. Select a serial port that has not yet been assigned.

To prevent confusion, you can use Serial Port 1 for COM port 1 (COM1), Serial Port 2 for COM port 2 (COM2), etc., but this is not necessary. The serial port is a logical port as understood by the Amanda system. The COM port is the physical port assigned to that logical port. For example, you can use define Serial Port 4 as COM port 1.

Remember the number of your serial port because you use it in step 5c.

- a. Use the spin buttons to select settings for the correct COM Port, Baud Rate (really bps—bits per second), Data Bits, and Stop Bits for serial integration.
 - b. Select a parity type from the Parity drop-down list box.
5. Scroll the tab bar and select the SMDI Settings tab.



You can press the Tab key to move from setting to setting.

- a. Select smdi from the Type drop-down list box.
- b. If the first port on the telephone switching system is not identified as the logical port 1, select the appropriate port number in the Base Port text box.

For example, some telephone switching systems use the port's extension or another logical terminal number to identify the port. The first port may be extension 241, with the second port 242, etc. **These numbers must be consecutive.** For example, if the first or base port is 241, you use select 241 in the Base Port text box.

- c. In the Port text box, select the number of the logical serial port you are using for SMDI.

This is the number from step 4.

- d. In the Delay text box, use the default setting, which is 0.
- e. In the Pretimeout text box, select the maximum number of seconds that an SMDI packet can precede the forwarded call. The default is 50.

NOTE: The Max, Start, Stop, and Terminal String settings do not apply to telephone switching systems that use Bellcore Standard SMDI. The post-timeout setting is specified as Integration First Digit Timeout from the Telephone Switch Integration tab as it applies to inband as well as serial integrations.

6. Scroll the tab bar and select the Telephone Switch Integration tab.

You must also modify your integration patterns to include the SMDI information shown below.

The patterns are created using the Setup utility, the Telephone Switch Integration tab, and the Integration Patterns button for the correct PBX. You settings are stored in C:\AMANDA\PBX.DB\1001.PBX or 2001.PBX file.

For details about creating integration patterns, see “Adding Integration Patterns” on page 38.

- Enter the integration strings in the column for the extension plan your system uses.

See “Using Character Codes” on page 41 for more information about the codes such as rrr or rrrr.

4-digit Extension Plan	3-digit Extension Plan
Axxxxrrrr0000000	Axxxxrrr0000000
Bxxxxbbb00000000	Bxxxxbb00000000
Nxxxxrrrr0000000	Nxxxxrrr0000000
Axxxxrrrxxxxsss	Axxxxrrxxxxsss
Bxxxxbbbxxxxsss	Bxxxxbbxxxxsss
Nxxxxrrrxxxxsss	Nxxxxrrxxxxsss
Dxxxxxxxxxxxxeee	Dxxxxxxxxxxxxeee

- If you are using the JOVE utility, the integration timeout precedes each integration string as follows. This example is only for 4-digit station plans. The example uses 20 as the setting for the Integration First Digit Timeout spin box. (20 equals 20 tenths of seconds or a total of 2 seconds, causing Amanda to timeout after 2 seconds if the packet has not been received)

4-digit Station Plan

integration 20	'Axxxxrrrr0000000'
integration 20	'Bxxxxbbb00000000'
integration 20	'Nxxxxrrrr0000000'
integration 20	'Axxxxrrrxxxxsss'
integration 20	'Bxxxxbbbxxxxsss'
integration 20	'Nxxxxrrrxxxxsss'
integration 20	'Dxxxxxxxxxxxxeee'

NOTE: To modify the above for another digit plan, use the appropriate number of r's, b's, s's, e's, and x's.

To program the message waiting lights:

- Use the following in the Method field of the two notification records used for Light ON and Light OFF:

4-digit Station Plan

Light ON: @S(1,'OP:MWI 000%U!\D')

Light OFF: @S(1,'RMV:MWI 000%U!\D')

3-digit Station Plan

Light ON: @S(1,'OP:MWI 0000%U!\D')

Light OFF: @S(1,'RMV:MWI 0000%U!\D')

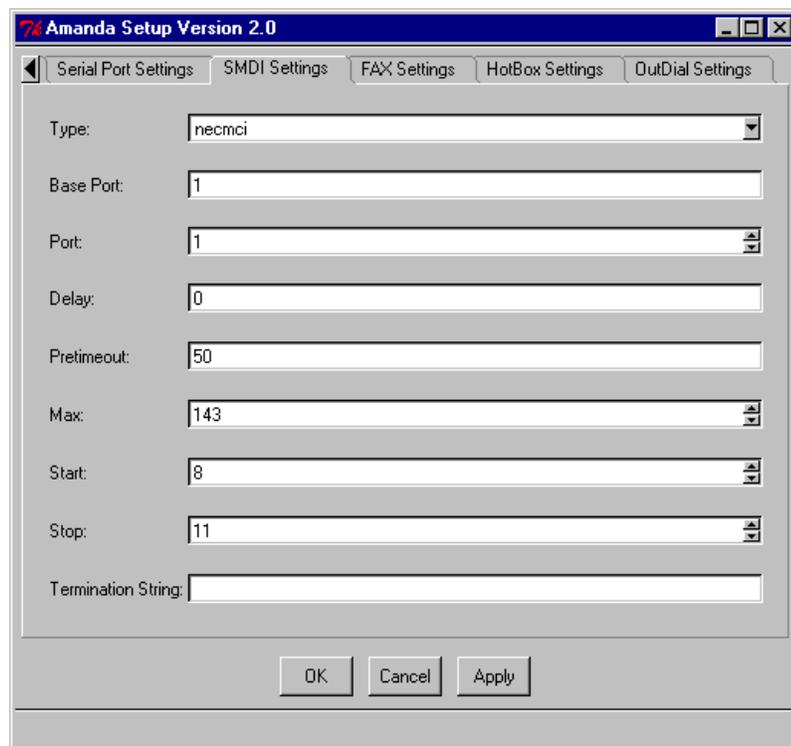
NOTE: The message codes above are for a 4-digit and 3-digit station plan. To modify to another digit plan, use the appropriate number of 0's. These examples use logical serial port 1; for other ports, the 1's would have to be replaced.

NEC 2000 and NEC 2400

This section covers serial integration for NEC 2000 and NEC 2400 systems.

To set configuration options for serial integration on NEC 2000 or NEC 2400:

1. Follow steps 1 through 4 in the Bellcore Standard SMDI procedure “To modify configuration options for use with Bellcore Standard SMDI:” in the “Bellcore Standard SMDI” section.
2. Scroll the tab bar and select the SMDI Settings tab.



You can press the Tab key to move from setting to setting.

- a. Select necmci from the Type drop-down list box.
- b. If the first port on the telephone switching system is not identified as the logical port 1, select the appropriate port number in the Base Port text box.

For example, some telephone switching systems use the port's extension or another logical terminal number to identify the port. The first port may be extension 241, with the second port 242, etc. **These numbers must be consecutive.** For example, if the first or base port is 241, you use select 241 in the Base Port text box.

- c. In the Port text box, select the number of the logical serial port you are using for SMDI.
This is the number from step 4 in “To modify configuration options for use with Bellcore Standard SMDI:”
- d. In the Delay text box, select the number of tenths of seconds that Amanda waits after the call is answered before looking for integration information. This allows more than one packet to be sent to a port per telephone call. Amanda uses the last (most recent) packet. The default is 0. The range is 0 to 255.
- e. In the Pretimeout text box, select the maximum number of seconds that an SMDI packet can precede the forwarded call. Start with 50, the default, but you may need to experiment to determine the best setting. On the NEC 2000, one solution provider reports that 15 is a good setting.
- f. In the Start spin box, select the number that indicates the position in the integration packet sent by the telephone switching system where the field containing the port number starts. Start counting positions in the packet with the number 1. The default is 8.
- g. In the Stop spin box, select the number that indicates the position in the integration packet sent by the telephone switching system where the field containing the port number ends. Start counting positions in the packet with the number 1. The default is 11.

NOTE: The Max and Termination String settings do not apply to NEC telephone switching systems.

3. Scroll the tab bar and select the Telephone Switch Integration tab.

You must also modify your integration patterns to match the data sent by the telephone switching system.

The patterns are created using the Setup utility, the Telephone Switch Integration tab, and the Integration Patterns button for the correct PBX. You settings are stored in C:\AMANDA\PBX.DB\1001.PBX or 2001.PBX file.

For details about creating integration patterns, see “Adding Integration Patterns” on page 38.

- Enter the integration strings in the column for the extension plan your system uses.

See “Using Character Codes” on page 41 for more information about the codes such as rrr or rrrr.

4-Digit Station Plan	3-Digit Station Plan
40xxxxssssxxxxrrrrxx	40xxxxssssxxxxrrrrxx
41xxxxssssxxxxbbbbxx	41xxxxssssxxxxbbbbxx
42xxxxssssxxxxrrrrxx	42xxxxssssxxxxrrrrxx
43xxxeexxxxxxxxxxxxx	43xxxeexxxxxxxxxxxxx
432xxtttxxxxxxxxxxxx	432xxtttxxxxxxxxxxxx

If you are using the JOVE utility, the integration timeout precedes each integration string as follows. This example is only for 4-digit station plans. The example uses 20 as the setting for the Integration First Digit Timeout spin box. (20 equals 20 tenths of seconds or a total of 2 seconds, causing Amanda to timeout after 2 seconds if the packet has not been received).

4-Digit Station Plan

integration 20	'40xxxxssssxxxxxxxxrtrxx'
integration 20	'41xxxxssssxxxxxxxxbbbxx'
integration 20	'42xxxxssssxxxxxxxxrtrxx'
integration 20	'43xxxxeeexxxxxxxxxxxxx'
integration 20	'432xxttttxxxxxxxxxxxx'

NOTE: To modify the above for another digit plan, use the appropriate number of r's, b's, s's, e's, and x's.

To program the message waiting lights:

- To program the message waiting lights for NEC 2000, use the following in the Method field of the two notification records used for Light ON and Light OFF:
 - Light ON: @S(1,'\002')S(1,'0!A1')S(1,'%U')S(1,'\003')
 - Light OFF: @S(1,'\002')S(1,'0!A5')S(1,'%U')S(1,'\003')
- To program the message waiting lights for NEC 2400 IMG, use the following in the Method field of the two notification records used for Light ON and Light OFF:
 - Light ON: @S(1,'\002')S(1,'0!B2')S(1,'%U')S(1,'000000001')S(1,'\003')
 - Light OFF: @S(1,'\002')S(1,'0!B6')S(1,'%U')S(1,'000000001')S(1,'\003')

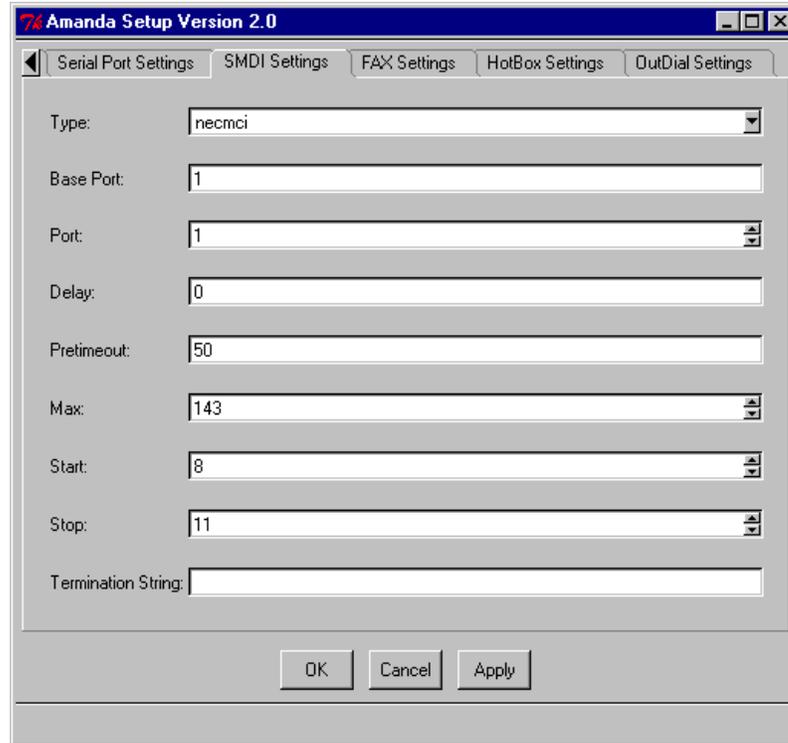
NOTE: These examples uses logical serial port 1; for other ports, the 1's would have to be replaced.

AT&T System 75 or Definity-G3

If you use AT&T System 75 or Definity-G3 (smdi_type s75), call The Amanda Company's customer support team for more information. Ask to be faxed Technical Note 14, "Serial Integration for System 75 and Definity-G3."

To set configuration options for use with System 75 and Definity-G3:

- Follow steps 1 through 4 in the Bellcore Standard SDMI procedure "To modify configuration options for use with Bellcore Standard SMDI:" in the "Bellcore Standard SMDI" section.
- Scroll the tab bar and select the SMDI Settings tab.



You can press the Tab key to move from setting to setting.

- a. Select s75 from the Type drop-down list box.
- b. If the first port on the telephone switching system is not identified as the logical port 1, select the appropriate port number in the Base Port text box.

For example, some telephone switching systems use the port's extension or another logical terminal number to identify the port. The first port may be extension 241, with the second port 242, etc. **These numbers must be consecutive.** For example, if the first or base port is 241, you use select 241 in the Base Port text box.

- c. In the Port text box, select the number of the logical serial port you are using for SMDI.

This is the number from step 4 in "To modify configuration options for use with Bellcore Standard SMDI:"

- d. In the Delay text box, select the number of tenths of seconds that Amanda waits after the call is answered before looking for integration information. This allows more than one packet to be sent to a port per telephone call. Amanda uses the last (most recent) packet. The default is 0. The range is 0 to 255.
- e. In the Pretimeout text box, select the maximum number of seconds that an SMDI packet can precede the forwarded call. Start with 50, the default, but you may need to experiment to determine the best setting. On the NEC 2000, one solution provider reports that 15 is a good setting.
- f. In the Start spin box, select 8.
- g. In the Stop spin box, select 11.

NOTE: The Max, Pretimeout, Start, Stop, and Termination String settings do not apply to AT&T System 75 and Definity-G3 telephone switching systems.

3. Scroll the tab bar and select the Telephone Switch Integration tab.

You must also modify your integration patterns to match the data sent by the telephone switching system.

The patterns are created using the Setup utility, the Telephone Switch Integration tab, and the Integration Patterns button for the correct PBX. Your settings are stored in C:\AMANDA\PBX.DB\1001.PBX or 2001.PBX file.

For details about creating integration patterns, see “Adding Integration Patterns” on page 38.

- Enter the integration strings in the column for the extension plan your system uses.

Verify that your integration lines are:

```
integration 10 'xxxxxxxxxxxxxxxx*xxxxxxxxxxxxxxxxrrr D'
integration 10 'xxxxxxxxxxxxxxxxsssxxxxxxxxxxxxxxxxrrr D'
integration 10 'xxxxxxxxxxxxxxxx*xxxxAxxxxxxxxxxxxxxxx C'
integration 10 'xxxxxxxxxxxxxxxxeeexxxxAxxxxxxxxxxxxxxxx C'
integration 10 'xxxxxxxxxxxxxxxx*xxxxxxxxxxxxxxxxbbb B'
integration 10 'xxxxxxxxxxxxxxxxsssxxxxxxxxxxxxxxxxbbb B'
integration 10 'xxxxxxxxxxxxxxxx*xxxxxxxxxxxxxxxxrrr S'
integration 10 'xxxxxxxxxxxxxxxxsssxxxxxxxxxxxxxxxxrrr S'
integration 10 'xxxxxxxxxxxxxxxx*xxxxxxxxxxxxxxxxrrr x'
integration 10 'xxxxxxxxxxxxxxxxsssxxxxxxxxxxxxxxxxrrr x'
```

NOTE: The integration lines above are for a three (3) digit station plan. When you have a mixed dialing plan, (for example, 3 and 4 digit extensions) you must have integration strings to handle *ALL* possible combinations.

To modify to another digit plan, use the appropriate number of r's, b's, s's, e's, and x's. The proper integration lines vary depending on your System 75 software release, digital telephone set model, and the data cartridge that you use in the digital set. If you experience problems with the integration strings defined above, run option 3 in the Setup utility (Integration Helper) to assist you, or contact customer support.

Also, you need to defined the telephones system dial code “What to dial when a port goes off-hook” with the code you defined above in FEATURE ACCESS CODE Call Pickup Access Code.

Finally, you must create mailboxes for each extension number where Amanda's ports are connected. The parameters must be defined as follows:

```
Extension: @G(990)
Do Not Disturb: OFF LOCK: ON
Store Messages? NO
Chains RNA: 990
Chains Busy: 990
```

Mailbox 990 is the default Company Greeting mailbox. If you have redefined the Company Greeting mailbox for any of the ports, use that mailbox instead of 990.

```
Light ON: *4%U
```

```
Light OFF: #4%U
```

NOTE: The examples use %U (for mailbox), but you may prefer %E (for Extension field) or %V (for Variable field). You can use %E when the Exten-

sion field contains only the extension number. (For example, if the Extension field contains an H for a blind transfer or starts with a @, %E is unusable.) You can use %U only if the mailbox is the same as the extension number. If you use %V, the Variable field in the notification record must contain the extension number.

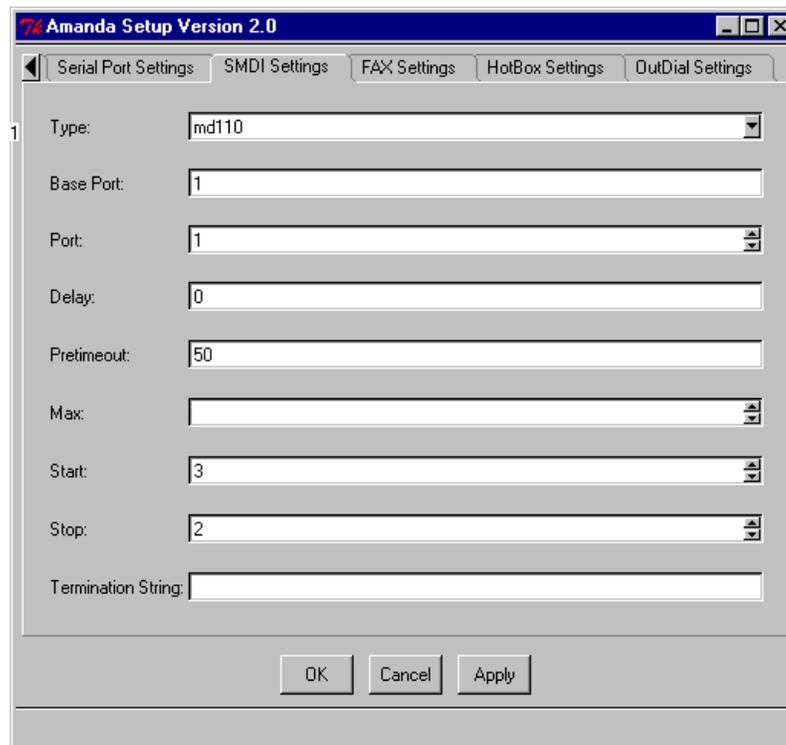
The *4 and #4 are the AT&T default values, often left as the standard, but fully configurable. Watch out for dialplan conflicts if you change them because the conflicts can slow down system operation if a needed wait for dial timeout (that is, a four-digit speedial code) has the same first few digits as the message waiting light feature.

Ericsson MD-110

This section covers serial integration for the Ericsson MD-110 system.

To set configuration options for serial integration on Ericsson MD-110:

1. Follow steps 1 through 4 in the Bellcore Standard SDMI procedure “To modify configuration options for use with Bellcore Standard SMDI:” in the “Bellcore Standard SMDI” section.
2. Scroll the tab bar and select the SMDI Settings tab.



You can press the Tab key to move from setting to setting.

- a. Select md110 from the Type drop-down list box.
- b. If the first port on the telephone switching system is not identified as the logical port 1, select the appropriate port number in the Base Port text box.

For example, some telephone switching systems use the port's extension or another logical terminal number to identify the port. The first port may be exten-

sion 241, with the second port 242, etc. **These numbers must be consecutive.** For example, if the first or base port is 241, you use select 241 in the Base Port text box.

- c. In the Port text box, select the number of the logical serial port you are using for SMDI.

This is the number from step 4 in “To modify configuration options for use with Bellcore Standard SMDI:”

- d. In the Delay text box, select the number of tenths of seconds that Amanda waits after the call is answered before looking for integration information. This allows more than one packet to be sent to a port per telephone call. Amanda uses the last (most recent) packet. The default is 0. The range is 0 to 255.
- e. In the Pretimeout text box, select the maximum number of seconds that an SMDI packet can precede the forwarded call. Start with 50, the default, but you may need to experiment to determine the best setting. On the NEC 2000, one solution provider reports that 15 is a good setting.
- f. In the Start spin box, select the number of digits in your extension plan. For example, select 3 if you have a 3-digit extension plan.
- g. (Optional) In the Stop spin box, select the number of digits in your port number information that the telephone switching system will send. This number will usually be 2.

NOTE: The Max and Termination String settings do not apply to Ericsson MD-110 telephone switching systems.

3. Scroll the tab bar and select the Telephone Switch Integration tab.

You must also modify your integration patterns to include the SMDI information shown below.

The patterns are created using the Setup utility, the Telephone Switch Integration tab, and the Integration Patterns button for the correct PBX. You settings are stored in C:\AMANDA\PBX.DB\1001.PBX or 2001.PBX file.

For details about creating integration patterns, see “Adding Integration Patterns” on page 38.

- Enter the integration strings in the column for the extension plan your system uses.

See “Using Character Codes” on page 41 for more information about the codes such as rrr or rrrr.)

4-Digit Station Plan	3-Digit Station Plan
80rrrrxx	80rrrx
81eeexx	81eeex
82eeexx	82eeex
83sssrtrrx	83sssrtrrx
85rrrrxx	85rrrx
86rrrrxx	86rrrx
91sssrtrrx	91sssrtrrx
92sssbbrbxx	91sssbbrbxx

```

94rrrrxx          94rrrx
95bbbbxx          95bbbx

```

If you are using the JOVE utility, the integration timeout precedes each integration string as follows. This example is only for 4-digit station plans. The example uses 10 as the setting for the Integration First Digit Timeout spin box. (10 equals 10 tenths of seconds or a total of 1 second, causing Amanda to timeout after 1 second if the packet has not been received). 10 is used because it is the default for serial integration.

3-Digit Station Plan

```

integration 10    '80rrrx'
integration 10    '81eeex'
integration 10    '82eeex'
integration 10    '83ssrrrx'
integration 10    '85rrrx'
integration 10    '86rrrx'
integration 10    '91ssrrrx'
integration 10    '92ssbbbx'
integration 10    '94rrrx'
integration 10    '95bbbx'

```

NOTE: To modify the above for another digit plan, use the appropriate number of r's, b's, s's, e's, and x's.

To program the message waiting lights:

- To program the message waiting lights for Ericsson MD-110, use the following in the Method field of the two notification records used for Light ON and Light OFF:

```
Light ON:    @S(3,'\B06%E01\N')
```

```
Light OFF:   @S(3,'\B07%E01\N')
```

\B represents Ctrl+B, the start of transmission (STX) character. %E should be the same number of digits and smdi_start specifies.

NOTE: These examples uses logical serial port 3; for other ports, the 3's would have to be replaced.

Generic

This section covers a generic serial integration. It is designed for any telephone switching system using serial integration other than those that:

- Use Bellcore Standard SMDI
- Are NEC 2000 or NEC 2400 systems
- Are AT&T System 75 or Definity-G3 systems
- Are Ericsson MD-110 systems

To set configuration options for generic serial integration:

1. Follow steps 1 through 4 in the Bellcore Standard SDMI procedure “To modify configuration options for use with Bellcore Standard SMDI:” in the “Bellcore Standard SMDI” section.
2. Scroll the tab bar and select the SMDI Settings tab.

You can press the Tab key to move from setting to setting.

- a. Select generic from the Type drop-down list box.
- b. If the first port on the telephone switching system is not identified as the logical port 1, select the appropriate port number in the Base Port text box.

For example, some telephone switching systems use the port’s extension or another logical terminal number to identify the port. The first port may be extension 241, with the second port 242, etc. **These numbers must be consecutive.** For example, if the first or base port is 241, you use select 241 in the Base Port text box.

- c. In the Port text box, select the number of the logical serial port you are using for SMDI.

This is the number from step 4 in “To modify configuration options for use with Bellcore Standard SMDI:”

- d. In the Delay text box, select the number of tenths of seconds that Amanda waits after the call is answered before looking for integration information. This allows more than one packet to be sent to a port per telephone call. Amanda uses the last (most recent) packet. The default is 0. The range is 0 to 255.
- e. In the Pretimeout text box, select the maximum number of seconds that an SMDI packet can precede the forwarded call. Start with 50, the default, but you may need to experiment to determine the best setting. On the NEC 2000, one solution provider reports that 15 is a good setting.
- f. In the Start spin box, select the number that indicates the position in the integration packet sent by the telephone switching system where the field containing the port number starts. Start counting positions in the packet with the number 1. The default is 8.
- g. In the Stop spin box, select the number that indicates the position in the integration packet sent by the telephone switching system where the field containing the port number ends. Start counting positions in the packet with the number 1. The default is 11.

In the Max spin box, select the maximum number of characters expected/accepted per packet. The default is 143.

In the Terminal String text box, you must type the termination character set (if there is one). Leave this option empty if the packets are terminated only by receiving the maximum number of characters (set in the Max spin box).

3. Scroll the tab bar and select the Telephone Switch Integration tab.

You must also modify your integration patterns to include the SMDI information shown below.

The patterns are created using the Setup utility, the Telephone Switch Integration tab, and the Integration Patterns button for the correct PBX. You settings are stored in C:\AMANDA\PBX.DB\1001.PBX or 2001.PBX file.

For details about creating integration patterns, see “Adding Integration Patterns” on page 38.

In addition to the preceding procedure, you may need to write appropriate notification records to turn message lights on and off. Consult your PBX manual for this information.

Chapter 9: Miscellaneous

Configuring Types of Lines

Most people connect Amanda to standard analog lines known as loop start lines that indicate a new call by sending an AC voltage to the telephone ringer.

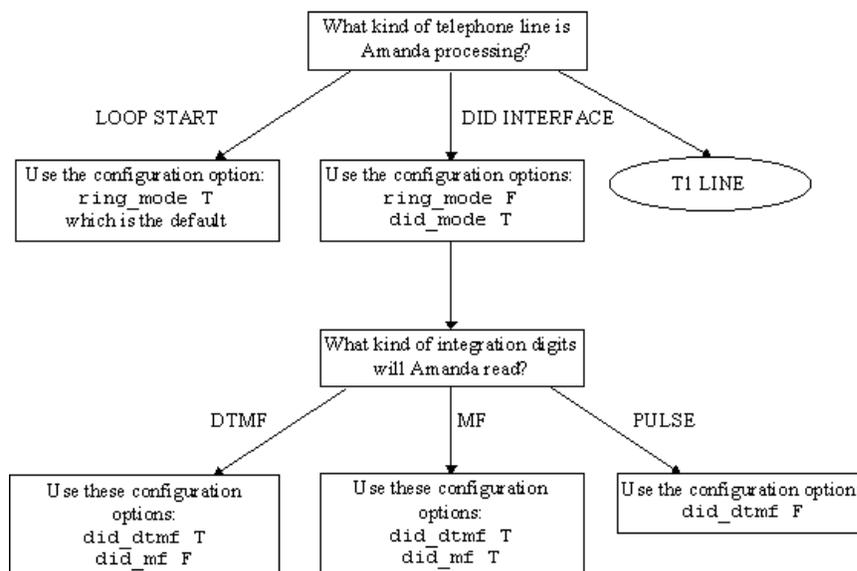
You can also connect Amanda to Direct Inward Dialing (DID) lines with an appropriate DID interface unit. Amanda assumes that you have a DID interface unit, such as Exacom DID-200 Series, that processes a hookflash as battery reversal.

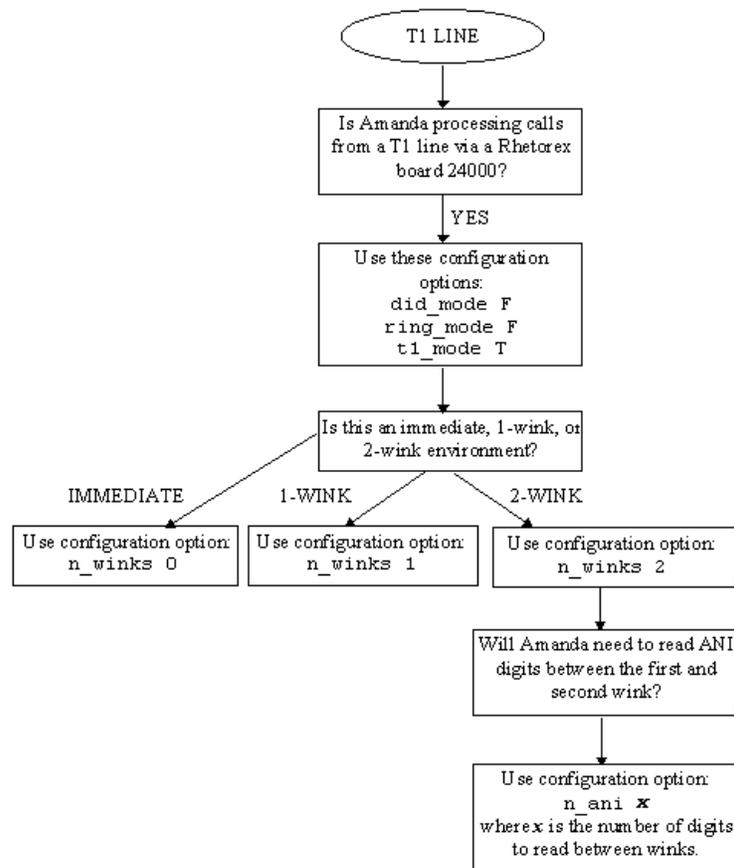
When you use DID, Amanda receives the last few digits of the dialed number. Those digits are used as (or modified by programming to be) the internal extension. Then the caller does not have to enter an extension.

Use the following Telephone Line Options Diagram to determine what configuration settings you need.

CAUTION: The parameter `ring_mode` is a global setting. If any lines into Amanda are loopstart (such as those that perform notification records), `ring_mode` must be true.

Telephone Line Options Diagrams





These parameters are global settings parameters and are stored in the install.cfg file.

Sharing Amanda

Sometimes more than one company or department share an Amanda system. Specific ports are assigned to specific groups. For example, on a two-port system shared by two companies, one company receives calls on port 1 and another on port 2. This affects the configuration parameters that determine which mailbox is used for:

- The company or initial greeting that callers hear when they call one of the companies.
- The employee directory that contains the names of all the users as they appear in the Directory Name 1 and Directory Name 2 fields.
- The direct message mailbox that allows you to record a message for a mailbox without having to transfer to that extension. You hear either the mailbox's greeting or the name and extension recording (depending on the setting for the short_direct_send configuration parameter). For example, you can leave a message for someone that you know is out of the office or not to be disturbed.

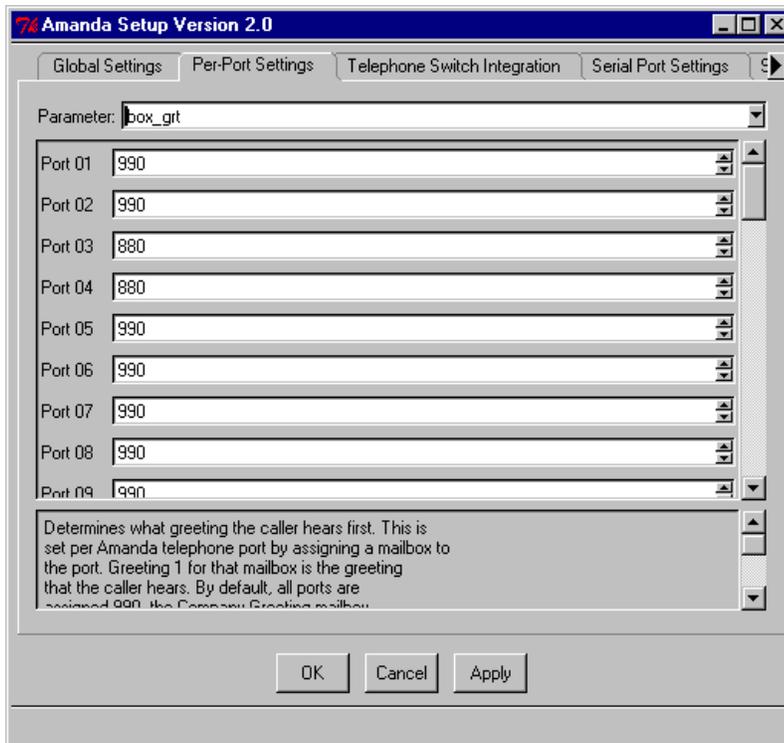
The following procedures are based on an four-port Amanda system shared by two companies.

To have different company greetings:

- In the Per Port Settings of the Setup utility, change the mailbox for the company greeting on a per port basis.

The Setup utility's basic operation is explained in "Logging On to Amanda" on page 5.

Suppose the first company uses ports 1 and 2, and the second company uses ports 3 and 4. Then `box_grt` for ports 1 and 2 might be set to mailbox 990, while `box_grt` for ports 3 and 4 might be set to mailbox 880.

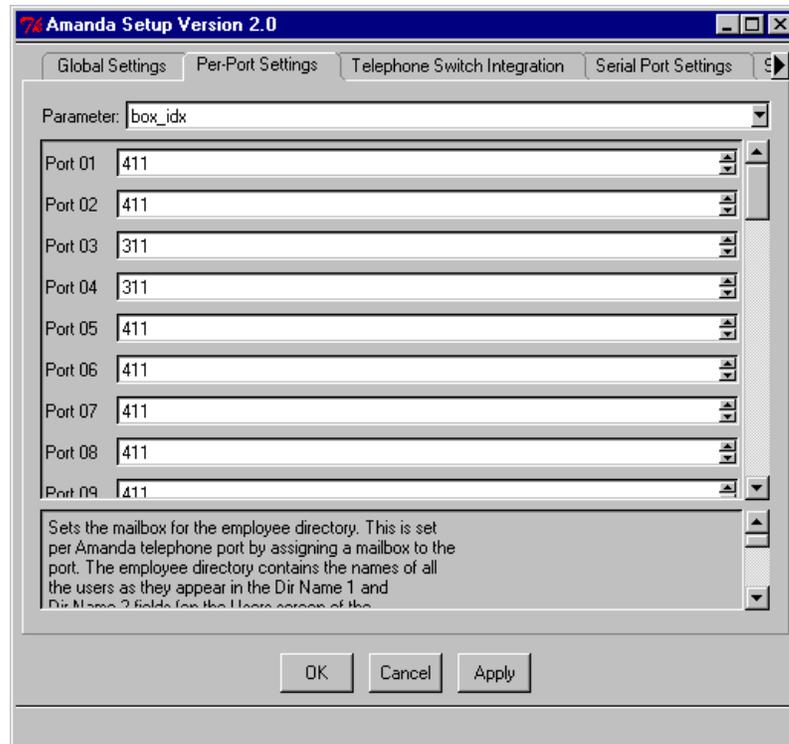


Per port settings are stored in the `install.cfg` file.

To have different employee directories:

- In the Per Port Settings of the Setup utility, change the mailbox for the employee directory on a per port basis.

For example, `box_idx` for ports 1 and 2 might be set to mailbox 411, while `box_grt` for ports 3 and 4 might be set to mailbox 311.



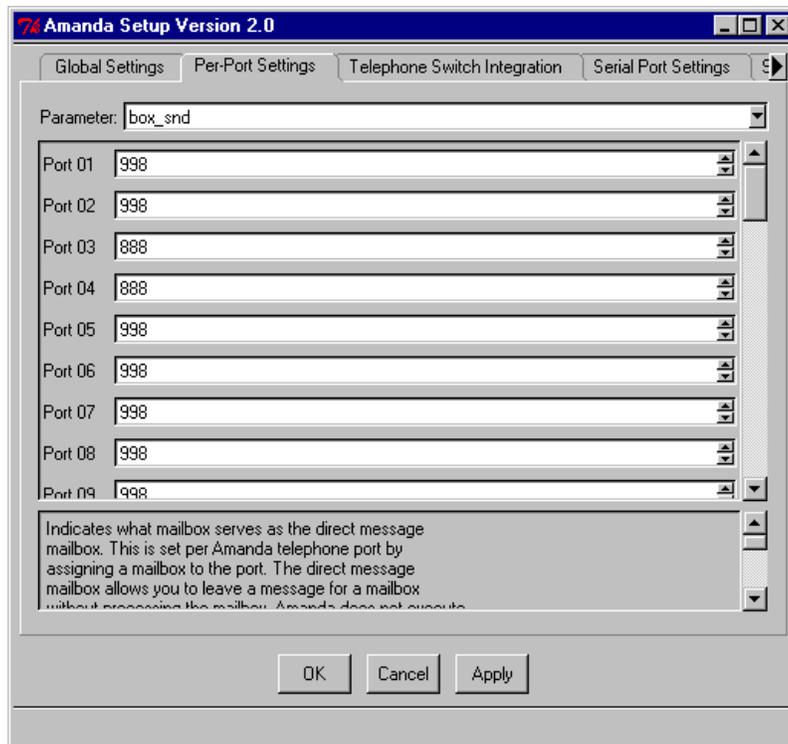
Per port settings are stored in the install.cfg file.

To use different mailboxes for direct messaging:

- In the Per Port Settings of the Setup utility, change the mailbox for the direct messaging on a per port basis.

For example, box_snd for ports 1 and 2 might be set to mailbox 998, while box_grt for ports 3 and 4 might be set to mailbox 888.

Per port settings are stored in the install.cfg file.



If two departments share an Amanda system, you might use the default mailboxes for one department and create another set for the other department. If you intend to use the defaults, don't overwrite these mailboxes when you create new mailboxes for employees. For more information about default mailboxes, see “Using Default and Recommended Mailboxes” on page 53.

Queuing Unanswered and Busy Calls

In certain environments (such as Automatic Call Distributors—ACDs), a combination of two global settings parameters allows you to queue all unanswered calls, not just busy calls.

You set both `treat_rna_as_busy` and `auto_queue` to True.

The other way to accomplish this, by putting the ring tones in the tone table with a BUSY code, does not allow you to set the number of rings that must occur before the busy signal is returned.

Chapter 10: Programming Amanda

Using Tokens

The Token Programming Language allows you to write programs for Amanda. These programs consist of tokens entered in Extension fields (defined per mailbox using Amanda Administrator's Mailbox window) and/or in Method fields (defined per mailbox using Amanda Administrator's Notify window). This section describes the language and introduces you to common programming terms. Understanding these terms can help you understand any programming language.

A token is a sequence of one or more characters that represents an action that Amanda can perform. The tokens that you use most often are simple and perform routine actions such as dialing an extension. However, a program can be much more complicated than that.

With the Token Programming Language, you can use tokens to do either of the following:

- Enhance Amanda's normal processing of the Extension and Method fields. Normally, the system uses Programmed Call Progress Monitoring (PCPM).

In this case, you add the tokens where appropriate within the field.

For example, 147H is a sequence of four tokens that tells Amanda to dial the DTMF digits 147 (for extension 147) and then hang up. Notice that the tokens are not separated by spaces (or any other characters). You write tokens one right after the other.

- Stop Amanda's normal processing of the fields and tell her what to do.

In this case, the first character in the field is @. Then you add the tokens that tell Amanda what to do.

For example,

```
@R(G1,%S1)
```

assigns the DTMF digits entered by the caller to a variable named %S1. This starts with an @ to indicate that you are NOT processing this Extension field normally.

Normal processing for the Extension field: Amanda plays "Please hold while I try that extension," puts the caller on transfer hold, then evaluates the tokens in the field. Unless told to do otherwise, the system listens for call progress tones and an answer.

The @ stops Amanda from performing the dial code that puts a caller on transfer hold (also known as the dl_dtwait dial code). As explained in "Using Setup to Define Codes, Integration Patterns, and Other Parameters" on page 7, you use the Setup utility (selection 1) to set or view the dial codes. The codes are stored in C:\AMANDA\PBX.DB\1001.PBX, which you can view or edit using the JOVE utility.

Normal processing of the Notify Method field: Amanda tries to access a port for an outbound notification call. The @ stops Amanda from going off-hook.

When most people think of a program, they think of a series of lines, each of which contains a single action or command. The Token Programming Language is similar, but each line become the contents of a different field, using the Extension field of a mailbox.

If the program contains only a few lines, sometimes you can use just one Extension or Method field for the entire program. However, when you need more fields, you use the Extension fields from additional mailboxes. Even if a Method field must be extended, you extend it to the Extension field in another mailbox.

You use additional fields for any of the following reasons:

- The logic of the program branches or repeats. You use a G() command or I() command to create the branch or loop. See “Flow of Control: Branching and Looping” on page 124 for more details.
- The length of the string of tokens exceeds 65 characters, so you are forced to continue in another field. You use a G() command to extend the token string to a new Extension field.

Mailbox Settings

If you are using a mailbox’s Extension field for token programming, you must use all of the following settings:

- Do Not Disturb must be off. Amanda ignores the Extension field altogether if Do Not Disturb is on.
- Call screening must be off.

Success and Failure

Amanda evaluates tokens from left to right. If Amanda performs a token successfully, the system goes on to the next token.

When all the tokens have been performed successfully in an Extension field, Amanda goes to the RNA Chain field. If the RNA field is blank, the system goes to the Done Chain field for the company greeting mailbox (usually mailbox 990).

When all the tokens have been performed successfully in the Notify Method field, Amanda goes to the next Notify Method field (if there is one). If there are no more Notify Method fields, Amanda goes to the Done Chain field for the current mailbox.

If the token is unrecognized (because of a syntax error or a typographical error) or fails, Amanda immediately goes to the Done Chain field without processing the rest of the tokens in the field. If the last successful token gives Amanda an invalid mailbox, the system processes the Done Chain field for the mailbox associated with the current port because the system cannot locate a Done Chain field for the invalid mailbox. (The mailbox associated with the port is usually 990, the Company Greeting mailbox.)

For a literal or system variable, there is no such thing as failure. The token always succeeds. Some tokens define almost any behavior as successful. For example, you can have Amanda spell an empty string. Amanda doesn’t say anything, but no failure occurs either.

Tracing Token Execution

Amanda's trace files can let you know where and how a token program is failing. This is an invaluable debugging tool.

Amanda creates trace files as the system runs, because the following trace command should be in the AUTOEXEC.BAT file.

```
amanda /t5 /s1300
```

Like the default trace command, this command creates C:\AMANDA\TRACE.OUT file and limits its size to the last 1.3MB of data. (A file this size will fit on a 3 1/2-inch floppy disk.) What is different about this command is that it writes to the trace file every 10 lines. In this way, if Amanda crashes while running your token program, no more than ten lines of trace information can be lost. You can use /t with a number less than 10 if you need to, but it will slow down the system.

You can also display trace information on-screen.

To display trace information:

- Press T.

Press O to stop the display. On-screen traces for Amanda voice server are not stored in a file. You can create trace files using Amanda Monitor. For details, see *Administering Amanda@Work.Group/Windows*. You can use Amanda Monitor to display on-screen traces as well.

Kinds of Tokens

Tokens fall into the following categories:

- Literals
- Variables
- Commands

Literals

A literal is an exact value such as the whole numbers 4 or 1144. Notice that you do not use commas within numbers. You use 1144—not 1,144.

The DTMF digits and most single-character tokens are literals. For example, the comma (,) that causes a pause is a literal.

Another type of literal is the string. In the Token Programming Language (as in most programming languages), a string is a sequences of characters. For example, JAMES DOLE is a 10-character string that starts with the letter J and ends with the letter E. To clearly show where a string begins and ends, programming languages require delimiters (characters that enclose the string, but are not part of it. In the Token Programming Language, you use single or double quotation marks as string delimiters. So JAMES DOLE becomes 'JAMES DOLE' or "JAMES DOLE".

"9," is a string that Amanda might dial for an outside line. It consists of the DTMF digit 9 followed by the comma for a pause.

A string that has no characters is called the empty string. It often occurs in programming and is written as ' ' or " ".

If you use one kind of quotation mark within a string, you should use the other kind as the string's delimiters: "Amanda's" or 'Do not use " (the double quotation character)'.

Any string can contain the following special characters:

\A	Attention, which is a bell sound (Ctrl+G)
\B	Start of transmission (STX; Ctrl+B)
\D	End of transmission (Ctrl+D)
\N	Newline (Ctrl+J)
\R	Return (Ctrl+M)
\T	TAB (Ctrl+I)
\\	Backslash, the actual "\" character
\octal_number	Allows any ASCII character to be specified. Replace <i>octal_number</i> with any number in octal, rather than decimal, format. The Windows calculator allows you convert decimal numbers to octal numbers with characters ranging from 0–8.

Variables

Each variable is the name of a storage location within the computer that can store a string or a whole number. After you store something in a variable, you can use that variable's name instead of typing the string or the number. This is useful because:

- Amanda's variables have simple names (no more than four characters) and save you typing time. (You are less likely to make a mistake typing a short variable name than a long string.)
- You can change the contents of the storage location and still use the same variable.
- Amanda can perform the same set of tokens over and over again with different values because the tokens use the variables rather than the values. For example, if you change the telephone number stored as a variable, Amanda dials the new number without you having to change any tokens.

The Token Programming Language has system, port, and global variables. Each of them starts with a percent sign (%).

System variables are controlled by Amanda. For example, %D contains the amount of available disk space, and %C contains the number of the port currently in use.

Port variables are controlled by you. Their names range from %S0 to %S19. Port variables provide 20 locations in which to store information on a per-port basis. The %S0 accessed by Amanda while using one port is not the same location as the %S0 accessed by Amanda while using another port.

Global variables are also controlled by you. Their names range from %G0 to %G9. These 10 locations are used by all the ports. The %G2 accessed by Amanda while using one port is exactly the same location as the %G2 accessed by Amanda while using another port.

Assignment

You control port and global variables. For example, you can assign numbers or strings to them and later change those numbers or strings. For example, you might assign the value of 65 to %G4 and the value "Amanda" to %S9. Assigning a value to a variable copies that value to the variable's storage location.

Initially, each port and global variable has the empty string as its value. Assignment is done in the Token Programming Language using the assignment command, which starts with the equal sign (=). When the variable contains a number, you can add to that number or subtract from it using the command that starts with a plus sign (+).

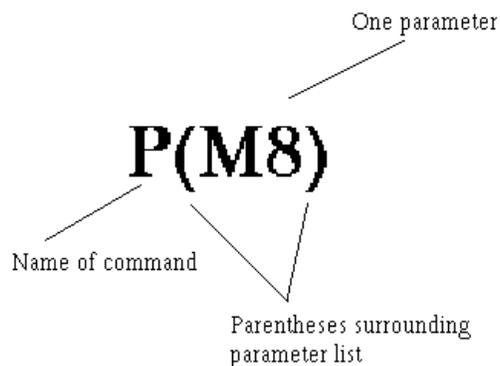
For example, `=(%S1,24)` puts the number 24 in the variable named %S1.
`+(%S1,15)` adds 15 to the 24 in %S1 and then stores the sum 39 in %S1.
`+(%S1,-10)` subtracts 10 from the 39 in %S1 and then stores the difference 29 in %S1.

Commands

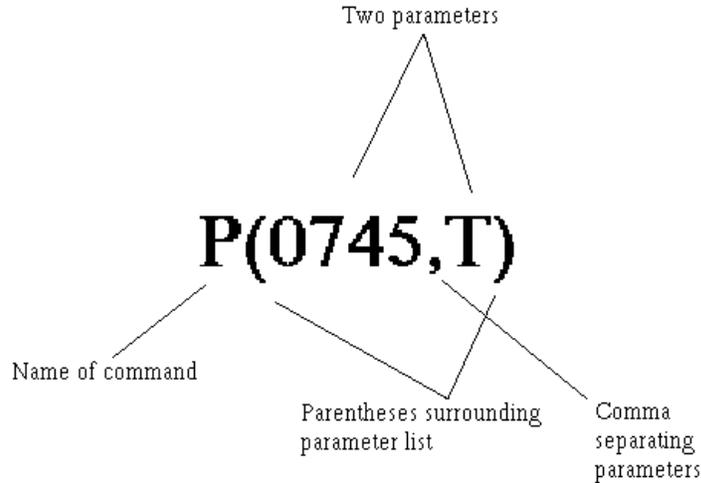
Commands are more complex than literals and variables. Commands perform actions. For example, a command may tell Amanda to play a particular message or go to another mailbox.

Each command has a name followed by a series of parts called parameters. Some parameters contain information that Amanda needs to perform the command. Others contain information that Amanda obtains for you as the system performs the command. Each parameter is a literal, variable, or another command.

The parameters are delimited (surrounded) by parentheses and separated by commas. For example, `P(M8)` tells Amanda to play message number 8. The command name is P, and its only parameter is M8, which is surrounded by parentheses.



The command `P(0745,T)` tells Amanda to say the number 0745 as a time. It also has the command name P, but it has two parameters: the number 0745 and the literal T.



When a command is referred to by name in this guide, the parentheses appear after the command's name. For example, the command named P is referred to as the P() command, which is read as "the P command."

Parameters

Parameters can be required or optional. The syntax places brackets [...] around optional parameters.

Parameters can also be for input or for output. Input parameters provide the information that Amanda needs in order to perform the action that you requested. For example, Amanda might need the name of the file in which to store a fax or the telephone number for a pager. You supply the input parameters and make sure that the information in them is correct. Input parameters can be literals, variables, or other commands.

Output parameters are parameters that store information you asked Amanda for. Output parameters are always variables because Amanda must store the information you requested in a storage location. Usually one command asks for the information, Amanda stores the information in a variable, and another command uses that variable. For example, you might use the V() command to retrieve a telephone number from a file. If the output parameter for the telephone number is %S5, Amanda stores the telephone number in the variable %S5. Then you use %S5 in a T() command to send a fax using that telephone number.

The syntax in the guide does not indicate which parameters are input and which are output. This is clear from the descriptions of the command and parameters.

When a string is used as a parameter, you don't always need the quotation marks, because the commas and parentheses serve as delimiters. You must use the quotation marks when a variable is part (but not all) of the string. For example, if %S0 is MARY and %S5 is HU, the string "MARY HU" can be used as a parameter with or without quotation marks, but the strings "%S0 HU", "%S0 %S5", and "%S0 %S5" must have quotation marks. Most programming languages do not allow you to put variables within strings. The Token Programming Language allows this, but it only checks for variables within a string if you delimit that string with quotation marks. You cannot use a number from 0 to 9 after %S1 in a string because Amanda assumes that you meant the variable %S10 or %S11, etc.

Most system variables do not have parameters. However, a couple of system variables have parameters that affect the contents of that system variable. For example, to use %I, the system variable that retrieves data from specific fields of specific messages, you use parameters to indicate which field, message number, and mailbox you want the data from.

Syntax

The exact sequence of characters for each token is defined by its syntax, so you have to learn to read syntax. The following table shows the conventions used in this guide. They are similar to the syntax conventions used for other programming languages.

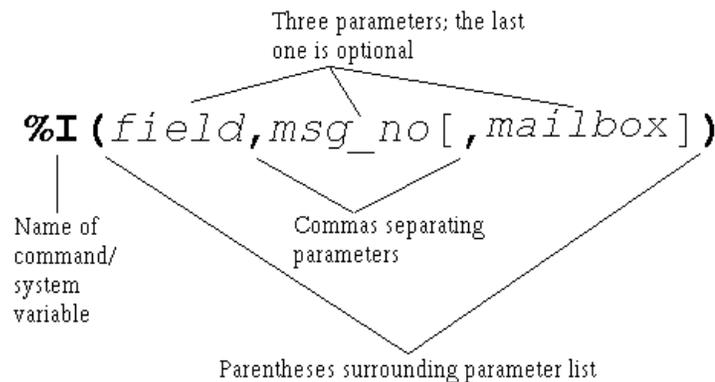
Syntax Convention	Meaning
bold	Bold is used for characters that must be used by you exactly as they appear—if you use them at all.
<i>italics</i>	Italics are used for characters that you must replace with real strings, numbers, variables, or other commands.
[]	The syntax inside the brackets is optional. If you don't use this syntax, its default is used.
{ }	The syntax inside braces can be repeated. The description tells you how many times they can be repeated.
	The vertical bar separates choices. For example, [V P] means that you can use V or P but not both. There is also a () token. However, this is bold in the syntax because it is required.

For example, the following is the syntax for %I:

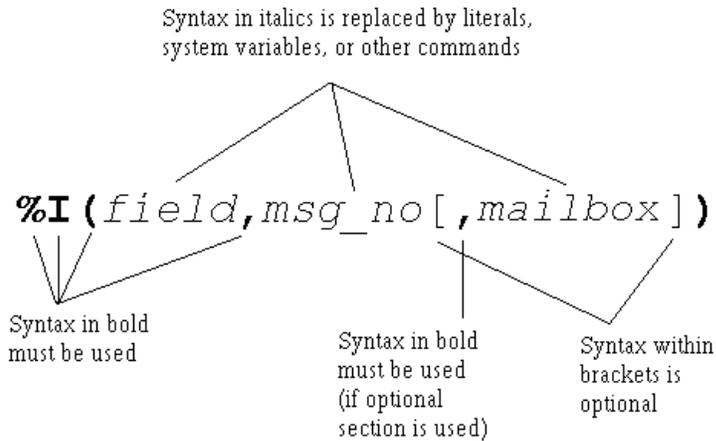
Syntax:

```
%I(field,msg_no[,mailbox])
```

%I() has three parameters: field, msg_no and mailbox.



Because the %I and parentheses are bold, you know that you have to include them in the command. The commas are bold, but the one in front of mailbox is inside brackets [...], which surround optional parts of the syntax. If you use the bracketed part of the syntax, you must use the comma.



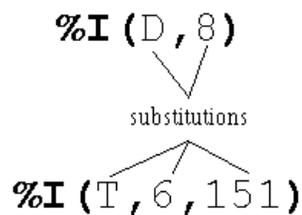
Because *field* is italicized, you know that it is a place holder for information that you must provide. *Field* can be any one of the following fields associated with messages:

- D for the Date field
- T for the Time field
- F for the From field

Because *msg_no* is also italicized, you know that it is a place holder for information that you must provide. For example, to find out the date for message number 8, you replace *msg_no* with the number 8. Because *mailbox* is inside brackets, you replace it only if you use that part of the syntax. For example, you may want to delete a message belonging to mailbox 151.

Whenever a parameter is optional, such as *mailbox*, it has a default. A default is the value that is used for the parameter whenever the parameter is missing. The default for mailbox is the current mailbox.

Using the syntax, you can create any number of %I() commands. For example, %I(D,8) provides the date for message 8 for the current mailbox, and %I(T,6,151) provides the time for message 6 for mailbox 151.



Both the Extension and Notify Method fields can contain up to 65 characters. If you need more than 65 characters for your program, you use:

- A command that reads additional tokens from a file
- The G() command to tell Amanda to go to the Extension field for another mailbox and process the tokens the system finds there

Files and Directories

This section points out what you need to know about files and file names when using the Token Programming Language. It assumes that you already know the following and other facts about files and directories:

- DOS files are stored in directories.
- The complete name for a file starts with the root directory (usually C:), lists the subdirectories leading to the file, and ends with the name of the file, each of which is separated by a backslash (\).

When you use a DOS file name as a parameter, you must replace each backslash (\) found in the name with either two backslashes (\\) or one forward slash (/). For example, C:\AMANDA\FOOBAR.TXT must become either C:\\AMANDA\\FOOBAR.TXT or C:/AMANDA/FOOBAR.TXT.

You can use variable names as parts of the file name. For example, if %S1 is C:, and %S2 is Amanda, you can use "%S1\\%S2\\FOOBAR.TXT".

Amanda can read text files (also called ASCII files) as well as files in dBase format. The former have file names that usually end with .TXT, and the latter have file names that end with .DBF. Amanda can read from, write to, and search files that contain database records. A record is a way to group pieces of information. For example, your name and address is a record in a database for any company that sends you supplies. The individual parts of your name and address are fields of that record. In a database, another name for a record is a row, and another name for a field is a column.

Sample Address Record:

First Name: MARY Last Name: HU

Street Address: 28291 HOOVER ST.

City: WINTER FALLS State: MI

Zip: 48444

Text files that contain database records should have commas separating each field of each record and a carriage return/linefeed separating one record from another. (A carriage return/linefeed is the pair of ASCII characters placed in a file when you press Enter on your keyboard.)

Sample Address Record as a line in a text file:

MARY,HU,28291 HOOVER ST.,WINTER FALLS,MI,48444

When Amanda reads records from a text file, you tell her the number of the fields you want to read or change the data in. The fields are numbered starting with 1. In our example, First Name is 1, and Last Name is 2.

dBase files are created using dBase, a database software product. For dBase files, you tell Amanda the name of the field instead of its number. When Amanda reads data from a dBase file, the system deletes any spaces at the end of the data as the system stores the data into a variable. For example, if the field contains "MARY", Amanda reads only "MARY".

Flow of Control: Branching and Looping

When programming Amanda, you often type the tokens for a program in more than one field. This is not because you have exceeded the 65-character limit for the Extension or Notify Method field, but because you want to control the flow of token processing. For example, the only way to have Amanda perform different actions based on the value of a variable, is to put the tokens for one set of actions in another Extension field.

The commands that control the flow of tokens are:

- The I() command which compares two values. (Notice that this is not the same as the %I() command/system variable discussed earlier in this chapter.) This command is similar to the If command or If statement in other programming languages. It is used to branch in either of two directions, depending on whether the comparison is true or false. If the comparison is true, Amanda goes to another mailbox's Extension field and processes the tokens there. If the comparison is false (for example, %S1 is not equal to the empty string), Amanda continues processing tokens.

For example, I(%S1,=",",101) can be read as "If the variable %S1 equals the empty string, go to mailbox 101. If not, go to the next token in this mailbox."

I(%G0,>,5,2000) can be read as "If the variable %G0 is greater than 5, go to mailbox 2000. If not, go to the next token in this mailbox."

- The G() command which tells Amanda to go to another mailbox's Extension field right now. (Notice that this is not the same as the %G0 through %G9 global variables.) There is no comparison made—just an immediate branch to a new mailbox.

For example, G(2000) can be read as "Go immediately to mailbox 2000."

A loop is the name given to a set of tokens that are repeated. For example, if the last token in the Extension field for mailbox 151 is G(151), Amanda returns to the beginning of the Extension field for mailbox 151. This forms a loop. It forms an infinite loop unless Amanda can branch to another mailbox's Extension field before performing the G() command. Sometimes you want an infinite loop, but usually an I() command appears within the loop (somewhere between the beginning of the loop and the G() command) and allows Amanda a way out of the loop.

For example, if you want Amanda to process the tokens for 151 exactly three times, you use a variable as a counter. You add 1 to the variable every time through the loop and branch when the I() command determines that the variable is equal to 3.

If you want Amanda to process the tokens for 151 until a certain value is entered by the caller, you store the caller's input in a variable and use the I() command to branch when the variable finally contains the value you are waiting for.

The examples in this section shows a loop in which Amanda repeats the tokens in one Extension field over and over—until stopped. You can make more complicated loops. For example, you can use the G() command to go from mailbox 151 to mailbox 152 to

mailbox 153, before returning to mailbox 151. This is still a loop because eventually Amanda returns to mailbox 151. It is just a longer, more complicated loop than the earlier examples.

T1 Lines

If you are using a T1 line, the only tokens you can use are:

- Any DTMF digit (0–9, A, B, C, D, #, *)
- Any system, port, or global variable (any token that starts with %)
- E
- F
- P
- W

Examples

This section provides practical examples using some of the available tokens.

Customizing the Employee Directory

The default operation of the employee directory minimizes the work you have to do as a system administrator. All you have to do is put values in the Dir Name 1 and Dir Name 2 fields for each employee's mailbox. A little extra work on your part can make it easier for the caller to use the employee directory.

Application

This example explains how to streamline the functionality of the employee directory (by default, mailbox 411) so that the caller does not have to dial the extension.

The default use of the employee directory:

1. A caller enters 411 for the employee directory.
2. The caller enters three digits representing the first three letters in either the first or last name of the person he wants to call.
3. Amanda reads the extension for each person whose name matches the digits.
4. The caller dials the correct extension.

The customized use of the employee directory:

1. A caller enters 411 for the employee directory.
2. The caller enters three digits representing the first three letters in either the first or last name of the person he wants to call.

3. If more than one employee matches the digits, Amanda asks the caller to choose.
For example, Amanda might say “For Steve Smith, press 1; for Stella Clark, press 2.”
4. Amanda dials the extension.

Translating to Amanda’s Tokens

This example shows the use of the G() command, which stops Amanda from processing the current mailbox and goes directly to the specified mailbox. It also illustrates the M() command that causes Amanda to play a greeting and wait for a single-digit number from the menu as a response.

To customize the employee directory:

1. Make a list of everyone’s first and last names (as they will appear in the Dir Name 1 and Dir Name 2 fields in their mailboxes).

Example:

Steve	Forest	mailbox 105
JoAnn	Johnson	mailbox 106
Bob	Knapp	mailbox 107

2. Determine what three digits would match each name:

Example:

Steve	Forest	mailbox 105	783	367
JoAnn	Johnson	mailbox 106	562	564
Bob	Knapp	mailbox 107	262	562

3. Create mailboxes for each of the sets of three-digits.

Example:

Create mailboxes 783, 367, 562, 564, and 262.

4. For each of these mailboxes, make sure that:

Do Not Disturb is locked OFF. (Do Not Disturb: OFF Lock: ON)

Call screening is locked OFF. (Screen Calls? OFF Lock: ON)

5. Fill in the Extension fields for mailboxes that only match one of the employees with **@G(employee_mailbox)**

Example:

Because 783 and 367 match Steve Forest, the Extension fields for mailbox 783 and mailbox 367 should be:

@G(105)

Because 564 matches JoAnn Johnson, the Extension field for mailbox 564 should be:

@G(106)

Because 262 matches Bob Knapp, the Extension field for mailbox 262 should be:

```
@G(107)
or
@P(G1)P(N,107)G(107)
```

6. For mailboxes that match more than one of the employees:
 - a. Record G1 (Greeting 1) as “For *first matching name*, press 1; for *second matching name*, press 2; ...” substituting the real names of employees for the italicized words.
 - b. In the Menus fields, put the mailbox for the first matching name in 1; the mailbox for the second in 2, and so forth.
 - c. In the Extension field, puts:

```
@M(G1,1,30)
```

This command causes Amanda to play Greeting 1 and waits for the caller to enter a digit indicating a choice from the menu. If the caller does not enter a digit within 30 seconds, Greeting 1 repeats.

Example:

Because 562 matches both JoAnn Johnson and Bob Knapp, the Menus for mailbox 562 would be:

```
1 106
2 107
```

The greeting would be:

“For JoAnn Johnson, press 1; for Bob Knapp, press 2.”

TIPS: To make this better yet, use:

```
@P(G1)P(N,employee_mailbox)G(employee_mailbox)
```

instead of:

```
@G(employee_mailbox)
```

Record a Greeting 1 for each of the new mailboxes that says “You are being transferred to” after which Amanda plays the Name and Extension recording for the employee’s mailbox. For mailbox 564 in the example, this would look like:

```
@P(G1)P(N,106)G(106)
```

The P() command plays greetings and so forth. In this case, the first P() command plays Greeting 1; the second plays the Name and Extension recording.

If the matching digits conflict with existing mailboxes (for example, 564 matches JoAnn Johnson, but it is already the mailbox for another employee), use 99564 or some other variation that does not conflict with employee mailboxes.

When more than one employee matches the digits that the caller enters, you can add 9 to the menu (with mailbox 411) and append the greeting to end with: “...press 9 to return to the employee directory.” Then, if the caller doesn’t want any of the people mentioned in the greeting, he can try another name.

Token Reference

This section contains two tables, each of which lists all of the tokens in the Token Programming Language:

- A **quick token reference** table, which lists each token by its function or purpose. The functions are in alphabetical order so that you can easily find all the tokens that perform similar functions. For example, the J() and T() commands both deal with faxes so they are grouped under Fax. This table provides only the syntax for each token. For a full description of the token, you must look in the alphabetical reference.
- An **alphabetical token reference** table, which lists the tokens in alphabetical order based on the first letter in the token's name. For example, %I and I are found under I. Tokens whose names do not contain a letter are listed in ASCII order before the letters. This table provides complete descriptions and examples of each token.

Quick Token Reference

Function/Purpose of Token	Syntax
absolute value	P [<i>repetition</i>](<i>number</i> , N [, <i>hangup</i>])
Add	+ (<i>variable</i> [, <i>value</i>])
ANI (Automatic Number Identification)	%H
Append, file	(<i>file</i>)
Assignment	= (<i>variable</i> , <i>value</i> [, <i>start</i> , <i>end</i>])
Boards, serial numbers	%B1 %B2 %B3 %B4 %B5 %B6
Caller hang-up	H (<i>mailbox</i>)
Caller ID	%H
Comment	%F (<i>field</i> [, <i>mailbox</i>])
Condition	I (<i>value</i> , <i>operator</i> , <i>value</i> , <i>mailbox</i>)
Conference call	<i>ext_no</i> KM
Creating message notification file	X [(<i>file</i>)]
Currency	P [<i>repetition</i>](<i>amount</i> , <i>currency</i> [, <i>hangup</i>])
Current connect time	%T
Current date in American format	%Y
Current port number	%C
Current time	%Z
Current mailbox	P [<i>repetition</i>] (U [, <i>mailbox</i> [, <i>hangup</i>]])
	%U

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax																
Current mailbox's Extension field	%E																
Date	%I (<i>field</i> , <i>msg_no</i> [, <i>mailbox</i>])																
	P [<i>repetition</i>](<i>date</i> , D [, <i>hangup</i>])																
	%Y																
Days of week	%W																
Deleting file	Y [(<i>file</i>)]																
Deleting, message	KD (<i>msg_no</i> [, <i>mailbox</i>])																
Dial (pulse dial)	~																
Dial codes	F																
dial tone	%X																
dial tone, wait for	W (<i>n</i> , T [, <i>mailbox</i>])																
Directory Name field	%F (<i>field</i> [, <i>mailbox</i>])																
Disk space	%D																
	P [<i>repetition</i>](D)																
Dollars	P [<i>repetition</i>](<i>amount</i> , <i>currency</i> [, <i>hangup</i>])																
DTMF digits	P [<i>repetition</i>](<i>DTMF</i>)																
	P [<i>repetition</i>](R)																
	<table style="border: none; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;">0</td> <td style="padding: 0 10px;">1</td> <td style="padding: 0 10px;">2</td> <td style="padding: 0 10px;">3</td> </tr> <tr> <td style="padding: 0 10px;">4</td> <td style="padding: 0 10px;">5</td> <td style="padding: 0 10px;">6</td> <td style="padding: 0 10px;">7</td> </tr> <tr> <td style="padding: 0 10px;">8</td> <td style="padding: 0 10px;">9</td> <td style="padding: 0 10px;">A</td> <td style="padding: 0 10px;">B</td> </tr> <tr> <td style="padding: 0 10px;">C</td> <td style="padding: 0 10px;">D</td> <td style="padding: 0 10px;">*</td> <td style="padding: 0 10px;">#</td> </tr> </table>	0	1	2	3	4	5	6	7	8	9	A	B	C	D	*	#
	0	1	2	3													
4	5	6	7														
8	9	A	B														
C	D	*	#														
DTMF for relay paging	P [<i>repetition</i>](R)																
	%R																
DTMF, save caller's entry	R (<i>greeting</i> [# <i>mailbox</i>], <i>variable</i> [, <i>timeout</i> [, <i>timeout2</i>])																
Earth recall	E																
Exit for caller hang up	H (<i>mailbox</i>)																
Exit for mailbox	[<i>ext_no</i>] H																
Extension field	<i>ext_no</i>																
	@																
	%E																
*Extensions, partially supervised transfer	U - <i>ext_no</i>																

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax
Fax, incremental	<(phone_no)
	>(file)
Fax, initialization	%A
Fax, messages	KQ(phone_no[,mailbox])
Fax, receive	J(file_or_box,phone_no[,tokens])
Fax, send	T(file,phone_no[,tokens])
Fields, process extension or Notify field as tokens	@
Fields, returns number of characters in a string	LEN[string]
Fields, values in mailbox record	%F(field [,mailbox])
Fields, Variable field in notification record	%V
Fields, Extension	%E
Fields, information	%I(field,msg_no[,mailbox])
Files, append	(file)
Files, as indicators	X[(file)]
	Y[(file)]
	Z[(file)]
Files, delete record	KV(file,field,value)
Files, from recordings	KR(file_or_box[,recording_info])
Files, import	{file}
Files, read	{file}
	V(file,field,value{,field,variable}[,n])
	[(file)
	N(file,field,value{,field,variable})
Files, search	?(line,file,mailbox)
Files, voice	P[repetition](X,file[,hangup])
Files, write] (file)
	N(file,field,value{,field,variable})
Francs	P[repetition](amount,currency[,hangup])

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax
Free disk space	P [<i>repetition</i>] (D)
	%D
Frequency	KB (<i>frequency,msecs</i>)
From	%I (<i>field,msg_no[,mailbox]</i>)
Goto	G (<i>mailbox</i>)
Greeting	P [<i>repetition</i>](<i>greeting[,mailbox[,hangup]]</i>)
Hang-up	[<i>ext_no</i>] H
	O (<i>time</i>)
Hang-up, cleanup	H (<i>mailbox</i>)
Hang-up, partially supervised	U - <i>ext_no</i>
Hookflash	E
	F
	O (<i>time</i>)
If	I (<i>value,operator,value,mailbox</i>)
Import, file	{ <i>file</i> }
Information mailboxes	M (<i>greeting[#mailbox],repetition,delay</i>)
IVR	%I (<i>field,msg_no[,mailbox]</i>)
Languages, change	L (<i>file</i>)
Length	LEN [<i>string</i>]
Letters and spaces	P [<i>repetition</i>](A , <i>string[,hangup]</i>)
LIGHT.ON See also message waiting indicators.	X [(<i>file</i>)]
	Y [(<i>file</i>)]
	Z [(<i>file</i>)]
Menu	M (<i>greeting[#mailbox],repetition,delay</i>)
Messages	%I (<i>field,msg_no[,mailbox]</i>)
Messages, delete	KD (<i>msg_no[,mailbox]</i>)
Messages, forwarding to Internet e-mail address	KG (<i>address,subject,msg_no[,msg_disp[,mailbox[,sound_type]]]</i>)
Messages, from recordings	KR (<i>file_or_box[,recording_info]</i>)
Messages, notifying Internet e-mail address about voice and fax messages	KG (<i>address,subject,msg_no</i>)

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax
Messages, number	%M[(mailbox)]
Messages, number of new	%N
Messages, playing by number	P[repetition](Mn[,mailbox[,hangup]])
Messages, playing new messages	P[repetition](MN[,mailbox[,hangup]])
Messages, record and send to mailing list	KJ(mailbox, list_number[,sender])
Messages, total	P[repetition](M[,mailbox[,hangup]])
Message count, total for mailbox	%M[(mailbox)]
	P[repetition] (M[,mailbox[,hangup]])
Message count, new for current user	%N
Message waiting indicators, creating	X[(file)]
Message waiting indicators, deleting	Y[(file)]
Message waiting indicators, testing for	Z[(file)]
Message waiting indicators, turning on and off	KA(on_off)
Money	P[repetition](amount, currency[,hangup])
Name and extension	P[repetition](U[,mailbox[,hangup]])
	P[repetition](N[,mailbox[,hangup]])
Notification record, Method field	@
Notification record, Variable field	P[repetition] (V)
	%V
Notify Internet e-mail address about voice and fax messages	KG(address, subject, msg_no)
Notify, relay paging	P[repetition] (R)
	%R
Number	P[repetition] (number, N[,hangup])
	P[repetition] (V)
On-hook	O(time)
Pager	P[repetition] (R)
	%R
	%V

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax
Pager, wait for	W (<i>n</i> , P [, <i>mailbox</i>]) KW ((<i>rings</i> [, P V]))
Partial supervised transfer	U - <i>ext_no</i>
Pauses	-
	,
	W (<i>n</i>)
Pesos	P [<i>repetition</i>](<i>amount</i> , P [, <i>hangup</i>])
Playing, absolute value	P [<i>repetition</i>](<i>number</i> , N [, <i>hangup</i>])
Playing, currency	P [<i>repetition</i>](<i>amount</i> , <i>currency</i> [, <i>hangup</i>])
Playing, date	P [<i>repetition</i>](<i>date</i> , D [, <i>hangup</i>])
Playing, disk space	P [<i>repetition</i>](D)
Playing, DTMF digits	P [<i>repetition</i>](R)
	P [<i>repetition</i>](<i>DTMF</i>)
Playing, greeting	P [<i>repetition</i>](<i>greeting</i> [, <i>mailbox</i> [, <i>hangup</i>]])
Playing, menu	M (<i>greeting</i> [<i>#mailbox</i>] , <i>repetition</i> , <i>delay</i>)
Playing, messages	P [<i>repetition</i>](Mn [, <i>mailbox</i> [, <i>hangup</i>]])
	P [<i>repetition</i>](MN [, <i>mailbox</i> [, <i>hangup</i>]])
Playing, money	P [<i>repetition</i>](<i>amount</i> , <i>currency</i> [, <i>hangup</i>])
Playing, name and extension	P [<i>repetition</i>](N [, <i>mailbox</i> [, <i>hangup</i>]])
	P [<i>repetition</i>](U [, <i>mailbox</i> [, <i>hangup</i>]])
Playing, number	P [<i>repetition</i>](<i>number</i> , N [, <i>hangup</i>])
Playing, number of messages	P [<i>repetition</i>](M [, <i>mailbox</i> [, <i>hangup</i>]])
Playing, prompt	P [<i>repetition</i>](<i>prompt_no</i> , V [, <i>hangup</i>])
Playing, spelling	P [<i>repetition</i>](A , <i>string</i> [, <i>hangup</i>])
Playing, time	P [<i>repetition</i>](<i>time</i> , T [, <i>hangup</i>])
Playing, Variable field	P [<i>repetition</i>](V)
Playing, voice file	P [<i>repetition</i>](X , <i>file</i> [, <i>hangup</i>])
Ports	S (<i>port</i> , [<i>string</i> , [<i>variable</i>], [<i>termination</i>], [<i>length</i>], [<i>timeout</i>])
Ports, change volume	^(<i>volume_change</i>)
Port, current connect time	% T

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax
Port number, current	%C
Port, transfer code for current	%X
Previous mailbox	%P
Prompt	P (<i>repetition</i>) (<i>prompt_no</i> , V [<i>hangup</i>])
	L (<i>file</i>)
Pulse dial	~
Questions and answers	Q (<i>greeting</i> [<i>#mailbox</i>][E])
Read, file	{ <i>file</i> }
	N (<i>file,field,value</i> { <i>,field,variable</i> })
	V (<i>file,field,value</i> { <i>,field,variable</i> }[<i>,n</i>])
Recordings, stored as messages or files	KR (<i>file_or_box</i> [<i>,recording_info</i>])
Records, delete	KV (<i>file,field,value</i>)
Remote computers	S (<i>port</i> , [<i>string</i> , [<i>variable</i>], [<i>termination</i>], [<i>length</i>], [<i>timeout</i>])
Rings, wait for number of	W (<i>n,event</i> [<i>,mailbox</i>]) KW (<i>rings</i> [P V])
Rotary training	KT (Gn [<i>,digit</i>])
Search, file	?(<i>line,field,mailbox</i>)
	N (<i>file,field,value</i> { <i>,field,variable</i> })
	V (<i>file,field,value</i> { <i>,field,variable</i> }[<i>,n</i>])
	KV (<i>file,field,value</i>)
Search, string	KI (<i>target,source,variable</i>)
Security code	KC (<i>mailbox,variable</i>)
	KL (<i>mailbox,security_code</i>)
	KP (<i>mailbox,security_code</i>)
Serial port access	S (<i>port</i> , [<i>string</i> , [<i>variable</i>], [<i>termination</i>], [<i>length</i>], [<i>timeout</i>])
Set Name	%F (<i>field</i> [<i>,mailbox</i>])
Shutdown	KS (<i>errorlevel</i>)
Sound volume, change	^ (<i>volume_change</i>)

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax
Space	%D
	P[repetition](D)
Spell	P[repetition](A,string[,hangup])
String, search	KI(target,source,variable)
Strings, length	LEN[string]
Subtract	+(variable[,value])
Testing for message notification file	Z[(file)]
Time	%I(field,msg_no[,mailbox])
	P[repetition](time,T[,hangup])
Time, connect time	%T
Time, current	%Z
Timed break recall	~
Tokens, processing	@
Tones	0 1 2 3 4 5 6 7 8 9 A B C D * #
Total messages	P[repetition] (M[,mailbox[,hangup]])
Transfer code for current port	%X
Transfer, unsupervised (blind)	[ext_no]H
Transfer, supervised	ext_no
	ext_noKM
Transferring to specified mailbox	G(mailbox)
mailbox access	KC(mailbox,variable)
	KL(mailbox,security_code)
	KP(mailbox,security_code)
mailbox, current	%U
mailbox, Extension field of current	%E
mailbox, new message count	%N
mailbox, playing Name/Extension recording	P[repetition] (U[,mailbox[,hangup]])

Quick Token Reference (Continued)

Function/Purpose of Token	Syntax
mailbox, previous	%P
mailbox, total message count	%M[(<i>mailbox</i>)]
mailbox, value of field	%F(<i>field</i> [, <i>mailbox</i>])
Variable field	P[<i>repetition</i>](V)
	%V
Variables	[(<i>file</i>)
](<i>file</i>)
	(<i>file</i>)
	+(<i>variable</i> [, <i>value</i>])
	=(<i>variable</i> , <i>value</i> [, <i>start</i> , <i>end</i>])
	%G0 %G1 %G2 %G3 %G4 %G5 %G6 %G7 %G8 %G9
	%S0 %S1 %S2 %S3 %S4 %S5 %S6 %S7 %S8 %S9 %S10 %S11 %S12 %S13 %S14 %S15 %S16 %S17 %S18 %S19
Variables, shift	K<(x[, <i>value</i>])
Voice boards, serial numbers	%B1 %B2 %B3 %B4 %B5 %B6
Voice form	Q({ <i>greeting</i> [# <i>mailbox</i>][,E])
Voice, wait for	W(n,V[, <i>mailbox</i>]) KW[(<i>rings</i> [,P V])]
Volume change for port	^(<i>volume_change</i>)
Waiting, for a number of tenths of seconds	W(n)
Waiting, a number of rings for pager or voice	KW[(<i>rings</i> [,P V])]
Waiting, for dial tone, pager, voice	W(n, <i>event</i> [, <i>mailbox</i>])
Weekday	%W
Write, file](<i>file</i>)
	N(<i>file</i> , <i>field</i> , <i>value</i> { , <i>field</i> , <i>variable</i> })

Alphabetical Token Reference

Token Syntax	Description
-	Literal that pauses processing for .5 (one-half) second.
,	<p>Literal that pauses for 2 seconds. Used when dialing an extension or to introduce a pause before processing the next token.</p> <p>NOTE: Be careful not to confuse this comma with the separator found in commands and records.</p>
?(<i>line,file,mailbox</i>)	<p>Command that searches the specified file (line by line) for the specified line. The line must match an entire line within the file. If the line is found, processing continues at the specified mailbox. If the line is not found, processing continues with the next token.</p> <p><i>line</i> The string or variable to be matched as a line in the file. No line in the file should exceed 143 characters.</p> <p><i>file</i> A string or variable containing a valid DOS file name for the text file to be searched. Use the complete path to the file unless the file is in C:\AMANDA. There is no limit to the number of lines in the file.</p> <p><i>mailbox</i> A valid mailbox or a variable containing a mailbox.</p> <p>Example: ?(%S9,C:\AMANDA\FOOBAR.TXT,247) causes Amanda to search FOOBAR.TXT for a line that matches the characters in %S9. If a line is found, Amanda continues processing at mailbox 247.</p> <p>Failure: Invalid mailbox</p>
@	<p>Literal that causes Amanda to process the Extension or Notify Method field as a set of tokens instead of processing the field normally.</p> <p>Normal processing for the Extension field: Amanda plays “Please hold while I try that extension,” puts the caller on transfer hold, then evaluates the tokens in the field. The @ stops Amanda from performing the dial code that puts a caller on transfer hold (also known as the dl_dtwait dial code). As explained in “Using Setup to Define Codes, Integration Patterns, and Other Parameters” on page 7, you use the Setup utility (selection 1) to set or view the dial codes. The codes are stored in C:\AMANDA\PBX.DB\1001.PBX, which you can view or edit using the JOVE utility.</p> <p>Normal processing of the Notify Method field: Amanda tries to access a port for an outbound notification call. The @ stops Amanda from going off-hook.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
<p>[(<i>file</i>)</p>	<p>Command that reads the first line in the specified file as the first ten port variables (%S0-%S9). The 10 values in the file must be comma delimited. The first value is %S0, the second is %S1, etc. The quotation marks used to delimit strings do not appear in the file, but the commas that separate them from the other variables do. For example, empty strings take up no space in the file.</p> <p>This command is usually used with the]() command to keep track of what the port is doing. You read the variables using the [() command, update them, and then write them to the file once more using the]() command.</p> <p>Read with the [() command and write with the]() command within the same field to avoid potential simultaneous access errors caused by another port accessing the file.</p> <p>If the file does not exist, Amanda just goes on to the next token.</p> <p><i>file</i> A string or variable containing a valid DOS file name for the text file to be read. No line in the file should exceed 143 characters. There is no limit to the number of lines. When you specify a file name, its full path is required unless the file is stored in the directory for the current mailbox. For example, if you use [(file) with only a file name, and the mailbox number is 101, your file must be located in the C:\VMB.DB\1\101 directory or the file cannot be found.</p> <p>Example: <pre>[(C : \ \ AMANDA \ \ FOOBAR . TXT) places the following line in FOOBAR.TXT , , , , 10 , , , , 5 , 9 , 555</pre> In this case %S0, %S1, %S2, %S4, %S5, and %S6 were empty strings. To count the number of calls, etc. processed by a particular port (or all ports), read the variables, add 1 to the contents of the one that stores the count, and write the variables back to the file. <pre>[(C : \ \ AMANDA \ \ FOOBAR . TXT) + (%S4)] (C : \ \ AMANDA \ \ FOOBAR . TXT)</pre> If you are counting all ports, use the same file for all ports. If you are counting per port, use a different file for each port.</p> <p>Failure: Does not fail</p>
<p>\\</p>	<p>Backslash, the actual "\" character. Can be used in strings.</p> <p>Failure: Does not fail</p>
<p>\A</p>	<p>Attention, which is a bell sound (Ctrl+G). Can be used in strings.</p> <p>Failure: Does not fail</p>
<p>\B</p>	<p>Ctrl+B. Added for Ericsson MD-110 serial integration. For the MD-110, Ctrl+B is the Start of Transmission (STX) character. Can be used in strings.</p> <p>Example: <pre>@S (3 , " \B06%Emm\N")</pre> which controls message waiting indicators.</p> <p>Failure: Does not fail</p>
<p>\N</p>	<p>Newline (Ctrl+J). Can be used in strings.</p> <p>Failure: Does not fail</p>
<p>\R</p>	<p>Return (Ctrl+M). Can be used in strings.</p> <p>Failure: Does not fail</p>
<p>\T</p>	<p>TAB (Ctrl+I). Can be used in strings.</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
] (<i>file</i>)	<p>Command that writes the values of the first 10 port variables (%S0-%S9) to the specified file. The values are comma-separated and terminated by a carriage return/linefeed. Usually used in conjunction with the [() command which reads the %S variables.</p> <p><i>file</i> A string or variable containing a valid DOS file name for the text file to be written to. When you specify a file name, its full path is required unless the file is stored in the directory for the current mailbox. For example, if you use](file) with only a file name, and the mailbox number is 101, your file must be located in the C:\VMB.DB\1\101 directory or the file cannot be found.</p> <p>Example: See the [() command.</p> <p>Failure: The file is read-only Insufficient disk space to save file</p>
^(<i>volume_change</i>)	<p>Command that changes the volume of the current port.</p> <p><i>volume_change</i> Amount to increase or decrease the current volume. Use a positive number to increase the volume and a negative number to decrease the volume. Use the minus sign for negative numbers, but omit the plus sign for positive numbers. Amanda gives you a volume as close as possible to what you ask for.</p> <p>The volume on Brooktrout voice boards ranges from -8 (softest) to +8 (loudest). Initially, the volume is set to 0, but that is not necessarily its current value. If the value is +8 and you apply a change of -16, the volume's value goes to -8. If the value is 0 and you apply a change of -16, the value of the volume goes to -8 and an error appears in the trace file.</p> <p>If the number you specify takes the volume out of its range, the highest volume (8) or the lowest volume (-8) is used instead, depending on which is closer to your choice.</p> <p>Example: ^(8) raises the volume of the port to its loudest (if it was initially set to 0).</p> <p>Failure: Does not fail</p>
{ <i>file</i> }	<p>Command that reads Amanda tokens from an external file. This allows you to exceed the 65-character limit in the Extension and Notify Method fields. If the file does not exist, Amanda just goes on to the next token.</p> <p><i>file</i> A string or variable containing a valid DOS file name. Use the complete path to the file unless the file is in C:\AMANDA. The file must be a text file containing valid Amanda tokens. No line in the file should exceed 143 characters. There is no limit to the number of lines in the file.</p> <p>NOTE Since the entire file is read and since white space is ignored, you can make the file easier to read by putting one token per line. (White space is tabs, spaces, and carriage return/linefeeds.)</p> <p>Example: { C : \ \ AMANDA \ \ RELAY . TXT } causes Amanda to process the tokens in RELAY.TXT.</p> <p>Failure: Does not fail The failure of any token within the file causes the rest of the file to be ignored. Then Amanda executes the token after the { } token or the RNA chain if there is no token after the { } token.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
(<i>file</i>)	<p>Command that appends the first ten %S port variables (%S0-%S9) to the specified file. If the file does not exist, Amanda creates it. The values are comma-separated and terminated by a carriage return/linefeed.</p> <p><i>file</i> A string or variable containing a valid DOS file name for a text file. Use the complete path to the file unless the file is in C:\AMANDA.</p> <p>Example: (C:\AMANDA\PORTVARS.TXT) causes Amanda to add a line to PORTVARS.TXT. You can use this to add a line to PORTVARS.TXT every time the port you are tracing changes the value of a variable. Later you can review the file.</p> <p>Failure: The file is read-only Insufficient disk space to save file</p>
~	<p>Literal that pulse dials the digit 1 to effect a timed break recall.</p>
+ (<i>variable</i> [, <i>value</i>])	<p>Command that allows you to add a number to or subtract a number from the value stored in a variable. Usually used to set limits and control programming loops.</p> <p><i>variable</i> One of port or global variables.</p> <p><i>value</i> Optional. A number or variable. The default is 1.</p> <p>Example: + (%S7, -1) subtracts 1 from the value stored in %S7. + (%G6) adds 1 to the value stored in %G6.</p> <p>Failure: Does not fail</p>
< (<i>phone_no</i>)	<p>Command that allows a caller to request and transmit multiple fax documents with one call. It must be used in conjunction with the >() command. To fax multiple documents, you initiate the process with this command and, as the caller requests faxes, you add the file for the requested document using the >() command. The fax is sent automatically after the caller hangs up.</p> <p><i>phone_no</i> String, number, or variable containing the DTMF digits to be dialed. This command is used only in Extension fields.</p> <p>Example: < (9, 7144525570) > (C:\AMANDA\PRICES.TXT) > (C:\AMANDA\OPTIONS.TXT) > (C:\AMANDA\OPTIONS.TXT) causes Amanda to call (714)452-5570 (after dialing 9 for an outside line and pausing). Then Amanda faxes two files. Duplicate files are ignored.</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
<code>=(variable,value [,start,end])</code>	<p>Command that gives the specified variable the specified value. Use <i>start</i> and <i>end</i> to assign only part of the string (a substring) to the variable.</p> <p><i>variable</i> One of the port or global variables.</p> <p><i>value</i> A string, number, or variable.</p> <p><i>start</i> Optional. The starting character position to copy from <i>value</i>. The default is to copy the entire string. If <i>start</i> is less than 0, it is ignored.</p> <p><i>end</i> Optional, but must be used if <i>start</i> is used. The last character position to copy from <i>value</i>. If <i>end</i> is greater than the length of the string, the last character position of the string is used.</p> <p>Examples:</p> <pre>=(%S1,"FRENCH")</pre> <p>Gives %S1 the value of "FRENCH"</p> <pre>=(%S1,"FRENCH",3,4)</pre> <p>Gives %S1 the value of "EN".</p> <p>If %S2 is the telephone number 7530414,</p> <pre>=(%S1,%S2,1,3)</pre> <p>extracts the prefix 753 from %S2 and assigns it to %S1</p> <p>If %S3 is 1 and S4 is 1,</p> <pre>=(%S1,"MARY",%S3,%S4)</pre> <p>%S1 is assigned "M".</p> <p>Failure: <i>Start</i> greater than the length of the string</p>
<code>>(file)</code>	<p>Before using this command, you start incremental faxing with the <() command. Even if the same file is used with the >() command more than once (per incremental fax), it is faxed only once.</p> <p><i>file</i> A string or variable containing a valid DOS file name for the text file to be transmitted. Use the complete path to the file unless the file is in C:\AMANDA.</p> <p>This command is used only in Extension fields.</p> <p>Example: See the <() command.</p> <p>Failure: Does not fail</p>
<pre>0 1 2 3 4 5 6 7 8 9 A B C D * #</pre>	<p>Literal that plays the DTMF tone corresponding to the specified digit: 0–9, A–D, *, or #</p>
<code>%A</code>	<p>System variable containing the value of the fax_dl_init configuration setting. See “Dial Out Dialstring” on page 224.</p> <p>Example: If %A is "9,", a 9 followed by a pause is needed to access an outside telephone line.</p>
<pre>%B1 %B2 %B3 %B4 %B5 %B6</pre>	<p>System variable that contains the serial number of the corresponding voice board. %B1 is voice board 1, %B2 is voice board 2, etc.</p>
<code>%C</code>	<p>System variable that contains the port number. Each port has its own %C. For example, if the current caller is on Port 3, %C contains a 3.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
%D	<p>System variable that contains the percentage of free disk space.</p> <p>Example: I(%D, <, 20, 171) causes Amanda to transfer to mailbox 171. In this case, 171 would have Do Not Disturb ON and Store Messages NO. The caller would hear a greeting that plays a warning about disk space being low. The Done Chain field would have something like mailbox 999, the greeting for which is "Thank you for calling. Good-bye."</p>
%E	<p>System variable that contains the contents of the current mailbox's Extension field. Each port has its own %E. An Extension field can contain up to 65 characters.</p> <p>Example: P(A, %E) causes Amanda to say the characters in the Extension field. See the P() command for more information.</p>
E	<p>Literal that performs an earth recall. This is used in place of the hookflash on some telephone switching systems.</p>
ext_no	<p>Series of DTMF digits that indicate an extension number. When these are the first characters in an Extension field (that is, the Extension field does not start with @), Amanda performs a supervised transfer.</p> <p>Example: 378 causes Amanda to call extension 378 and supervise the call.</p> <p>Failure: Invalid extension number</p>
%F(<i>field</i> [, <i>mailbox</i>])	<p>System variable that contains the value of the specified field for the specified mailbox. Each port has its own %F.</p> <p><i>field</i> One of the following numbers or a variable containing that number:</p> <ul style="list-style-type: none"> 1 for the Directory Name 1 field 2 for the Directory Name 2 field 3 for the Comment field (if your system uses Brooktrout voice boards) <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p>Example: %F(3, 126) assigns the string from the Comment or Set Name field for mailbox 126 to %F.</p> <p>Failure: Invalid mailbox</p>
F	<p>Literal that performs a hookflash. The duration of the hookflash is specified in the telephone switching system dial codes section of the Setup utility. See also recall.</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
%G0 %G1 %G2 %G3 %G4 %G5 %G6 %G7 %G8 %G9	<p>The Amanda system has 10 global variables (%G0–%G9). Initially, each variable is equal to the empty string. The values of %G0–%G9 are the same no matter what port is current.</p> <p>If Port 1 changes %G1, then all other ports immediately see the new value for %G1. Each variable can contain a string of up to 143 characters.</p> <p>When the system is shut down, the values of %G0–%G9 are lost. They cannot be stored using the [(),](), or () commands.</p> <p>See also %S0–%S9.</p> <p>Example: + (%G0) adds one to the current value of %G0. = (%G2 , 555) assigns the mailbox 555 to %G2. G (%G2) causes Amanda to go to the Extension field for mailbox 555.</p> <p>Failure: Invalid variable name (such as %G52)</p>
G (<i>mailbox</i>)	<p>Command that controls processing. Amanda continues standard processing at the specified mailbox's Extension field.</p> <p><i>mailbox</i> A valid mailbox or a variable containing a mailbox.</p> <p>NOTE: If you use the G() command in a Notify Method field, remember that the telephone port is still in Notify mode and cannot transfer a call. Therefore, the Extension field that you go to should start with an @.</p> <p>Example: G (176) causes Amanda to go to the Extension field for mailbox 176.</p> <p>Failure: Invalid mailbox</p>
%H	<p>System variable that contains the empty string unless your 1001.PBX file (in the C:\PBX.DB directory) is set up for ANI or (in the future) Caller ID digits. Each port has its own %H.</p> <p>Example: If 1001.PBX contains: integration 10 'Cxxxxxxxxccccccc' and the packet 'C00000007530414' arrives, %H contains the number 7530414 as long as the port that received the call is active.</p>
[<i>ext_no</i>] H	<p>Command that performs a hang-up. With an extension number, it performs an unsupervised transfer before hanging up. This H() command ends the processing of tokens for the current Extension or Notify Method field.</p> <p>If you use an unsupervised transfer in the mailbox's Extension field, make sure that Call Screening is locked off. If Call Screening is on for an supervised call, the caller is screened but that recording is not played to the user.</p> <p><i>ext_no</i> Series of DTMF digits that indicate an extension number.</p> <p>Example: 151H causes Amanda to transfer the call to extension 151 and hang up (without waiting for a voice or busy signal) when Amanda is processing a call.</p> <p>Failure: Invalid extension number</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
H (<i>mailbox</i>)	<p>Command that performs exit routines when a caller hangs up. It specifies the mailbox to be processed if a hang-up condition is detected while processing the current set of tokens. (Processing these tokens can take Amanda to more than one mailbox.)</p> <p><i>mailbox</i> A valid mailbox or a variable containing a mailbox. This command is used only in Extension fields.</p> <p>Example: H(614) causes Amanda to go to mailbox 614 when a caller hangs up. Because you are tracking the number of hang ups, the Extension field for mailbox 614 has tokens that add one to the variable with which you are counting the hang-ups, for example, +(%G4).</p> <p>Failure: Invalid mailbox</p>
%I (<i>field</i> , <i>msg_no</i> [, <i>mailbox</i>])	<p>System variable that contains the data from the specified field of the specified message. Each port has its own %I. This lets you extract specific information from a message. For example, you might use %I in a notification record.</p> <p><i>field</i> One of the following: D for the Date field T for the Time field F for the From field</p> <p><i>msg_no</i> The number of an existing message. You cannot use a variable containing that number.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p>NOTE: If a message is from an outside caller, the From field of that message is equal to -1. If the message is from a caller who is logged on to Amanda, the From field contains the caller's mailbox.</p> <p>Examples: P(%I(D,5),D) plays the date of message 5 in the current mailbox. P(%I(T,5),T) plays the time of message 5 in the current mailbox. P(%I(D,5,212),D) plays the date of message 5 of mailbox 212. P(%I(F,5,212),U) plays the Name/Extension recording of the mailbox who sent message 5 of mailbox 212. See the P() command for more information.</p> <p>Failure: Invalid mailbox Invalid message number</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
I (<i>value</i> , <i>operator</i> , <i>value</i> , <i>mailbox</i>)	<p>Command that allows you to control processing based on a condition. If the specified values and operator create a condition that is true, Amanda continues processing at the specified mailbox. If the condition is false, the next token after this command is executed.</p> <p><i>value</i> Any string, number, or variable.</p> <p><i>operator</i> One of the following symbols:</p> <ul style="list-style-type: none"> > greater than < less than = equal ! not equal <p><i>mailbox</i> Any valid mailbox or a variable containing a mailbox.</p> <p>Examples: I("111",<,"222",1000) continue processing at mailbox 1000. I("111",>,"222",1000) continue processing at the next token. I(%S1,="1234",2000) continue at mailbox 2000 only if %S1 contains the value 1234. I(%S1,="IVR",2000) continue at mailbox 2000 only if %S1 contains the value "IVR".</p> <p>NOTE: When using the I() command in a Notify Method field, remember that the telephone port is still in Notify mode and cannot transfer a call. Therefore, the Extension field that you go to should start with an @.</p> <p>Failure: Invalid mailbox If there is a problem with a condition, it is considered false rather than a failure</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
J (<i>file_or_box</i> , <i>phone_no</i> [, <i>tokens</i>])	<p>Command that allows a fax to be received as a file (for later transmission with the T() command) or as a message for a mailbox.</p> <p>Before using this command, make sure the configuration settings for the physical serial port have been defined. See “Serial Port Settings” on page 221.</p> <p><i>file_or_box</i> A string or variable indicating where the fax is to be stored. It contains either a mailbox indicating whose message it is or a valid DOS file name for a text file. Use the complete path to the file unless the file is in C:\AMANDA.</p> <p><i>phone_no</i> The telephone number for the fax device that sends the transmission or a variable containing that number.</p> <p>Use the empty string to make Amanda wait until a call rings into the appropriate fax port. (When not in a variable, the empty string must appear in this command as a pair of double quotation marks—even though some commands allow you to omit them.)</p> <p><i>tokens</i> Optional. A string or variable that defines the actions Amanda takes to connect the call to the fax port.</p> <p>This command is used only in Extension fields.</p> <p>Example: J(123,"","P(G1)%X%F-H") sets up a personal fax mail mailbox. In this case, mailbox 123 receives a fax as a message and P(G1) plays a greeting such as “Start your fax machine at the tone.” The following tokens allow for one-call fax transmission:</p> <p>%X The system variable that contains the codes needed to get the transfer dial tone on the current port</p> <p>%F The extension of the fax port being used</p> <p>-H A hang-up (after pausing a half second to complete an unsupervised transfer)</p> <p>J("C:\\FAXES\\FAX1","") makes Amanda set up one of her fax modems to wait for a call and accept a fax called C:\FAXES\FAX1. You can use this to fax files to your own Amanda system. For example, if you print a text file that contains information for customers and then fax it to Amanda, Amanda can fax that information out to customers using the T() command.</p> <p>Failure: Invalid mailbox Fax modem not configured properly Physical port not available Logical port not configured properly</p>
K <(x[, <i>value</i>])	<p>Command that shifts the values of the %S variables to the left or right.</p> <p><i>x</i> A number (ranging from 0 to 20). When the number is positive, the shift is to the left. When negative, the shift is to the right.</p> <p><i>value</i> Optional. The data to be placed in the %S variables left empty by the shift. The default is to perform a circular shift, leaving no variables empty because the value from %S0 moves to %S19, or vice versa, for every shift.</p> <p>Examples: K<(1) shifts the contents of %S0 through %S19 to the left by one location. The contents of %S19 moves to %S18, the contents of %S18 moves to %S17, etc. The contents of %S0 moves to %S19 because this is a circular shift. None of the previous values are lost. They are only relocated.</p> <p>K<(-3,"JOHN DOE") shifts the contents of %S0 through %S19 to the right three locations, then replaces each of the first three values (%S0, %S1, and %S2) with the string "JOHN DOE". The last three values (%S17, %S18, and %S19) are lost.</p> <p>K<(20,"") is a quick way to clear all variables, replacing them with the empty string.</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
KA (<i>on_off</i>)	<p>Command that dials the PBX parameter <code>dl_light_on</code> or <code>dl_light_off</code> specified in the telephone system dial codes. This command is often used in notification templates.</p> <p><i>on_off</i> 1 or 0 to indicate whether the message waiting indicator is turned on or off. You can use a variable that contains a 1 or 0.</p> <p>When the value is 1, the message waiting indicator is turned on as Amanda dials the codes for “What to dial to set the message waiting indicator on” (the <code>dl_light_on</code> parameter).</p> <p>When the value is 0, the message waiting indicator is turned off as Amanda dials the codes for “What to dial to set the message waiting indicator off” (the <code>dl_light_off</code> parameter).</p> <p>Most of the popular telephone systems have specified values that turn the message waiting indicator on and off. If these values are not pre-defined for your system, you can set them using Amanda’s Setup utility.</p> <p>Example: <code>KA(1)</code> causes Amanda to dial the string specified in the dial codes for “What to dial to set the message waiting indicator on.”</p> <p>Failure: Does not fail</p>
KB (<i>frequency</i> , <i>msecs</i>)	<p>Command that plays a certain frequency for a certain time period (defined in milliseconds).</p> <p><i>frequency</i> A number of Hz. For example, the only frequencies supported by the Brooktrout driver are those roughly within the range 300–3000 Hz.</p> <p><i>msecs</i> A number of milliseconds. The range is 1–6553.</p> <p>Example: <code>KB(350,2000)</code> plays the frequency 350 Hz for two seconds.</p> <p>Failure: Does not fail</p>
KC (<i>mailbox</i> , <i>variable</i>)	<p>Command that compares the security code for the specified mailbox with the contents of a variable. If there is a match, the command is successful. For callers who do not know the security code, Amanda continues processing using the mailbox in the Done Chain field.</p> <p><i>mailbox</i> Any valid mailbox or a variable containing a mailbox.</p> <p><i>variable</i> The port or global variable whose contents are matched against the security code of <i>mailbox</i>.</p> <p>Example: <code>R(G1,%S1)KC(212,%S1)</code> assigns the DTMF digits entered by the caller to %S1, compares %S1 with the security access code of mailbox 212. Additional tokens would take some appropriate action.</p> <p>Failure: Invalid mailbox Invalid security code Security codes do not match</p>
KD (<i>msg_no</i> [<i>, mailbox</i>])	<p>Command that deletes a message from the specified or current mailbox. Using this command cancels any pending Notify actions for the specified message automatically.</p> <p><i>msg_no</i> A number or a variable containing a number.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p>Examples: <code>KD(5)</code> deletes message 5 of the current mailbox. <code>KD(10,212)</code> deletes message 10 of mailbox 212.</p> <p>Failure: Invalid mailbox Invalid message number</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
KG (<i>address</i> , <i>subject</i> , <i>msg_no</i> [, <i>msg_disp</i> [, <i>mailbox</i> [, <i>sound_type</i>]])	<p>Forwards voice and fax messages—or a notification about those messages—to an Internet e-mail address. All the components of each message being forwarded are included in the resulting e-mail, which is in MIME format. Voice components are converted to WAV files containing GSM audio (for maximum compression while still being playable on all Windows 9x, NT, and 2000 systems). Fax components are converted to TIFF/F format.</p> <p>The user will be using one of the following:</p> <ul style="list-style-type: none"> • Only the Amanda mailbox to process voice and fax messages. In this case, this token is used to notify the user that messages await processing in the Amanda mailbox. This token uses the combination of <i>msg_no</i> 0 and <i>msg_disp</i> 0. • Only the Internet address (and not the Amanda mailbox) to process voice and fax messages. In this case all messages stored by the Amanda system are forwarded and then deleted. This token uses the combination of <i>msg_no</i> -1 and <i>msg_disp</i> 2. • Both the Internet address and the Amanda mailbox to process voice and fax messages. In this case only new messages stored by the Amanda system are forwarded to the Internet address when necessary. Those that are forwarded are then marked as "read" and non-urgent. This token uses the combination of <i>msg_no</i> -1 and <i>msg_disp</i> 1. <p><i>address</i> A string or a variable containing the Internet e-mail address to which the message will be sent.</p> <p><i>subject</i> A string or a variable containing the default subject to be used when a message has no subject or when no message is being forwarded to the Internet e-mail address. For example, you might use "New Voice Message" with a message or "Check Voice Mail" when no message is sent. If a forwarded message has a subject, that subject is used instead of the default subject.</p> <p><i>msg_no</i> Indicates what messages are to be forwarded. Use one of the following values as a number or in a variable:</p> <ul style="list-style-type: none"> • The message number of just one voice or fax message to be forwarded to the Internet e-mail address. • 0 to indicate that no message is being forwarded. When you use 0, a new message, consisting of only the default subject, is created and sent. The new message serves as a notification about existing voice or fax messages. • -1 to forward all messages (when <i>msg_disp</i> is set to 2) or all new messages (when <i>msg_disp</i> is set to 1). Do not use -1 when <i>msg_disp</i> is set to 0. <p><i>msg_disp</i> Optional. Indicates what to do with voice and fax messages that have been sent successfully. This parameter is ignored when <i>msg_no</i> is 0. The default is 0. Use one of the following values:</p> <ul style="list-style-type: none"> • 0 to leave the forwarded messages as they are in the Amanda mailbox. • 1 to make sure that the new messages in the Amanda mailbox are no longer marked new or urgent. • 2 to delete all the messages in the Amanda mailbox. <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. Indicates what mailbox on the Amanda server contains the messages to be sent. The default is the current mailbox. If you wish to use the <i>sound_type</i> parameter, you must set this to a value. You can use %U for the current mailbox number.</p> <p><i>sound_type</i> A string or a variable containing one of the following sound types. Which type works best depends on the recipient's e-mail client and .wav file player. These settings are not case-sensitive. The default is "X-MS-WMA". You may need to experiment to find the best setting.</p> <ul style="list-style-type: none"> • X-MS-WMA requests that the receiving client use Windows Media Player for voice messages. • X-WAV works with Sound Recorder. • WAV is more generic.

Alphabetical Token Reference (Continued)

Token Syntax	Description
KG <i>cont.</i>	<p>Examples: KG(%V, "CHECK VOICE MAIL", 0) causes Amanda to send an Internet e-mail notification to the e-mail address specified in %V. KG(%V, "NEW VOICE MAIL", -1, 1) causes Amanda to send all new messages in the current mailbox to the e-mail address specified in %V. After sending the messages successfully, Amanda makes sure that the messages are no longer marked new or urgent. KG(%V, "NEW VOICE MAIL", -1, 2, %U, "X-WAV") causes Amanda to send all the messages in the current mailbox to the e-mail address specified in %V. Amanda specifies that the voice messages have the sound type "X-WAV", expecting the Sound Recorder to play them on the computer that receives them. After sending the messages successfully, Amanda deletes all the messages. Note: If you use %V as in these examples, you must specify Internet e-mail addresses in the Variable field of users' message notification templates. Failure: Invalid mailbox number Invalid message number Use of <i>msg_no</i> -1 with <i>msg_disp</i> of 0</p>
KI (<i>target</i> , <i>source</i> , <i>variable</i>)	<p>Command that searches one string (called the source string) to see if it contains a copy of another string (called the target string).</p> <p><i>target</i> A string or a variable containing the string to be searched for inside the <i>source</i>.</p> <p><i>source</i> A string or a variable containing the string to search.</p> <p><i>variable</i> The port or global variable to which the KI() command assigns one of the following:</p> <ul style="list-style-type: none"> • Zero if the target is not found in the source. • The number of the position within the <i>source</i> string at which the copy of the <i>target</i> string starts. <p>Examples: KI("UL", "PAUL INCE", %S1) is a successful search and assigns the value 3 to %S1 KI("ULL", "PAUL INCE", %S1) fails and assigns the value 0 to %S1 KI(%S0, %S1, %S2) means if a copy of %S0 is found within %S1, %S2 is assigned its character position. If %S0 is not found, %S2 is assigned the value 0. Failure: Does not fail</p>
KJ (<i>mailbox</i> , <i>list_number</i> [, <i>sender</i>])	<p>Allows a caller to record a message that, when saved, is sent to a list of users.</p> <p><i>mailbox</i> Any valid mailbox or a variable containing a mailbox.</p> <p><i>list_number</i> Any valid list number (1–8 or 10–30). If the mailbox number is 999, then the list number is for a system list rather than a user list.</p> <p><i>sender</i> Optional. Provides a sender for the message or treats the message as though it were from outside the Amanda system.</p> <p>When 0, the message is treated as a message from outside the Amanda system. Amanda does not identify the sender. This is the default.</p> <p>When 1, the Message From field contains the number of the mailbox containing this token. Amanda plays the name and extension recording for that mailbox's owner when identifying the sender.</p> <p>Example: KJ(128, 5) causes Amanda to record a message and then send it to the users on mailing list 5 for mailbox 128. Failure: Invalid mailbox or list number or out of disk space</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
KL (<i>mailbox</i> , <i>security_code</i>)	<p>Command that logs the current caller on to the specified mailbox. The caller is at the top level menu (the menu that says "Press 1 to play your messages....").</p> <p><i>mailbox</i> Any valid mailbox or a variable containing a mailbox.</p> <p><i>security_code</i>The security code for the specified mailbox.</p> <p>Example: R(G1,%S1)R(G2,%S2)P(G5)P(%S1,N)KL(%S1,%S2)</p> <p>Greeting 1 says, "Please enter the mailbox you wish to log into." After the caller enters the mailbox, Amanda assigns it to %S1. Greeting 2 says, "Please enter the mailbox's security code." After the caller enters the code, Amanda assigns it to %S2. Next Amanda plays Greeting 5, "You are logging into mailbox", followed by the mailbox. KL(%S1,%S2) attempts to log the caller into the specified mailbox using the specified security code.</p> <p>Failure: Invalid mailbox Invalid security code</p>
<i>ext_no</i> KM	<p>Command that tells Amanda to do a supervised transfer to the specified extension, create a conference call for the caller and the user at the extension (using the dl_conference configuration setting), and record the call until detecting a hang-up or #. Amanda then makes the recording a message for the user.</p> <p><i>ext_no</i> Series of DTMF digits that indicate an extension number.</p> <p>Example: 128KM causes Amanda to transfer the call (if the system is processing a call) to extension 128, starts a conference call, and records the conference call as a message for mailbox 128.</p> <p>Failure: Invalid extension number</p>
KP (<i>mailbox</i> , <i>security_code</i>)	<p>Command that sets the security code for the specified mailbox.</p> <p><i>mailbox</i> Any valid mailbox or a variable containing a mailbox.</p> <p><i>security_code</i>String of DTMF digits that indicate the new security code for the specified mailbox.</p> <p>Example: KP(128,"5404") causes Amanda to change the security code for mailbox 128 to 5404.</p> <p>Failure: Invalid mailbox mailbox is locked or read-only Security code is an empty string, contains invalid characters, or exceeds limit set by the configuration option security_min_length. You set this option using the Setup utility.</p>
KQ (<i>phone_no</i> [, <i>mailbox</i>])	<p>Command that searches the messages in the current or specified mailbox and locates up to 20 fax messages. Each fax message is marked "heard" and the faxes are queued to be sent to the specified telephone number as one fax message.</p> <p><i>phone_no</i> The telephone number (or a variable containing that number) for the fax device that accepts the transmission. Use the empty string to make Amanda wait for a call to ring into the fax port.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p>Example: KQ(7145555555,126) causes Amanda to search mailbox 126 for fax messages and send them to 714-555-5555.</p> <p>Failure: Invalid mailbox no fax messages for the specified or current mailbox</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
KR (<i>file_or_box</i> [, <i>recording_info</i>])	<p>Command that makes a recording and stores it as either a file or a message for the specified mailbox.</p> <p><i>file_or_box</i> A string or variable indicating where the recording is to be stored. It contains either a mailbox indicating whose message it is or a valid DOS file name. Use the complete path to the file unless the file is in C:\AMANDA.</p> <p><i>recording_info</i> A number from 0 to 3 indicating whether the caller hears a beep (to start recording) and the post record menu. The default is 1.</p> <ul style="list-style-type: none"> 0 No beep; no post record menu. 1 Beep; no post record menu. 2 Beep; post record menu. 3 No beep; post record menu. <p>Examples: KR(212) makes the recorded response a new message for mailbox 212. KR("C:\MSG.VOX") stores the response in the MSG.VOX file in the root directory. In both cases, the caller hears the beep for recording but no post record menu.</p> <p>NOTE: When using the KR() command, be sure to ask the caller to leave a message. A suggested example is: P(G1)KR(212) Greeting 1 says, "Please leave a message at the tone. Finish by pressing # or hanging up."</p> <p>Failure: Invalid mailbox Unable to create file</p>
KS [(<i>errorlevel</i>)]	<p>Command that starts a system shutdown immediately.</p> <p><i>errorlevel</i> Optional. Specifies the exit code (a DOS errorlevel) at which the system exits. The default exit code (<i>errorlevel</i>) is zero.</p> <p>This command is used only in Extension fields.</p> <p>Example: KS(3) immediately shuts down the system, exiting with the errorlevel set to 3. The errorlevel can be used by another program or a DOS batch file to determine what action should be taken next.</p> <p>Failure: Does not fail</p>
KT (G <i>n</i> [, <i>digit</i>])	<p>Command for rotary training. Amanda plays the specified greeting. The greeting should tell the caller to press or dial a digit. If the caller presses that DTMF digit, Amanda sets the port to detect only DTMF digits and proceeds. If the caller dials that rotary digit, Amanda learns it and sets the port to detect only rotary digits.</p> <p>This feature requires Brooktrout's Vantage VPS voice board with Rotary on Board.</p> <p>G<i>n</i> The greeting (<i>n</i> is replaced by 1-7) to indicate which greeting is to be played.</p> <p><i>digit</i> (Optional) The digit to be pressed or dialed. The default is 0.</p> <p>Example: KT(G3,1) plays greeting 3 for rotary training. The greeting must ask the caller to press or dial the digit 3.</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
KV (<i>file</i> , <i>field</i> , <i>value</i>)	<p>Command that finds and deletes the first record in the specified file that has the specified value in the specified field.</p> <p><i>file</i> A string or variable containing a valid DOS file name for the text or DBF file. Use the complete path to the file unless the file is in C:\AMANDA. No line in the file should exceed 143 characters. There is no limit to the number of lines in the file.</p> <p><i>field</i> A number, string, or variable that indicates the number or name of a field.</p> <p><i>value</i> A string or variable that contains the data to be compared with the contents of the specified field.</p> <p>Example: KV("C:\LISTS\PHONE.LST",4,"STEVE BRUCE") searches for the first record in the PHONE.LST file that contains the value STEVE BRUCE in field 4. If found, the entire record is deleted. If not found, no record is deleted (but the command is still successful).</p> <p>Failure: The file is read-only Insufficient disk space to save file Invalid field Invalid file File is not the correct format (text file containing comma-separated fields and carriage return/linefeed separated records or .DBF file)</p>
KW [(<i>rings</i> [, P V])]	<p>Command that waits the specified number of rings for an answer. If an answer is detected, the system dials dl_connect and frees the port. If there is no answer or the line is busy, the system dials dl_rnaret or dl_bsyret, respectively, and then processes the next token.</p> <p><i>rings</i> The number of rings to wait.</p> <p>P Specifies a pager answer.</p> <p>V Specifies a voice answer.</p> <p>Example: KW(3,V) waits three rings for a voice answer before either connecting the caller or treating the call as a ring no answer or busy call.</p> <p>Failure: Does not fail</p>
L (<i>file</i>)	<p>Command that immediately changes the system prompts to use the specified Amanda system language file. This changes the system prompts, but the greetings of the individual mailboxes might need to be recorded by the users in the new language.</p> <p><i>file</i> A string or variable containing the name of a valid Amanda system language file (minus the .IDX extension and the DOS path). Amanda knows that the system language file names end in .IDX and are located in the Amanda directory.</p> <p>Examples: L(ENGLISH) changes the prompts to those found in ENGLISH.IDX (because your system has a Brooktrout voice board) in the C:\AMANDA directory. L(MEXICAN) changes the prompts to those found in MEXICAN.IDX (because your system has a Brooktrout voice board) in the C:\AMANDA directory.</p> <p>Failure: Does not fail (If you specify a file that doesn't exist or is not a prompt file, Amanda uses the current prompt file.)</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
LEN [<i>string</i>]	<p>Assumes the value of the total number of characters within a string or digits within a number.</p> <p><i>string</i> Any string, number, or variable.</p> <p>NOTE: The brackets in this syntax are bold. The brackets are a required part of the syntax whenever you use LEN. Be careful not to confuse them with the non-bold brackets that indicate that the syntax within the brackets is optional.</p> <p>Example: LEN[7145551212] assumes the value 10. I(LEN[%S1] , = , 4 , %S1) checks the length of the DTMF entry stored in %S1 because all extensions have 4 digits. If %S1 contains a mailbox, Amanda goes to that mailbox. See the I() command for more information.</p> <p>Failure: Does not fail</p>
%M [(<i>mailbox</i>)]	<p>Command that returns the total number of messages for the specified or current mailbox. Each port has its own %M.</p> <p><i>mailbox</i> Optional. A valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p>Example: %M(321) contains the number of messages stored for mailbox 321.</p> <p>Failure: Invalid mailbox</p>
M (<i>greeting</i> [<i>#mailbox</i>], <i>repetition</i> , <i>delay</i>)	<p>When Amanda processes this command, the system plays the specified greeting and waits for a single DTMF digit to be pressed by the caller. Amanda immediately finds the matching menu selection and continues processing at the specified mailbox. This eliminates the normal delay for determining that a DTMF entry has been completed.</p> <p><i>greeting</i> One of the seven mailbox greetings (G1–G7). This greeting should be a menu from which the caller is to make a selection.</p> <p><i>mailbox</i> Optional. Any valid mailbox. The default is the current mailbox.</p> <p><i>repetition</i> The number of times to play the greeting.</p> <p><i>delay</i> The amount of time (in tenths of seconds) to wait before repeating the greeting.</p> <p>This command is used only in Extension fields.</p> <p>Examples: M(G1 , 2 , 20) Amanda plays Greeting 1 twice, pausing for two seconds before repeating it. If the caller presses a DTMF digit, Amanda stops the greeting and uses the caller's digit to process the menu. If the caller makes no selection at all, Amanda continues processing at the next token. If the caller makes an invalid selection, Amanda restarts the M() command. If the caller makes a valid selection (for example 5), Amanda immediately continues processing at the mailbox specified in the <i>Menu</i> field 5. M(G1#111 , 2 , 30) plays Greeting 1 from mailbox 111. If there is no response from the caller, Amanda plays Greeting 1 again after a 3 second pause. If there is still no response, Amanda executes the next token in the Extension field.</p> <p>Failure: Invalid mailbox</p>
%N	<p>System variable that contains the number of new messages for the current mailbox. Each port has its own %N.</p> <p>Example: P(%N , N) causes Amanda to say the number of new messages as a number.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
N (<i>file,field,value</i> {, <i>field,variable</i>)	<p>Command that searches the specified file for <i>all</i> the records that match the specified value. This command changes the values in up to 8 fields in each matching record using the values stored in the specified variables. If no matching records are found, Amanda continues processing the next token. See also the V() command.</p> <p><i>file</i> A string or variable containing a valid DOS file name for the text or DBF file. Use the complete path to the file unless the file is in C:\AMANDA. No line in the file should exceed 143 characters. There is no limit to the number of lines in the file.</p> <p><i>field</i> A number, string, or variable that indicates the number or name of a field. The first <i>field</i> indicates what field to compare with <i>value</i>; the additional (up to 8) <i>fields</i> indicate what fields to change. Each field is changed to the value of its corresponding variable. (.DBF files have field names; text files have field numbers.)</p> <p><i>value</i> A string or variable that contains the data to be compared with the contents of the specified field.</p> <p><i>variable</i> One of port or global variables.</p> <p>Example: N("C:\LISTS\PHONE.LST",1,"RYAN GIGGS",3,%S1,2,%S2) finds all records in the file "PHONE.LST" that have "RYAN GIGGS" in the first field and replace the contents of field 2 with the value of %S2 and the contents of field 3 with the value of %S1. Numbers are used for the fields because PHONE.LST is a text file.</p> <p>Failure: Specified file does not exist Value of field not found within the file</p>
O (<i>time</i>)	<p>Command that makes Amanda go on-hook for the specified amount of time. Depending upon the value used, you can cause a hookflash or a hang-up. This is particularly useful for generating an intermediate hang-up condition during token processing without terminating the actual continued token processing. See also the H() command.</p> <p><i>time</i> A number in tenths of seconds or a variable containing that number.</p> <p>Example: O(20) causes Amanda to go on-hook for two seconds.</p> <p>Failure: Does not fail</p>
%P	<p>System variable that contains the previous mailbox, that is, the last mailbox accessed before the current mailbox. Each port has its own %P. See also %U (current mailbox).</p> <p>Example: While accessing mailbox 990, %U is 990. Then a caller enters 222 and is transferred to that extension. As mailbox 222 is accessed, %U becomes 222, and %P becomes 990.</p>
P [<i>repetition</i>] (<i>date,D</i> [, <i>hangup</i>])	<p>Command that tells Amanda to say the specified number as a date.</p> <p><i>repetition</i> The number of times to repeat the date. The default is 1.</p> <p><i>date</i> A number in either of the following formats: MMDDYY (which assumes the year 19YY,) or MMDDYYYY. For dates after 1999, you must use MMDDYYYY. Despite this format, the date is read in the order that most speakers of the prompt language (specified using the Setup utility) expect to hear it. If the year is the current year, Amanda does not read the year.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(06261994,D) causes Amanda to say "June twenty-sixth, nineteen ninety-four"</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
<p>P[<i>repetition</i>] (<i>amount</i>, <i>currency</i> [,<i>hangup</i>])</p>	<p>Command that tells Amanda to say the specified number as an amount of money.</p> <p><i>repetition</i> The number of times to repeat amount. The default is 1.</p> <p><i>amount</i> A number from 0 to 999 million.</p> <p><i>currency</i> Use one of the following: \$ For dollars and cents. F For francs and centimes. P For pesos and centavos.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(06261994,\$) causes Amanda to say "Sixty-two thousand six hundred nineteen dollars and ninety-four cents" The monetary terms are always available, regardless of the system language. Failure: Does not fail</p>
<p>P[<i>repetition</i>] (<i>number</i>,N [,<i>hangup</i>])</p>	<p>Command that tells Amanda to say the absolute value of the number.</p> <p><i>repetition</i> The number of times to repeat absolute value. The default is 1.</p> <p><i>number</i> A number or variable representing a number from 0 to 999 million.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>NOTE: Use a condition to test whether the number is positive or negative. Use a greeting that says "negative" or "minus" to handle negative numbers.</p> <p>Examples: Suppose that %S1 contains -1234 and G1 contains the recording "negative," then I(%S1,>,0,1001)P(G1)P(%S1,N) causes Amanda to say "negative one thousand two hundred thirty-four". (mailbox 1001's Extension field would not include the greeting—just the command, P(%S1,N)) P(06261994,N) causes Amanda to say "Six million two hundred sixty-one thousand nine hundred ninety-four." Failure: Does not fail</p>
<p>P[<i>repetition</i>] (<i>time</i>,T [,<i>hangup</i>])</p>	<p>Command that tells Amanda to say the specified number as a time of day.</p> <p><i>repetition</i> The number of times to repeat the contents of the port variable. The default is 1.</p> <p><i>time</i> A number or variable containing a number that specifies a time in the 24-hour HHMM format. However, Amanda says the time in a 12-hour format, followed by A.M. or P.M.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(1826,T) causes Amanda to say "Six, twenty-six P.M." Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
P [<i>repetition</i>] (A, string [, hangup])	<p>Command that tells Amanda to say the characters in the specified string. For a space, Amanda says the word "space".</p> <p><i>repetition</i> The number of times to repeat the contents of the string. The default is 1.</p> <p><i>string</i> A string of letters from the alphabet and spaces.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(A, "GEORGE BEST") causes Amanda to say "G," "E," "O," "R," "G," "E," "space," "B," "E," "S," "T."</p> <p>Failure: Does not fail</p>
P [<i>repetition</i>](D)	<p>Command that tells Amanda to say the percentage of remaining disk space.</p> <p><i>repetition</i> The number of times to repeat the percentage of disk space. The default is 1.</p> <p>Examples: P(D) causes Amanda to say "The percentage of free disk space is" followed by the percentage as a number, e.g., forty-two.</p> <p>Failure: Does not fail</p>
P [<i>repetition</i>] (greeting [, mailbox [, hangup])	<p>Command that tells Amanda to play the specified greeting for the specified or current mailbox.</p> <p><i>repetition</i> The number of times to repeat the greeting. The default is 1.</p> <p><i>greeting</i> One of the seven mailbox greetings (G1–G7).</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(G1) causes Amanda to play Greeting 1 for the current mailbox.</p> <p>Failure: Invalid mailbox</p>
P [<i>repetition</i>] (M[, mailbox [, hangup])	<p>Command that tells Amanda to say the total number of messages for the specified or current mailbox.</p> <p>Using this command cancels any pending Notify actions for the specified message automatically.</p> <p>When this command plays a message that is marked with Receipt Verification, the verification message's From field contains the mailbox which executed this command.</p> <p><i>repetition</i> The number of times to repeat the number of messages. The default is 1.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(M, 212) causes Amanda to say the total number of messages for mailbox 212.</p> <p>Failure: Invalid mailbox</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
P [<i>repetition</i>] (M <i>n</i> [<i>,mailbox</i> [<i>,hangup</i>]])	<p>Command that tells Amanda to play the message with the specified number for the specified or current mailbox.</p> <p><i>repetition</i> The number of times to repeat the message. The default is 1.</p> <p><i>n</i> The number of the message to be played.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P3(M1,212) causes Amanda to play message 1 for mailbox 212 three times.</p> <p>Failure: Invalid mailbox</p>
P [<i>repetition</i>] (M <i>N</i> [<i>,mailbox</i> [<i>,hangup</i>]])	<p>Command that tells Amanda to play all new messages for the specified or current mailbox.</p> <p><i>repetition</i> The number of times to repeat the message. The default is 1.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(MN) causes Amanda to play the new messages for the current mailbox.</p> <p>Failure: Invalid mailbox</p>
P [<i>repetition</i>] (N [<i>,mailbox</i> [<i>,hangup</i>]])	<p>Command that tells Amanda to play the Name/Extension recording of the specified or current mailbox. If there is no recording, nothing is played. See also P[<i>repetition</i>](U[<i>,mailbox</i>]).</p> <p><i>repetition</i> The number of times to repeat the Name/Extension recording. The default is 1.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(N) causes Amanda to play the Name/Extension recording for the current mailbox.</p> <p>Failure: Invalid mailbox</p>
P [<i>repetition</i>] (DTMF)	<p>Command that tells Amanda to say a number as DTMF digits. This is usually used for repeating the number corresponding to the DTMF tones entered by a caller.</p> <p><i>repetition</i> The number of times to repeat the DTMF digits. The default is 1.</p> <p><i>DTMF</i> A number or variable containing a series of DTMF digits.</p> <p>Example: P(%S5) causes Amanda to say the DTMF digits in %S5. For example, if %S5 contains the number 411, Amanda says 4-1-1 instead of four hundred eleven.</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
P [<i>repetition</i>] (<i>prompt_no</i> , V [, <i>hangup</i>])	<p>Command that tells Amanda to look for the specified prompt number in the current system language file. Then Amanda plays the prompt associated with that number.</p> <p><i>repetition</i> The number of times to repeat the prompt. The default is 1.</p> <p><i>prompt_no</i> The number or variable containing the number for the prompt. The current range is from 1 to 477. (For some languages, some of the prompt numbers reference blank messages.)</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P2(15,V) causes Amanda to play prompt number 15 twice.</p> <p>Failure: Does not fail</p>
P [<i>repetition</i>](R)	<p>Command that tells Amanda to say the DTMF digits entered by a caller who requested relay paging notification. (These digits are stored in %R.) This command can be used in either field, but makes the most sense when used in a Notify Method field.</p> <p><i>repetition</i> The number of times to repeat the DTMF digits. The default is 1.</p> <p>Example: P(R) causes Amanda to say the DTMF digits stored in the system variable %R. You can also use: P(%R)</p> <p>Failure: Does not fail</p>
P [<i>repetition</i>] (U [, <i>mailbox</i> [, <i>hangup</i>]])	<p>Command that tells Amanda to play the Name/Extension recording of the specified or current mailbox. If there is no recording, Amanda says "mailbox," followed by the digits for the mailbox. See also P[<i>repetition</i>](N[, <i>mailbox</i>]).</p> <p><i>repetition</i> The number of times to repeat the Name/Extension recording. The default is 1.</p> <p><i>mailbox</i> Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(U) causes Amanda to play the Name/Extension recording for the current mailbox. If it doesn't exist, Amanda says the digits for the mailbox.</p> <p>Failure: Invalid mailbox</p>
P [<i>repetition</i>](V)	<p>Command that tells Amanda to say the digits in the Variable field of the Notification record.</p> <p><i>repetition</i> The number of times to repeat the contents of the Variable field. The default is 1.</p> <p>Example: P2(V) causes Amanda to say the digits in the Variable field twice. The following also works: P2(%V)</p> <p>Failure: Does not fail</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
<p>P[<i>repetition</i>] (X,<i>file</i> [,<i>hangup</i>])</p>	<p>Command that tells Amanda to play a voice file.</p> <p><i>repetition</i> The number of times to repeat the contents of the file. The default is 1.</p> <p><i>file</i> A string or variable containing the name of a voice file. Use the complete path to the file unless the file is in C:\AMANDA. The file can be one recorded using the KR() command, an Amanda message file, or a voice file copied to the Amanda system. However, the copied file must have the same sampling rate as Amanda voice files. The sampling rate is the value of the <i>adpcm_nq</i> system configuration option. This option's default is 32 kilobytes.</p> <p><i>hangup</i> Optional. The number 1 or 0 indicating how to process a hangup. The 1 means that the processing of this token ends. 0 means that the processing of this token ends, the string of tokens is aborted, and the channel hangs up so that it can wait for a new call.</p> <p>Example: P(X, "C:\\SAMPLE.VOX") retrieves "SAMPLE VOX" from the root directory, and plays it.</p> <p>Failure: Does not fail</p>
<p>Q({<i>greeting</i> [#<i>mailbox</i>][, E] }</p>	<p>Command that allows you to ask a caller a series of questions and store all the caller's responses as a single message for the current mailbox. Each question is recorded as a greeting which Amanda plays back with a tone. Then Amanda records a response and goes on to the next question. Up to 20 questions are allowed. To ask more than 7 questions (after using Greetings 1 to 7 for the current mailbox) you can use greetings from other mailboxes by specifying which mailbox's greeting to access with a # sign followed by the <i>mailbox</i>, e.g., G7#123 would use greeting 7 from mailbox 123. You use the Q() command to create voice forms or implement some IVR applications. This command is used only in Extension fields.</p> <p><i>greeting</i> One of the seven mailbox greetings (G1–G7).</p> <p><i>mailbox</i> Optional. Any valid mailbox. The default is the current mailbox.</p> <p>E Gives the caller the opportunity to edit (review, rerecord, append, or cancel) the previous group of answers.</p> <p>If additional token language processing is required after the caller has hung up, use the H token as part of the token string.</p> <p>Examples: Q(G1, G2, G3, G4, G5, G6, G7, G1#9000, G2#9000) causes Amanda to ask 9 questions recorded in the specified greetings, record 9 responses, and store the responses as one message for the current mailbox, regardless of what mailbox's provide the greetings. Q(G1, G2, G3, E) records three answers from the caller and then gives the caller an opportunity to review those answers as if they were one message. When editing, a menu gives the caller the options of re-recording, appending to or canceling the answers of that group. Q(G1, G2, E, G3, G4, E) asks the caller two questions and then allows the caller to edit those answers. Once the caller presses 9 to save, Amanda asks the next two questions and then allows the caller to edit the second group of answers.</p> <p>NOTE: While editing, pressing 4 to cancel erases all the previous answers (not just those in the group being edited) and restarts the Q() command.</p> <p>Failure: Invalid mailbox Invalid greeting</p> <p>NOTE: Amanda can store a total of 65,536 voice message files. However, each of the up-to-20 questions in the Q() command count is stored in a separate voice message file, even though Amanda treats all the questions as one "message". That means that a message total does not have to reach 65,536 to exceed the allowable number of files for voice messages. For example, a message total of 3276 could use every file available for storing messages—if each of those "messages" contains 20 responses to the questions in a Q() command.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
%R	<p>System variable (the relay variable) that contains the DTMF digits entered by the caller who requested relay paging notification. Each port has its own %R. This is primarily used to send up to 16 digits of information to a user's pager/beeper. This token is used only in Notify Method fields.</p> <p>Example: <code>9,%VW(9,V)P(U)P(R)</code> causes Amanda to call someone at home and say the telephone number and other information in the relay variable.</p>
<code>R(<i>greeting</i> [<i>#mailbox</i>], <i>variable</i> [,<i>timeout1</i> [,<i>timeout2</i>]])</code>	<p>Command that plays a greeting from the current or specified mailbox and stores the caller's DTMF entry as a number in the specified variable. The greeting is interrupted as soon as the first DTMF tone is entered. If there is no DTMF entry or if the timeout occurs, the variable is set to the empty string.</p> <p><i>greeting</i> One of the seven mailbox greetings (G1–G7).</p> <p><i>mailbox</i> Optional. Any valid mailbox. The default is the current mailbox.</p> <p><i>variable</i> One of the port or global variables.</p> <p><i>timeout1</i> A number from 0 to 10500 that represents the time in tenths of seconds to wait for the first DTMF digit after playing the greeting. The default is 1.2 seconds.</p> <p><i>timeout2</i> A number from 0 to 10500 that represents the time in tenths of seconds to wait between additional DTMF digits (after the first). The default is the value of the configuration option <code>tmo_dtmf</code>.</p> <p>Example: <code>R(G1,%S6,20)</code> stores a telephone number entered by a caller for later use. Greeting 1 is "Enter your telephone number, finish by pressing the # sign." The caller's entry is stored as a number in the port variable %S6. Amanda waits two seconds after the greeting before deciding that the caller is not going to enter a telephone number. <code>R(G1#111,%S1)</code> plays Greeting 1 of mailbox 111. The DTMF digits entered by the caller become the value of %S1.</p> <p>Failure: Invalid mailbox Invalid greeting</p>
<code>%S0 %S1 %S2 %S3 %S4 %S5 %S6 %S7 %S8 %S9 %S10 %S11 %S12 %S13 %S14 %S15 %S16 %S17 %S18 %S19</code>	<p>Each telephone port has its own set of 20 %S variables where you can store, modify, or retrieve information. One port's %S1 is not the same as another port's %S1. If Port 1 changes %S1, it does not change the value of Port 2's %S1. Initially, each variable is equal to the empty string. Each variable can contain a string of up to 143 characters. See also %G0–%G9.</p> <p>NOTE: The <code>[(</code>, <code>)]</code>, and <code> ()</code> commands can be used only with %S0 through %S9. The variables %S10 through %S19 cannot be read from, written to, or appended to any DOS file.</p> <p>Example: <code>+(%S0,5)</code> adds five to the current value of %S0. <code>=(%S12,714)</code> assigns the area code 714 to %S12. <code>I(%S12=714,555)</code> causes Amanda to go to the Extension field for mailbox 555 because the condition is true (%S12 does equal 714).</p> <p>Failure: Invalid variable name (such as %S52)</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
<p>S(<i>port</i>, [<i>string</i>], [<i>variable</i>], [<i>termination</i>], [<i>length</i>], [<i>timeout</i>])</p>	<p>Command that gives Amanda access to other computers via the serial ports. Amanda can send a string to and/or receive a string from the remote computer. When receiving, Amanda terminates the connection when the first of the following occurs:</p> <ul style="list-style-type: none"> • Amanda receives the specified termination string • Amanda receives the maximum number of characters • A timeout occurs <p>When sending, Amanda terminates the connection after the string is sent. Before using this command, make sure the configuration settings for the physical serial port have been defined.</p> <p><i>port</i> The number for or a variable containing the number for the logical serial port (1,2,3,4) mapped onto a physical COM port by the configuration option <i>serial_port1</i>, <i>serial_port2</i>, <i>serial_port3</i>, or <i>serial_port4</i>.</p> <p><i>string</i> Optional. A string or variable containing the characters to send to the specified serial port. It can contain alphanumeric characters as well as variables and special characters. The default is to send no string to the serial port.</p> <p><i>variable</i> Optional. The port or global variable that stores the response. The default is not to store a response.</p> <p><i>termination</i> Optional. A string or variable that defines the characters that, when read, stop Amanda from reading the serial port. This can use the same special characters as <i>string</i>. The default is "\R\N", the carriage return/linefeed pair that usually end a line in a text file. The terminating character, if any, does not become part of <i>variable</i>.</p> <p><i>length</i> Optional. A number or a variable containing a number. Its absolute value defines the maximum number of characters to receive over the serial port. The default is -143. Use a positive value for <i>length</i> when you are receiving a packet of characters, you know its exact size, and you want the command to fail if fewer characters are received. Use a negative number otherwise.</p> <p><i>timeout</i> Optional. A number or variable that defines the maximum time, in seconds, that Amanda should wait for the first character and also between characters being received on the serial port. The default is the setting for the configuration option <i>tmo_serial</i>.</p> <p>Example: S(2,%S3,%S4,,50) both sends and receives. The command uses COM port 2. %S3 stores the string to be sent. %S4 stores the string that is received. Amanda waits a half second for the first character and between characters. S(2,%S3) only sends. The command uses COM port 2. %S3 stores the string to be sent. This command has non-standard syntax. Because <i>all</i> the parameters after the string to be sent are not being used, this command does not need the additional commas. S(2,,%S4,,50) only receives. The command uses COM port 2. %S4 stores the string that is received. Amanda waits a half second for the first character and between characters.</p> <p>Failure: Physical port not available Logical port not configured properly If a timeout stops Amanda from receiving information before the maximum number of characters is received and the length is a positive number, Amanda considers the command a failure.</p>
<p>%T</p>	<p>System variable that contains the current connect time, the number of seconds that the current port/call has been active. Each port has its own %T.</p> <p>Examples: P(%T,N) causes Amanda to say the amount of connect time as a number. See the P() command for more information.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
T (<i>file</i> , <i>phone_no</i> [, <i>tokens</i>])	<p>Command that sends faxes to either a specified telephone number or to a connected call. Before using this command, be sure at least one fax modem is installed and configured on Amanda.</p> <p>Before using this command, make sure the configuration settings for the physical serial port have been defined. See “Serial Port Settings” on page 221.</p> <p><i>file</i> The file name of the fax you wish to transmit. It can be any valid DOS file name. Use the complete path to the file unless the file is in C:\AMANDA.</p> <p><i>phone_no</i> The telephone number (or a variable containing that number) for the fax device that accepts the transmission. Use the empty string to make Amanda wait for a call to ring into the fax port.</p> <p><i>tokens</i> Optional. A string or variable that defines the actions Amanda takes to connect the call to the fax port. For more information, please see the example for the J() command.</p> <p>This command is used only in Extension fields.</p> <p>Examples:</p> <p>T(C:/FAXES/NEWINFO.FAX,%G6) allows the user to request a fax and have the supplier of that fax send it to the provided telephone number. This is commonly called a “two-call fax back”. NEWINFO.FAX is the name of the file, and %G6 contains the fax telephone number.</p> <p>T(C:/FAXES/NEWINFO.FAX,"",%S5) allows the user to request a fax and have it sent as part of the current call. This is commonly called a “one-call fax on demand”. NEWINFO.FAX is the name of the file, and %S5 provides the tokens that connect the call to the FAX port.</p> <p>Failure: Fax modem not configured properly Physical port not available Logical port not configured properly</p>
%U	<p>System variable that contains the current mailbox number. Each port has its own %U. See also %P.</p>
U - <i>ext_no</i>	<p>Command that performs partially supervised transfers. Amanda does not transfer the call if the system detects a busy signal. To use the U token, the setting for Maximum Rings for the mailbox must be set to 2.</p> <p><i>ext_no</i> Series of DTMF digits that indicate an extension number.</p> <p>This command is used only in Extension fields.</p> <p>Example:</p> <p>U-144 causes Amanda to call extension 144 (if Amanda is processing a call). If the extension rings, the system transfers the call and hangs up. If the extension is busy, Amanda lets the caller know that.</p> <p>Failure: Does not fail</p>
%V	<p>System variable that contains the value of the Variable field in the current Notification record. Each port has its own %V.</p> <p>This token is used only in Notify Method fields.</p> <p>Example:</p> <p>If the only difference in a Notification template for mailboxes is the pager/beeper telephone number that Amanda should call, %V can store that number.</p> <p>9,%VW(3,P)%U*%M*%N# causes Amanda to call the user and play the number of messages.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
<code>V(<i>file</i>,<i>field</i>, value{,<i>field</i>, variable}[,<i>n</i>])</code>	<p>Command that searches the specified file for the <i>n</i>th record that has the specified value in the specified field. It retrieves values from up to 8 other fields in that record, putting the retrieved values in the specified variables. See also the N() command.</p> <p><i>file</i> A string or variable containing a valid DOS file name for the text or .DBF file. Use the complete path to the file unless the file is in C:\AMANDA. No line in the file should exceed 143 characters. There is no limit to the number of lines in the file.</p> <p><i>field</i> A number, string, or variable that indicates the number or name of a field. The first <i>field</i> indicates what field to compare with <i>value</i>; the additional (up to 8) <i>fields</i> indicate what fields to copy into the corresponding variables. (.DBF files have field names; text files have field numbers.)</p> <p><i>value</i> A string or variable that contains the data to be compared with the contents of the specified field.</p> <p><i>variable</i> One of port or global variables.</p> <p><i>n</i> (Optional) This parameter can be used only with ASCII files. A number indicating which matching record to use. For example, if <i>n</i> is 3, the first two matching records are ignored and data is taken from the third matching record. Amanda identifies <i>n</i> because, when it is used, there is an even number of parameters instead of an odd number.</p> <p>Example: <code>V("C:\LISTS\PHONE.LST",1,"JOHN",3,%S1,2,%S2)</code> searches the file PHONE.LST for the first record that has the value JOHN in field 1. If the search is successful, the value in field 3 of that record is stored in %S1 and the value in field 2 is stored in %S2.</p> <p>Failure: If no record is found Invalid file Invalid field</p>
%W	System variable that contains the day of the week (1 is Sunday, and 7 is Saturday).

Alphabetical Token Reference (Continued)

Token Syntax	Description
W (<i>n</i> , [<i>event</i> [<i>, mailbox</i>]])	<p>Command that tells Amanda to:</p> <ul style="list-style-type: none"> • Wait a number of tenths of seconds • Wait for an event, such as a dial tone or another appropriate answer. If the event does <i>not</i> occur, Amanda goes to the specified mailbox. <p><i>n</i> Without an event parameter (P, V, or T), a number of tenths of seconds. For dial tone (T), the number of seconds. For pager (P) and voice (V), the number of rings to wait before continuing. If <i>n</i> is 0 for pager or voice, the 0 is replaced with the value of <code>rmt_rna</code>, a configuration option that you define using the Setup utility. Other than that, the minimum number of rings should be 2. See “<code>rmt_rna</code>” on page 212.</p> <p><i>event</i> The event that Amanda waits for:</p> <p>P A pager answer</p> <p>V A voice answer</p> <p>T The dial tone</p> <p><i>mailbox</i> Any valid mailbox or a variable containing a mailbox. Specifies the mailbox to which control should be transferred if the event does not occur.</p> <p>Examples:</p> <p><code>W(3)</code> makes Amanda pause for 3 tenths of a second</p> <p><code>W(3,P)</code> makes Amanda wait up to three rings for a paging/beeping system to answer. Use this to confirm that the paging company answered before playing the DTMF digits to be displayed on the pager.</p> <p><code>W(4,V,111)</code> makes Amanda wait up to four rings for a voice. If a voice is detected, processing continues with the next token. Otherwise, control is transferred to mailbox 111.</p> <p>Failure: Invalid mailbox Event does not occur and no mailbox is specified</p>
%X	<p>System variable that contains the codes needed to get the transfer dial tone on the current port. Each port has its own %X. This is the setting of the <code>dl_dtwait</code> configuration option (usually F-). See “Dial Code Parameter” on page 28.</p>
X (<i>file</i>)	<p>Command that creates the specified file or LIGHT.ON. Used in conjunction with the Y() and Z() commands, this command can control Amanda’s processing of tokens.</p> <p><i>file</i> A string or variable containing a valid DOS file name for a text file. The default is to create the file LIGHT.ON in the mailbox’s directory.</p> <p>Example: A user’s message waiting indicator toggles on and off. For the first message, Amanda should turn the indicator on. The indicator should be left on for the second and later messages (until they are all listened to). So you use:</p> <ul style="list-style-type: none"> • <code>Z()</code> to check whether the indicator is on or not (if LIGHT.ON exists, the indicator is on). • <code>X()</code> to create the LIGHT.ON file when a message arrives and the indicator is not on. • <code>Y()</code> to delete LIGHT.ON when the indicator is turned off because the user has listened to all the messages. <p>Failure: Does not fail</p>
%Y	<p>System variable that contains the current date in American format: MMDDYYYY.</p> <p>Example: <code>P(%Y,D)</code> causes Amanda to say the current date (contained in %Y) as a date. See the P() command for more information.</p>

Alphabetical Token Reference (Continued)

Token Syntax	Description
Y[(<i>file</i>)]	<p>Command that deletes the specified file or LIGHT.ON.</p> <p><i>file</i> A string or variable containing a valid DOS file name for a text file. The default is to delete the file LIGHT.ON in the mailbox's directory.</p> <p>Example: Y (C : \ \ AMANDA \ \ FOOBAR . TXT) causes Amanda to delete FOOBAR.TXT. See also the X() command. Failure: Does not fail</p>
%Z	<p>System variable that contains the current time in 24-hour format: HHMM.</p> <p>Example: P (%Z , T) causes Amanda to say the current time (contained in %Z) as a time. See the P() command for more information.</p>
Z[(<i>file</i>)]	<p>Command that tests for the existence of the specified file or LIGHT.ON. If the file is there, Amanda immediately stops processing the rest of the tokens for this mailbox. Otherwise, the next token is executed.</p> <p><i>file</i> A string or variable containing a valid DOS file name for a text file. The default is to delete the file LIGHT.ON in the mailbox's directory.</p> <p>Example: Z () X () causes Amanda to check for LIGHT.ON. If it is <i>not</i> there, the X() command causes Amanda to create it. See also the X() command. Failure: Does not fail</p>

Troubleshooting

Check for the following mistakes:

1. Did you start the string of tokens without @ when you wanted Amanda to perform a hookflash or PCPM?
2. Did you start the string of tokens with @ when Amanda should NOT perform a hookflash or PCPM?
3. If the tokens are in an Extension field, did you forget that both Do Not Disturb and Call Screening must be OFF?
4. Did you check the trace file for information about what went wrong?

Tip: Remember that when a string of tokens in an Extension field fails, Amanda goes to the mailbox specified in the Done Chain for that mailbox. If you are testing a program and are not sure which strings of tokens fails, use different mailboxes in the Done Chain fields to help you. For example, if you do not know which of two strings fails, you might put mailbox 4000 in one Done Chain and mailbox 4001 in the other. If you use `@P(G1, your_personal_UserID)` in the Extension field for 4000 and use `@P(G2, your_personal_UserID)` in the Extension field for 4001, then you know which string fails based on which of your personal greetings Amanda plays.

Chapter 11: Programming Examples

Overview

This chapter contains programming examples for:

- System paging
- Switching and maintaining languages
- Retrieving order shipment information
- Allowing one and two-call faxes
- Using IVR and voice-form applications

System Paging of a User for Special Callers

This example illustrates inter-mixing tokens with Amanda's standard call processing.

Application

This application creates a special mailbox (for example, 611) for family, friends, or special customers. When callers access this mailbox, Amanda pages you over the telephone paging system in your office. After letting you know that you have an important call, Amanda transfers that call to your extension through a "backdoor" even if your regular extension mailbox (for example, 111) might have its Do Not Disturb setting ON.

The steps required to implement this feature might be summarized as follows:

1. Put the caller on hold.
2. Access the telephone switching system paging feature.
3. Say something such as "There is an important call for David."
4. Transfer the call to a "backdoor" mailbox that rings the extension.

Translating to Amanda's Tokens

This could be translated into Amanda tokens as follows:

1. Dial the code for putting the caller on Transfer Hold (which is normal processing if the first character is *not* an @ sign).
2. Dial the telephone switching system paging access code, for example, 33* (if that is your system's code for a system page.)

3. Play a greeting that you have already recorded such as “There is an important call for David” using the P() token.
4. Dial the code for retrieving the caller from Transfer Hold and then transfer the caller to a “backdoor” mailbox that rings the extension. For example, to retrieve the caller you use %X and to access the “backdoor” mailbox use the G() token.

Result

The final result might be:

```
33*P(G1)%XG(6111)
```

where G1 for the current mailbox has the “important call for David” recording and mailbox 6111 transfers the call to the extension 111 by having 111 in its *Extension* field with *Do Not Disturb* set to OFF and its *Lock* ON.

Switching and Maintaining Languages

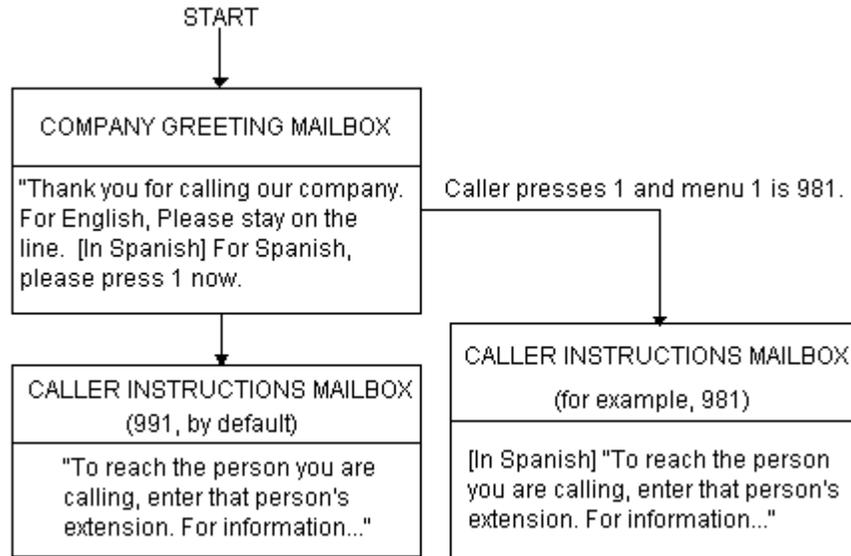
This example illustrates how you can completely over-ride Amanda’s standard processing.

Amanda has the ability to support multiple languages simultaneously on any port. The only requirements are that you install an alternative language prompt file and you configure the mailboxes to allow a caller to change to the alternate language. Additionally, you can control which mailboxes a caller has access to when they select a specific language.

Application

Let’s start by allowing a caller to select outgoing greetings in a different language. When a call is answered by Amanda, processing begins at the Company Greeting mailbox (which is 990 by default.) After the greeting is played, processing (by default) continues at mailbox 991 which plays the caller Instructions. During either the Greeting (990) or the Instructions (991) you can give the caller the option to press a digit to hear the Instructions in a different language. When the caller enters the language digit, Amanda should then be configured to access another mailbox that contains the proper Instructions using the Token Programming Language.

The following diagram helps illustrate this:

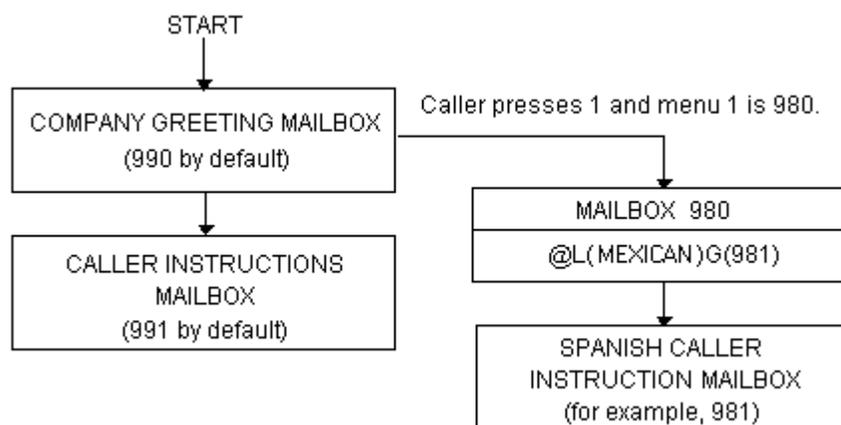


This now gives your callers the option to hear their instructions in the language of their choice (realize that you can have additional language selections as additional menu choices). However, after the caller selects Spanish by pressing 1, when they access a mailbox, Amanda still says in English, “Please hold while I try that extension.” We have changed which language instructions a caller hears, but we still have not changed which language system prompts the caller hears. To change the system prompts to another language we must use tokens (and of course have installed the appropriate language prompts).

Using Amanda’s Tokens

The token to change system prompts is L(). To change to the Mexican Spanish system prompts, use L(MEXICAN) provided that the Mexican Spanish system prompts file resides in the Amanda directory and is named MEXICAN.IDX (because your system has a Brooktrout voice board). Argentinian Spanish is ARGENTIN.IDX.)

To accomplish this, we could use another mailbox that changes the system prompts to Mexican and then continues processing with the Spanish Caller Instructions as follows:



mailbox 980's *Extension* field contains the tokens @L(MEXICAN)G(981) which causes Amanda to:

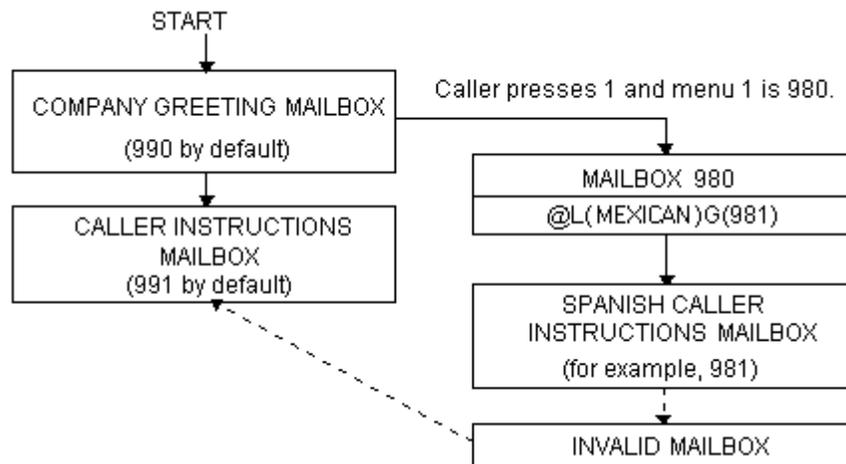
1. Not put the caller on transfer hold
2. Change the system prompts to the file "MEXICAN"
3. Continue processing at mailbox 981.

NOTE: There are several ways this same activity could have been accomplished. For example, instead of using the G(981) token, mailbox's RNA Chain could have had 981 in it. (We use the RNA Chain, since Amanda returns Ring No Answer after successfully performing the tokens in the Extension field).

Another Consideration

This works for most situations. However, there is one final consideration. What happens if the caller enters an invalid extension or choice? By definition, an invalid mailbox has no Done Chain. As a result, Amanda defaults to using the Done Chain of the Company Greeting mailbox on that port.

The following diagram illustrates this:



The result is that a caller, who has selected Spanish and entered an invalid mailbox, eventually ends up at the English Instruction mailbox!

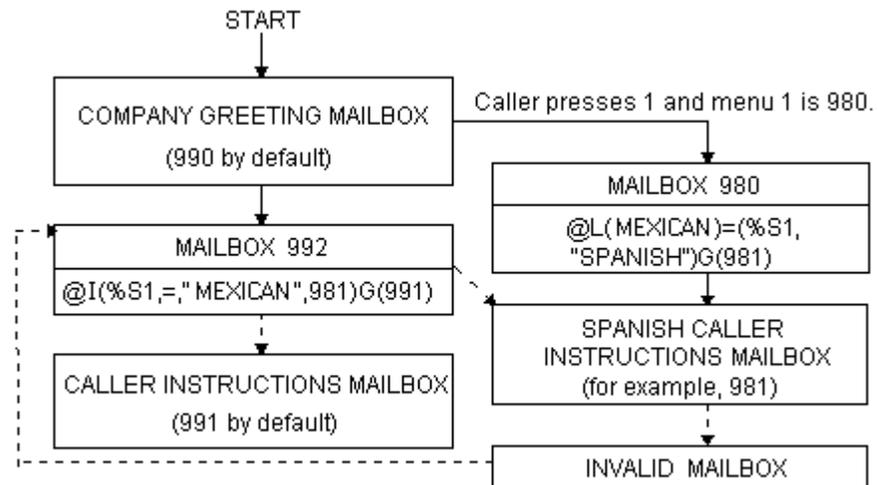
To have callers always access the proper language Instruction mailbox, you can add a control structure to Amanda. In this example, we might perform the following:

1. If an alternate language is selected, remember which language was selected.
2. Before playing the default Instruction mailbox, determine which language Instruction mailbox should play and continue processing at that mailbox.

Using Amanda's Tokens

This could be accomplished with tokens as follows:

1. To remember that a specific language was selected, we could use a storage (variable) token such as %S1 to have a value that represents the language. To assign %S1 a value, we use the =() token. For example, =(%S1 , "MEXICAN") stores the value "MEXICAN" into %S1.
2. To determine which language Instruction mailbox to access, we could use the I() token, often called the If token, which allows Amanda to continue processing at the correct mailbox. For example, I(%S1 , = , "MEXICAN" , 981) checks the value of %S1 for "MEXICAN" and if it matched, then continues processing at mailbox 981 (the Spanish Caller Instructions mailbox in this example). Finally, to make sure that this occurs before playing the default Instruction mailbox (in this example mailbox 991) we need to insert this control mailbox between the Company Greeting mailbox (990) and the Instruction mailbox (991) as follows:



This configuration now changes Amanda's standard processing and keeps the caller connected to the correct language Instruction mailbox. It works because whenever a new call is answered, Amanda initializes the %S tokens to "" (the empty string). Therefore, if the caller never presses 1 for Spanish, then %S1 is never set to the value "MEXICAN" and control is always passed on to mailbox 991 from mailbox 992.

Retrieving Order Shipment Information

This example uses obtaining shipment information to illustrate how you can interact with data files to retrieve useful information that is given to callers by request.

Application

The application is as follows:

1. Ask the caller to enter an order number (let's assume that it is five digits).
2. Determine whether or not the corresponding order has shipped.

3. If the order has not shipped, inform the caller. Otherwise, tell the caller the date the order was shipped.

In order for Amanda to determine an order's shipped status and its ship date, the system needs to retrieve information from some source. One possible way the system can obtain the data is by using the serial, S(), token to request it from another computer. An alternative solution is to access the information by looking in a file on Amanda's hard disk (or alternatively, a network server). For this example, we use the second implementation and assume that the following files exist on Amanda's hard disk in the root directory.

SHIPPED - An ASCII text file with order numbers that have been shipped (one per line), for example:

```
11111
22222
33333
12345
```

SHIPDATE - An ASCII text file where each line contains an order number and its ship date separated by a comma (one per line), for example:

```
11111,06301994
22222,07011994
33333,07061994
12345,07121994
```

Translating to Amanda's Tokens:

1. To ask the caller for an order number, use `R(G1,%S1,20)` where Greeting 1 has the recording "Please enter the five-digit order number now." After the caller enters the order number, Amanda can perform some additional checking. For example, to determine if a five-digit order number was entered, use `I(LEN[%S1],!,5,mailbox)`. If the number of digits stored in %S1 is not equal to 5, Amanda continues processing with mailbox *mailbox*.
2. To determine whether or not the order shipped, you examine the file SHIPPED to find out if it contains the caller's order number. Use `?(%S1,C:\SHIPPED,mailbox)` to find out whether or not a string (%S1), which contains the order number, is in a file SHIPPED. If it is, Amanda continues processing with mailbox *mailbox*.
3. If the order number is not in the file SHIPPED, Amanda continues processing at the token after the ?() token. Therefore, to tell the caller that an order has not shipped, you use `P(G1)` where Greeting 1 plays, "Sorry, but your order has not yet shipped, please call back tomorrow." To tell the caller the order's ship date, first determine that date using `V(C:\SHIPDATE,1,%S1,2,%S2)`, which scans the first column of the file SHIPDATE for the value in %S1. After finding the first match, Amanda stores the value in the second column as %S2. Then you use `P(G1)P(%S2,D)` to tell the caller the date. Here Greeting 1 plays, "Your order was shipped on."

Summary

To summarize the above, the mailbox settings and tokens are as follows:

mailbox	Extension/Recording	Done Chain
2000	@R(G1,%S1,20) I(LEN[%S1],!,5,2001)G(2002)	
2001	“Your order number must be five digits. Good-bye.”	999
2002	@?(%S1,SHIPPED,2003)P(G1)	999
2003	@V(SHIPDATE,1,%S1,2,%S2) P(G1)P(%S2,D)	999

Allowing One-call and Two-call Faxbacks

You can use fax files and the token programming language to perform one-call and two-call faxbacks. Most of this functionality is preconfigured for you inside Amanda using specific mailboxes.

A one-call faxback is a call from a fax machine so that a document can be faxed to the caller at that fax machine. Unless you have a toll-free telephone line, the faxing is at the caller's expense.

A two-call faxback requires two calls. Someone calls from his telephone, indicates what documents to fax, and leaves his fax number. Amanda calls the fax machine and sends the documents. This second call is at your expense, so you may want to do two-call faxbacks only in your area code or under other special circumstances.

You must have already installed and configured an appropriate fax modem for Amanda before the following examples can work.

Sending Faxes to Amanda

Before you can send faxes from Amanda, the data to be faxed must be stored on the hard drive. Because Amanda uses a proprietary fax format, you must fax the data to her. You can set up a mailbox to do both of the following:

- Receive the data that you fax to Amanda
- Store the faxes with numbered names in the C:\FAX directory, from which they can be used in one-call and two-call faxbacks

You can also create the documents to be faxed using Amanda Fax. Copy those documents to Amanda using Amanda Monitor. For more information about Amanda Fax, see *Using Amanda@Work.Group Workstation Features*.

If you decide to use a fax machine and a mailbox, the mailbox that performs these tasks must have:

```
Extension Field: @R(G1,%S1,30)J("C:/FAX/%S1","","%X%FH")G(999)
DND:            OFF
Screen Calls:   OFF
```

Store Messages: YES

Greeting 1: Please enter the number of the fax that you are sending new.

%S1 must not be used in any other application.

%X must be defined in 1001.PBX.

%F must be the extension that is physically connected to the fax modem and must be set in the install.cfg file, the file controlled by the Setup utility.

Do not enter more than eight digits in response to this greeting (because of DOS naming conventions). The number you enter becomes the name of the file. For example, if you type in 32, the fax is stored as C:\FAX\32.

NOTE: You must have created the C:\FAX directory previously. Amanda does not create this directory for you.

One-call Faxback

To set up a one-call faxback, you need to use one mailbox for each document. If you have no more than ten documents, you need only one mailbox for the greeting that supplies the menu of available documents.

The following example assumes that you have three documents and uses only four mailboxes. The documents are named TECH1, TECH2, and TECH3 to represent technical reports #1 through #3. They are stored in C:\FAX. It uses mailboxes 92000 to 92003, but you can use any mailboxes.

Mailbox 92000 contains the menu. It should have the following settings and greetings:

Extension Field: blank

DND: ON

Store Messages: NO

Greeting 1: If you are calling from your fax machine, please press the number corresponding to the technical report you are interested in. For report #1 on SMDI, press 1. For report #2 on Service Plans, press 2. For report #3 on Upgrading Voice Boards, press 3.

Menu 1: 92001

Menu 2: 92002

Menu 3: 92003

Mailbox 92001's Extension field contains the tokens that send technical report #1.

Extension Field: @T('C:/FAX/TECH1',' ','P(G1)%X%FH')

DND: OFF

Store Messages: NO

Greeting 1: Please press the start button on your fax machine at the tone.

Mailbox 92002's Extension field contains the tokens that send technical report #2.

Extension Field: @T('C:/FAX/TECH2',' ','P(G1)%X%FH')

DND: OFF

Store Messages: NO

Greeting 1: Please press the start button on your fax machine at the tone.

Mailbox 92003's Extension field contains the tokens that send technical report #3.

Extension Field: @T('C:/FAX/TECH3',' ','P(G1)%X%FH')

DND: OFF
 Store Messages: NO
 Greeting 1: Please press the start button on your fax machine at the tone.

NOTE: All the quotation marks in these token examples are single quotation marks (although double quotation marks can be used). Forward slashes are used (although double backward slashes \\ can also be used with this token).

Two-call Faxback

This example allows the caller to select one or more fax documents, and leave his fax number. The steps are as follows:

1. Request the fax area code (this is to determine whether or not to set up for long distance dialing).
2. Confirm the area code. If it is not confirmed, go back to step 1.
3. Request the fax telephone number.
4. Confirm the telephone number. If it is not confirmed, go back to step 3.
5. Give the caller the fax document selections and allow him to make more than one selection. In this example, the documents are named TECH1, TECH2, and TECH3 to represent technical reports #1 through #3. The files are stored in C:\FAX.

Mailbox 1000's Extension field is programmed to ask the caller for his area code and store the DTMF tones entered by the caller as the variable %S1. Next it says the numbers that were entered by the caller so the caller can confirm, reenter, or exit the faxback routine.

Extension Field: @R(G1,%S1,20)P(G2)P(%S1)M(G3,2,30)

DND: OFF

Store Messages: NO

Greeting 1: Please enter the area code of your fax machine now.

Greeting 2: You entered area code:

Greeting 3: If this area code is correct, press 1 now.
 If this area code is not correct and you want to re-enter it, press 2 now.
 If you do NOT want to have documents faxed to you, press 3 to exit.

Menu 1: 1001

Menu 2: 1000

Menu 3: 991

Mailbox 1001's Extension field contains the tokens that determine whether or not the entered area code is local (assuming that the local area code is 714). If the area code is not local, it stores the long distance dialing digit '1' in the variable %S0.

Extension Field: @I(%S1,='714',1002)=(%S0,'1')G(1003)

DND: OFF

Store Messages: NO

If the area code is local, **mailbox 1002**'s Extension field sets both the long distance dialing string and the area code string to " (the empty string).

Extension Field: @=(%S0,'')=(%S1,'')G(1003)

DND: OFF

Store Messages: NO

Mailbox 1003's Extension field contains the tokens that request the fax telephone number and stores it in the variable %S2.

Extension Field: @R(G1,%S2,40)P(G2)P(%S2)M(G3,2,30)

DND: OFF

Store Messages: NO

Greeting 1: Please enter the telephone number for your fax machine now.

Greeting 2: You entered the fax telephone number:

Greeting 3: If this fax telephone number is correct, press 1 now.
If this number is not correct and you want to re-enter it,
press 2 now.
If you do NOT want to have documents faxed to you,
press 3 to exit.

Menu 1: 1004

Menu 2: 1003

Menu 3: 991

Mailbox 1004 contains a menu that lists the available documents. It should have the following settings and greetings:

Extension Field: @<('9,%S0%S1%S2')M(G1,2,30)

DND: OFF

Store Messages: NO

Greeting 1: Please press the number corresponding to the technical report you are interested in. For report #1 on SMDI, press 1. For report #2 on Service Plans, press 2. For report #3 on Upgrading Voice Boards, press 3.

Menu 1: 10041

Menu 2: 10042

Menu 3: 10043

Mailbox 10041's Extension field contains the tokens that send technical report #1.

Extension Field: @P(G1)>('C:/FAX/TECH1')G(1005)

DND: OFF

Store Messages: NO

Greeting 1: The technical report on SMDI will be faxed to you.

Mailbox 10042's Extension field contains the tokens that send technical report #2.

Extension Field: @P(G1)>('C:/FAX/TECH2')G(1005)

DND: OFF

Store Messages: NO

Greeting 1: The technical report on service plans will be faxed to you.

Mailbox 10043's Extension field contains the tokens that send technical report #3.

Extension Field: @P(G1)>('C:/FAX/TECH3')G(1005)

DND: OFF
Store Messages: NO
Greeting 1: The technical report on upgrading voice boards will be faxed to you.

Mailbox 1005 allows the caller to select another document to be faxed or to end the call (Menu 2 goes to 999). You might prefer to have Menu 2 return to the caller instructions mailbox 991.

Extension Field: blank
DND: ON
Store Messages: NO
Greeting 1: To request an additional document, press 1; to exit, press 2.
Menu 1: 1004
Menu 2: 999

NOTE: All the quotation marks in these token examples are single quotation marks (although double quotation marks can be used). Forward slashes are used (although double backward slashes `\\` can also be used with this token).

Using IVR and Voice Form Applications

This section provides guidelines for writing effective IVR (Interactive Voice Response) and voice form applications. It also provides examples of how to use Amanda's menus, greetings, and messages as well as the Q(), M(), R(), and P() commands from Amanda's Token Programming Language.

Before you start, determine whether your application will be used by infrequent users, expert users, or both.

You might need to design a training mode (which explains the choices—perhaps using a different voice for the explanations) and an expert mode (which offers minimal explanation).

Consider using short-cut options that allow expert users to access information more quickly.

Also think about the average user's vocabulary and familiarity with similar systems as well as the type of telephone he will use and the location from which he will probably call. For example, don't use technical terms with non-technical users. If you expect users to call from pay telephones, the noise around them might make voice response a poor choice.

Making the User Comfortable

To make users feel that they are in control of the application rather than at the mercy of it, the greetings should perform the following tasks in order:

1. Identify the company or service so that the user can determine whether he has placed his call correctly.
2. Identify the application as non-human so that the user does not expect human interaction.

For example, avoid personal pronouns in phrases. Use “Please enter the number” rather than “tell me the number.”

3. If necessary, separate callers using touch-tone telephones from those using dial-pulse telephones.

Use something similar to “If you are calling from a touch-tone phone, please press 1 now. Otherwise, please remain on the line. An attendant will help you.”

4. Early on the first menu, offer the user access to a human attendant.
5. Offer access to a human attendant and call termination on each menu level.
6. Customize the greetings for the user.

For example, if the user has only three of the five services you offer, never offer him the option of adding the services that he already has or the option of canceling the services that he does not have.

Using Greetings

The greetings used in your application will fall into the following categories:

- Menus that list options from which the users make selections
- Requests for responses
- Informational—providing answers to users’ requests or other user feedback

Using Menus

As you create your menus, do the following:

- Find logical topics for menus
- Offer topics in order: most likely to be selected to least likely. Make an exception to this rule when the topic itself contains a number.

For example, use “To order the Series 3, press 3” rather than “To order the Series 3, press 1”—even when your most popular sales item is Series 3.

- Limit the number of options on each menu. If a menu contains more than eight options (including reaching an attendant, returning to previous menu, and exiting), break this menu into submenus.

Word your menus carefully using the following suggestions:

- State the result before the action.

For example, use “For Accounts Payable, press 1” rather than “Press 1 for Accounts Payable.”

- Be consistent from option to option and menu to menu.

For example, use “Please make your selection now” on each menu level to indicate that all the menu options have been offered.

- Use “Press” for a single-digit response or “Enter” for multi-digit response.
- Say the number on a key rather than a letter on that key—even if the letter is more significant.

For example, say “Press 3” rather than “Press F.”

Making Requests

Requests to users fall into the following categories:

- Request for single-digit response (such as 1 for Yes or 2 for No)
- Request for multi-digit response such as a telephone or credit card number
- Group of questions that comprise a voice form

For example, you might ask the user a series of questions, the answers to which are essentially the fields on a paper form. These voice responses are saved as messages.

For single-digit responses, you can use a greeting as a menu.

For multi-digit responses, you can use the R() command to convert the DTMF tones to an ASCII number.

For voice forms, you can use the Q() command to save the responses for up to 20 questions as a message.

NOTE: Amanda can store a total of 65,536 voice message files. However, each of the up-to-20 questions in the Q() command count is stored in a separate voice message file, even though Amanda treats all the questions as one “message”. That means that a message total does not have to reach 65,536 to exceed the allowable number of files for voice messages. For example, a message total of 3276 could use every file available for storing messages—if each of those “messages” contains 20 responses to the questions in a Q() command.

Word your requests carefully using the following suggestions:

- Use consistent wording.
For example, use “Please” to indicate that a request is coming.
- Make it clear what type of input is expected from the user (keypad input or voice response).
For example, use “At the tone, please say your last name” or “On your touch-tone phone, please enter the letters of your last name.”
- Use “Press” for single choice, “Enter” for data, and “Say” for voice response.
For voice response, end the request with “now” or start it with “At the tone, please say...”—whichever is appropriate.

Providing Information and Feedback

Be sure to provide some type of feedback for every user action and allow users to reverse unintended operations. For example, you can:

- Repeat the data provided by the user.
For example, you can use the P() command to play the telephone number stored by the R() command or use the Q() command to give the caller the opportunity to edit (review, rerecord, append, or cancel) answers to questions on a voice form.
- Request confirmation.
- Play a greeting that indicates that the application has moved on to the next step.
- Repeat the current greeting when there is no response. If there is still no response, provide a message explaining what is happening and either connect the call to an attendant or disconnect it.

- Play an error message, status message, or tone.
Status messages, such as “We are still processing your order” should play after the first two seconds and then every seven to ten seconds.
For an error message, provide a retry greeting (and perhaps suggest a remedy) before repeating the current greeting. Be sure to notify the user when returning to the main menu or transferring the user to an attendant after an error.

Word your informational greetings carefully using the following suggestions:

- Don't say Standard Time unless you do not shift to Daylight Savings Time.
For example, on the west coast, say “Pacific Time.”
- Be brief. When that is impossible, allow the user to listen to the greeting again.
- When providing a telephone number, always repeat it.
- Eliminate unnecessary words.
For example, use “Please press 1 ‘Yes’ or 2 for ‘No’” rather than “Please press the key with the 1 on it for ‘Yes’ or the key with the 2 on it for ‘No’.”
- When pairing opposite phrases, use words that sound differently.
For example, avoid pairing Turn On and Turn Off because they sound so much alike.
- Don't use open-ended or ambiguous questions.
For example, use “Do you have your account number?” rather than “Have your account number ready.”
- Be polite, non-judgmental, and avoid humor.
For example, use “That password is invalid” rather than “You entered the password incorrectly.”

Using the Telephone Keypad

If the users enter their choices via the telephone keypad, follow these guidelines:

- Assign keys consistently. This is especially true for Delete and other destructive options.
For example, don't use 3 for Delete on one menu and Save on another.
- Offer alternates to * and # keys because those keys might be disabled.
- Use keys 1 and 2 for the most frequently selected options. Users expect to use the 1 and 2 keys most often.
- Avoid using keys 1, 2, 5, and 8 as destructive options.
You might want to avoid 5 and 8 entirely as they are the most error-prone key choices. (These two keys are the only ones with a key in each direction.)
- Use the rows and columns of the keypad effectively.
- Use the left column for actions that precede or are lower than others.
- Use the right column for actions that follow or are higher than others.
For example use a number in the left column to lower a volume and the corresponding number in the right column to increase a volume.
- Consider using a key in the top row as a response to a greeting that says “Go to the top” and a key in the bottom row in response to “Go to the bottom.”

Choosing Tokens

A number of commands from the Token Programming Language make IVR easier and voice forms possible.

To present a menu for your caller, you can use:

- The menu fields associated with the mailbox. The mailbox allows the caller to enter either a one-digit response to the menu or another mailbox. Amanda waits long enough to be sure that the caller has finished. (For this method, turn Do Not Disturb ON.)
- The M() command. In this case, Amanda waits for only one digit. It is faster than using menu fields, but it does not allow the caller to enter a mailbox with more than one digit. (For this method, turn Do Not Disturb OFF.)

To convert the DTMF (or touch) tones entered by the caller into a number, use:

- The R() command, which stores a number in a variable.

To play a greeting or play back the number stored by the R() command, use:

- The P() command. This command has many variations. See the “Token Reference” on page 128 for details.

To play up to 20 questions (from greetings) and store the answers as a single message, use:

- The Q() command, which also allows the caller to edit the responses.

Using Tokens

This example describes parts of an application that records consumer reactions to sample products. For example, hair stylists may be mailed information about a line of new hair care products.

If interested, a stylist can call an 800 number to request a sample of one of them. The sample is mailed along with product literature and a test ID that uniquely identifies the stylist with the product.

After using the product, the stylist calls again to answer a series of questions. For services rendered, the stylist is mailed a small fee or a free case of the product.

Later, the survey company analyzes the data and reports back to the manufacturer. The application has two parts:

- Gathering information about a potential tester, such as name, address, telephone number, and the product to be sent
- Quizzing the testers about the product

The tester information part (explained in “Gathering Testing Information” on page 182) uses:

- Menus using the M() command and 0 to reach a live attendant at any time.
- The P() command to play a general greeting.
- The R() command to request a telephone number, convert the DTMF tones entered by the stylist, and store the telephone number in a variable.
- The |() command (that’s the pipe command or vertical bar command) to add data about the stylist to a database file.
- A series of greetings that ask for the parts of an address. The Q() command plays the greetings and allows the stylist to edit the responses before they are saved as a message.

The quiz part (not explained) uses:

- Menus using the M() command, using 0 to reach a live attendant at any time.
- The R() command to request the test ID, convert the DTMF tones entered by the stylist, and store the ID in a variable.
- The N() command to look up the test ID in a database file. The database determines what set of questions to ask the stylist. It also contains a field indicating how many calls have come in using this test ID. Only one call should come in for each ID. If a stylist never calls in, an employee can call that person. If a stylist calls more than once (hoping for extra free cases of the product or whatever), an employee talks to the stylist personally, assuming some error has occurred.
- The Q() command to play a series of questions (greetings), allows the stylist to edit the responses, and stores the set of responses as a message.

Gathering Testing Information

Mailbox 880 handles all calls coming in on the 800 number and immediately passes the call to the caller instructions mailbox 881 (via the Done Chain).

Mailbox 881 has:

Extension Field: @M(G1, 2, 30)G(0)

Amanda plays the menu in Greeting 1. If there is no response from the caller, Amanda plays Greeting 1 again after a three-second pause. If there is still no response, Amanda executes the next token in the Extension field (which goes to the operator).

DND: OFF

Store Messages: NO

Greeting 1: To become one of our testers, press 1. If you are already one of our testers and you want to answer a product questionnaire, press 2....

Menu 1: 1000

Menu 2: 2000

Menu 0: 0

Mailbox 1000 has:

Extension Field: @P(G1)Q(G2, G3, G4, G5, G6, G7, G1#1001, E)R(G2#1001, %S1, 30)G(1001)

Amanda plays Greeting 1 from mailbox 1000 to welcome the tester and to give an overview of the process.

Then Amanda asks for the stylist's mailing address using a series of greetings and recording the answers as one message.

Next Amanda asks for a telephone number and stores it as a variable (%S1).

(It would be a good idea to play this number back to the stylist and allow reentry, but this example does not do that. See how this is done in "Two-call Faxback" on page 175.)

Finally, the call is transferred to mailbox 1001.

DND: OFF

Store Messages: YES

Greeting 1: Welcome to....

Greeting 2: Please say your last name now.

Greeting 3: Please say your first name and middle initial now.

Greeting 4: Please say the name of your business now.

Greeting 5: Please say your street address now.

Greeting 6: Please say your zip code now.

Greeting 7: Please say the name of your city now.

Greeting 1 of mailbox 1001: Please say the name of your state now.

Greeting 2 of mailbox 1001: Please use your telephone keypad to enter a daytime telephone number where we can reach you if necessary. Please start now.

Mailbox 1001 has:

Extension Field: @=(%S2 , %M(1000))M(G3 , 2 , 30)G(0)

%M[1000] is the number of messages stored in mailbox 1000.

Amanda stores this number in a variable (%S2). This message number becomes associated with the stylist for the duration of the survey.

Then Amanda plays the menu in Greeting 3. If there is no response from the caller, Amanda plays Greeting 3 again after a three-second pause. If there is still no response, Amanda executes the next token in the Extension field (which goes to the operator).

NOTE: Using the message number to uniquely identify the tester works only because no messages will be deleted from mailbox 1000 until after the survey. If you will have more messages than disk space, keep a number in another file. Read the number using the [() command, increment it by one with the +() command, and write the new number (for the next tester) back to the file using the]() command.

DND: OFF

Store Messages: NO

Greeting 3: Please select one of the following products....

Menu 1: 1002

Menu 2: 1003

... other menu options ...

Menu 0: 0

Mailboxes 1002, 1003, ... have:

Extension Field: @=(%S3 , %S2)+(10000 , %S3)

| (C : \ \ T E S T E R S \ \ T E S T X . T X T) P (G 1) G (9 9 9)

Next Amanda makes a copy (%S3) of the message number (which identifies the stylist) and adds 10000 (or some other product differentiating number) to it. This becomes the test ID.

Then Amanda appends the stylist's telephone number (%S1), message number (%S2), and product number (%S3) to a database file (C:\TESTERS\TESTX.TXT).

Finally, Amanda plays Greeting 1 from the current mailbox and hangs up. (It would be a good idea to have the user verify that the stylist did indeed want this product or return to mailbox 1001, but this example does not do that. You would play a greeting naming the product and ask the stylist to confirm, similar to reconfirming the telephone number in Example 4.)

DND: OFF

Store Messages: NO

Greeting 3: Thank you for agreeing to test product such-and-such. You will be receiving...within 10 days. Please try the product and call this system again to answer a few questions about it....

Chapter 12: Installing the Clients

Introducing the Clients

Amanda's Windows 3.11 client applications also run on Windows 9x, Windows NT, and Windows 2000.

Amanda Administrator	Windows 3.11. Allows the Amanda system administrator to set up mailboxes and perform other system functions.
Amanda Monitor	Windows 3.11. Allows the Amanda system administrator to monitor the Amanda system.

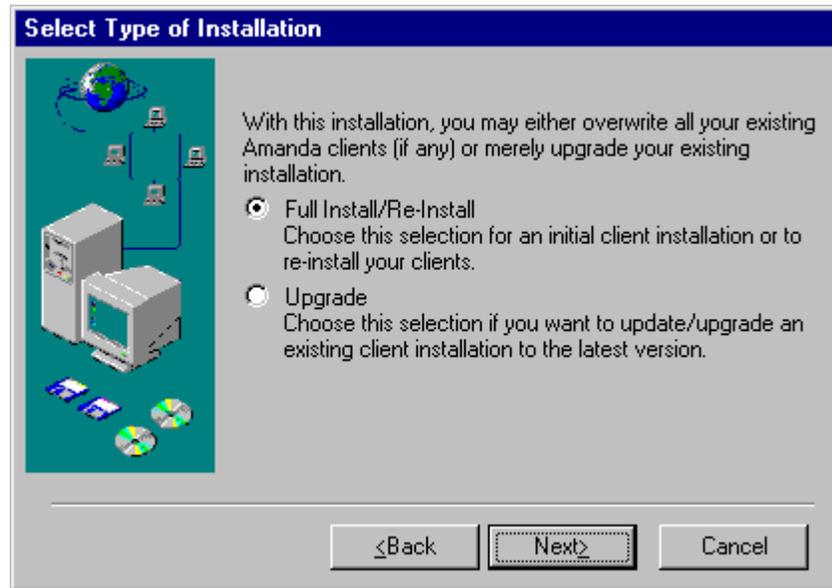
Installing the Administrative Clients

Now that the Amanda is up and running properly, you may install Amanda clients on user workstations. For information about installing the other clients, see *Using Amanda@Work.Group/Windows Workstation Features*.

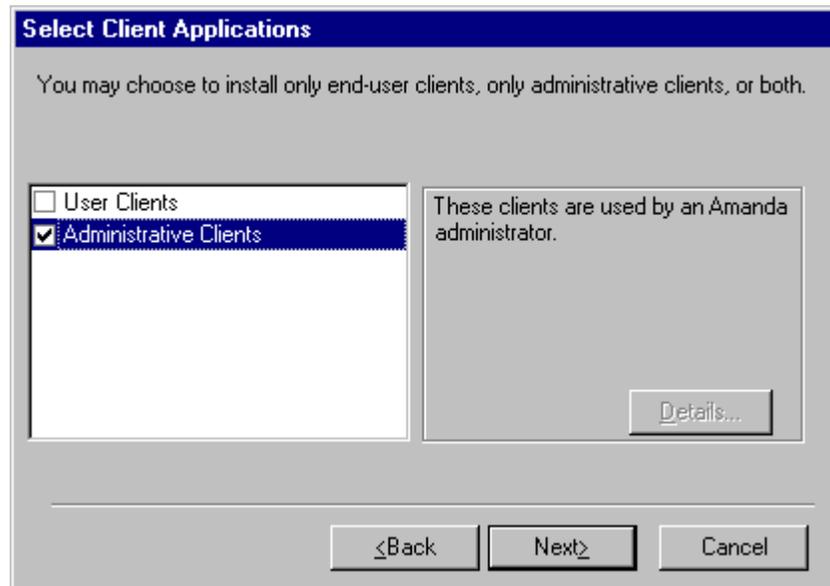
To install the administrative clients:

1. When Amanda Voice Server was installed, the installation program was placed in a shared folder on the server. From the Amanda@Work.Group/Windows server, run Clients\ClientInstall.exe.
The Welcome dialog appears.
2. Click Next>.
The Select Client Folder dialog box appears.
3. Use the default path (C:\AMACLNTS) or type (or browse for) another path in the Folder text box.
4. Click Next>.

The Select Type of Installation dialog box appears.



5. Select either the Full Install/Re-Install or the Upgrade option button the click Next>.
The Select Client Applications dialog box appears.



6. Only for Amanda system administrators' workstations: Select the Administrative Clients check box to install Amanda Administrator and Amanda Monitor.
7. Click Next>.
The Select Program Group dialog box appears.
8. Use the default group (Amanda) or type a new group name in the text box.

9. Click Finish.

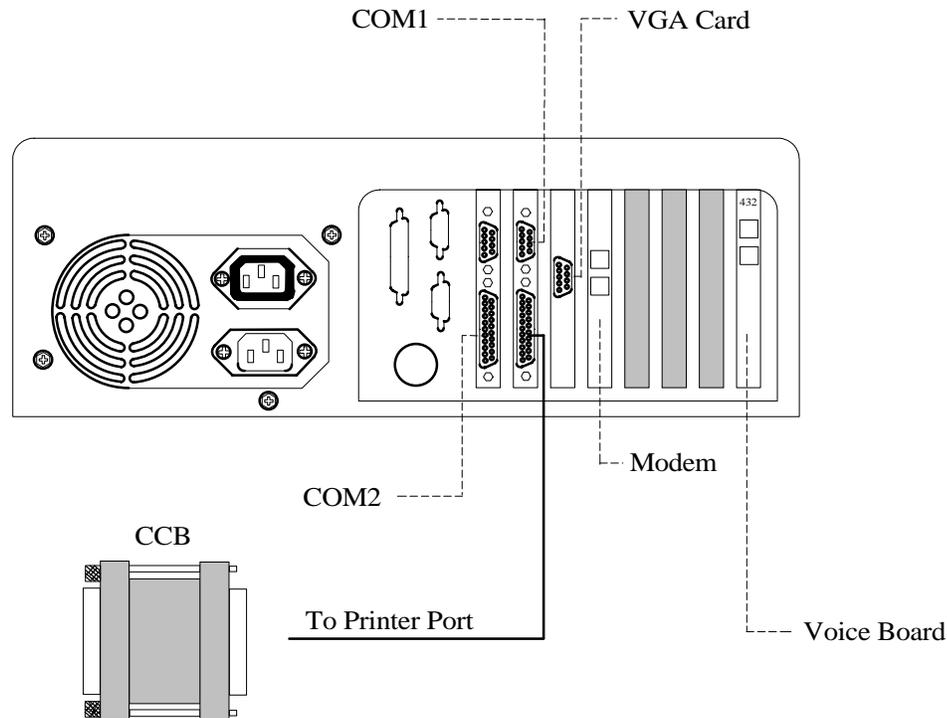
The Finish the Installation dialog box appears.

10. Click OK.

Adding Client Connections

Now that users have the Amanda@Work.Group/Windows clients, you must add the appropriate number of Client Connections to the Amanda Voice Server. Ten client connections come with Amanda Voice Server. With ten client connections, ten users can log on to the Amanda server at a time.

Adding client connections requires a Client Connection Bank (CCB) with at least as many connections as you wish to install at this site. This CCB is an Aladdin Hardlock.



To add client connections:

1. Stop the Amanda Service.
2. Install the CCB driver from the Amanda CD (Hldr32.exe).
3. Click **Start**⇒**Programs**⇒**Amanda Server**⇒**Client Activation**.

If your CCB is connected to LPT1 and the hardlock drivers were installed, the Client Activation window appears.

The window will show you the number of clients currently activated (this will not include the ten clients that come with the system) as well as the number of clients on the CCB available for activation.

4. Enter the number of client connections you wish to activate from the CCB in the Number Of Clients To Activate text box.
5. Click OK to finish.
6. Restart the Amanda Service.

The Amanda voice server's install.cfg configuration file is updated so that the new number of client connections is available when you restart Amanda.

This affects the value of the `n_clients` and `client_activation_key` configuration options.

Reviewing Client Connections

Each time a user logs onto Amanda Messenger or Amanda Dialer, or the system administrator logs onto Amanda Administrator or Monitor, he acquires a client connection. When he logs off, the client connection is returned to the pool and is available for the next person who logs on. As more users log into Amanda, some users may not be able to log on because all client connections are in use.

To display the maximum number of clients Amanda is configured for:

1. From the Start menu, select **Start⇒Programs⇒Amanda Server⇒Setup**.

The Amanda Setup dialog box opens, displaying the Global Settings parameters.

2. Scroll the list box until you see the `n_clients` parameter.

The value for `n_clients` is the maximum number of clients the Amanda server currently accepts. Do not edit this value.

NOTE: The value for `n_clients` does not include the ten client connections which come with the system. It indicates the number of clients that have been activated. The actual number of users who can connect to the Amanda server via client programs is the value of `n_clients` plus ten. Do not edit this value.

Chapter 13: Configuration Reference

Overview

This chapter divides the configuration parameters into the groups in which they appear in the Setup utility. Then it explains each parameter. Within each group, the Parameters appear in alphabetical order.

Global Settings

Parameter	Description
abbreviate_dates	<p>Controls how Amanda says the date for a message dated today or yesterday. True or False. The default is True.</p> <p>When True, Amanda says “today” or “yesterday” instead of the actual date, for example, “November 27th, 1996.”</p> <p>When False, Amanda says only the actual date, such as “November 27th, 1996.”</p> <p>The default appears in install.cfg as: set abbreviate_dates true</p>
abbreviate_greeting	<p>Allows you to shorten the system greeting. True or False. The default is False.</p> <p>When True, Amanda says, “Please leave a message at the tone.” This is the shortened version of the system greeting.</p> <p>When False, Amanda says, “Please leave a message for” followed by the name and extension recording. This is the usual default version of the system greeting.</p> <p>The default appears in install.cfg as: set abbreviate_greeting false</p>
activation_key	<p>A number you receive from an Amanda Company sales representative to activate your system. You must set this parameter if one or more of your voice boards were not purchased from The Amanda Company.</p> <p>If you change or add a board later, you need another activation key because the key is based on the serial numbers for all of the boards and the total number of ports.</p> <p>The default is 0, which means there is no activation key.</p> <p>The default appears in install.cfg as: set activation_key 0</p>

Global Settings (Continued)

Parameter	Description
active_hold	<p>When the extension is busy, the caller can hold for the called party—actively or inactive-ly.</p> <p>True or False. The default is True.</p> <p>When True, Amanda is set up for active hold. The caller must continually indicate that he wants to remain on hold. Failure to continue to press * when prompted indicates that the caller is no longer interested in holding. If he doesn't enter another extension, he is asked for a message. Active hold is best for 800 numbers, support lines, or when Amanda is used as an Automatic Call Distribution (ACD) device. It prevents a caller from pressing * to go on hold and staying on hold indefinitely without further interaction. The caller presses * to go on hold and must press * periodically to stay on hold.</p> <p>When False, Amanda is set up for inactive hold. The caller indicates that he wants to be on hold only once. If the caller does nothing, Amanda retries the extension until it is no longer busy. The caller can also enter another extension or press * to leave a message. In this case, the user uses * to go on hold and * to leave a message.</p> <p>See also auto_queue.</p> <p>The default appears in install.cfg as: <pre>set active_hold true</pre></p>
adpcm_hq	<p>Sets the sampling rate for outgoing greetings. The higher the sampling rate, the better the sound quality, but also the more disk space used.</p> <p>24, 32, or 64. The default (and recommended value) is 64.</p> <p>NOTE: If you change this on an active system, all previously recorded outgoing greetings need to be re-recorded.</p> <p>The default appears in install.cfg as: <pre>set adpcm_hq 64</pre></p>
adpcm_nq	<p>Sets the sampling rate for incoming messages. The higher the sampling rate, the better the sound quality, but also the more disk space used.</p> <p>24, 32, or 64. The default (and recommended value) is 32.</p> <p>NOTE: If you change this on an active system, you should have users delete all their messages first.</p> <p>The default appears in install.cfg as: <pre>set adpcm_nq 32</pre></p>
adpcm_pq	<p>Sets the sampling rate for the system prompt file. This is set to the sampling rate at which the system prompt file was recorded.</p> <p>24, 32, or 64. Correctly set by default.</p> <p>NOTE: Do not change this unless you have installed the appropriate system prompt file.</p> <p>The default appears in install.cfg as: <pre>set adpcm_pq x</pre> where x is the correct setting for your prompt files.</p>

Global Settings (Continued)

Parameter	Description
always_report_queue_position	<p>If a caller is on hold and is not the first in the queue of callers waiting for a busy extension, Amanda lets the caller know where he or she is in the queue. Amanda plays, “There are n calls ahead of yours.” just prior to playing the on-hold music. This configuration parameter determines whether the caller is notified that he or she is the first in the on-hold queue.</p> <p>True or False. The default is False.</p> <p>If True, Amanda plays, “There are 0 calls ahead of yours.”</p> <p>If False, Amanda plays only the on-hold music when the caller is the first in the queue.</p> <p>The default appears in install.cfg as: <pre>set always_report_queue_position false</pre></p>
auto_queue	<p>Designed for callers with rotary telephones so that they can be put “on hold” without having to press *.</p> <p>True or False. The default is False.</p> <p>If True and if active_hold is False, callers are automatically put “on hold” when they reach a busy extension. A custom busy message must explain what’s going on so that callers are aware that they are “on hold” and that they can dial other extensions—if they prefer.</p> <p>The default appears in install.cfg as: <pre>set auto_queue false</pre></p>
auto_report	<p>The name of a previously saved report file in the RPT.DB subdirectory within the AMANDA directory which can be executed and printed once each day. When not set, no auto reporting is done.</p> <p>Use the name of a report file with the extension .RPT. The default is an empty string which means that no report file is executed.</p> <p>To use this feature, verify the following:</p> <p>The parameter lpt_port must be set to the name of a printer</p> <p>The printer must be online and have enough paper</p> <p>See also auto_report_time and lpt_port.</p> <p>The default appears in install.cfg as: <pre>set auto_report ''</pre></p>
auto_report_time	<p>The time of day at which the report is to be printed (when auto_report is not an empty string).</p> <p>A time of day in 24-hour MMHH format. The default is 0745 (7:45 a.m.).</p> <p>See also auto_report and lpt_port.</p> <p>The default appears in install.cfg as: <pre>set auto_report_time 0745</pre></p>
auto_wrap	<p>Allows the user to wrap from the last message back to the first if all of the following are true and the user presses 1.</p> <p>This parameter is set to True.</p> <p>The play_new_first parameter is set to True.</p> <p>You’re on the last message in your message queue.</p> <p>You have more than one message.</p> <p>True or False. The default is False.</p> <p>The default appears in install.cfg as: <pre>set auto_wrap false</pre></p>

Global Settings (Continued)

Parameter	Description
beep_freq	<p>Specifies the connect tone's frequency in Hertz (Hz). The range is 300 to 3300. The default is 400.</p> <p>The default appears in install.cfg as: <code>set beep_freq 400</code></p>
beep_volume	<p>Specifies the volume of all beeps. The range is 0 to 32767. The default is 4096, which is a "normal" volume.</p> <p>The default appears in install.cfg as: <code>set beep_volume 4096</code></p>
begin_rec_prompt	<p>When record_menu is True, this parameter controls whether the caller hears Amanda prompts or only a beep when recording a message. This parameter has no effect on the post-record menu. If the caller presses #, the post-record menu indicates how to rerecord, append to, or save a recording.</p> <p>True or False. The default is True.</p> <p>When True, Amanda plays, "Begin recording at the tone, finish by pressing # or hanging up" before the beep.</p> <p>When False, the caller hears only a beep.</p> <p>See also record_menu and end_rec_menu.</p> <p>The default appears in install.cfg as: <code>set begin_rec_prompt true</code></p>
busycycles	<p>Minimum number of non-ringback cycles necessary before the Brooktrout driver notifies Amanda that the extension is busy.</p> <p>The default is 2 cycles. The range is 0 to 20. 0 means do not change the current Brooktrout setting (which is also 2 cycles).</p> <p>The default appears in install.cfg as: <code>set busycycles 2</code></p>
ca_file	<p>The file (in the C:\AMANDA directory) which stores call accounting (SMDR) data that comes from the port in ca_port. The data is collected from the telephone switching system, stored while Amanda runs, and then (after a shutdown) read by a call accounting package that analyzes and manipulates the data.</p> <p>Use any filename. The default is 'SMDR.DAT'.</p> <p>See also ca_port.</p> <p>The default appears in install.cfg as: <code>set ca_file 'SMDR.DAT'</code></p>
ca_port	<p>The number for the logical serial port that will read SMDR data from the switch while Amanda is running. The data is stored in the file specified by ca_file unless the number is 0, in which case no SMDR data is read.</p> <p>Use 0, 1, 2, 3, or 4. The default is 0.</p> <p>See also ca_file.</p> <p>The default appears in install.cfg as: <code>set ca_port 0</code></p>

Global Settings (Continued)

Parameter	Description
caller_id	<p>The number of seconds that the system waits for caller ID information after receiving a ring indication on the line and before answering the call.</p> <p>The range is from 0 to 255. 0 means that caller ID information is not expected and is the default.</p> <p>The captured data appears in the Subject line for outside calls reviewed with Amanda Messenger and Amanda Unified Messenger.</p> <p>The default appears in install.cfg as: <pre>set caller_id 0</pre></p>
cancel_busy_hold	<p>Determines whether callers can hold for a busy extension.</p> <p>True or False. The default is False.</p> <p>When True, busy becomes equivalent to Ring No Answer (RNA). That means that the caller cannot hold for a busy extension and can only leave a message once RNA or BUSY is the state of the called extension (assuming the mailbox accepts messages).</p> <p>When False, the caller can press * to hold for a busy extension.</p> <p>The default appears in install.cfg as: <pre>set cancel_busy_hold false</pre></p>
client_activation_key	<p>Activation key that validates the value specified by n_clients. It is normally generated automatically as the client connections are installed. If you change or add a board later, you need another activation key because the key is based on the serial number for the first board. The first board is based on its low I/O port number (the first Brooktrout board is usually 300H). Get the key from an Amanda Company sales representative.</p> <p>The default is 0, which means there is no client activation key.</p> <p>See also n_clients.</p> <p>The default appears in install.cfg as: <pre>set client_activation_key 0</pre></p>
cmt_maxlen	<p>Sets the total number of seconds allowed for recording a List Comment. The user can record a comment while creating a mailing list or later. It names or describes the contents of the list.</p> <p>Number of seconds. The range is from 1 to 99. The default is 10.</p> <p>The default appears in install.cfg as: <pre>set cmt_maxlen 10</pre></p>
connect_tone	<p>When an answer is detected and Amanda is not identifying the called party for the current mailbox, this parameter determines whether Amanda plays a beep. (On the Administrator client, the mailbox's Identify Called Party check box is cleared.)</p> <p>True or False. The default is True.</p> <p>When True, Amanda plays the beep.</p> <p>When False, there is no beep.</p> <p>The default appears in install.cfg as: <pre>set connect_tone true</pre></p>

Global Settings (Continued)

Parameter	Description
create_locked	<p>Controls whether or not new mailboxes are locked when the mailbox template (usually mailbox 997) is locked. The administrator (using mailbox 999 and the telephone) can lock the template (and other mailboxes) using one of the system administration parameters. This prevents callers from logging into the mailbox template.</p> <p>True or False. The default is False.</p> <p>When True, new mailboxes created from the template are initially locked if the template is locked.</p> <p>When False, new mailboxes are not locked. This means that they can be logged into via the telephone immediately after they are created.</p> <p>The default appears in install.cfg as: <pre>set create_locked false</pre></p>
db_locking	<p>Makes Amanda lock each record in a file as it is accessed. No other port or program can access that record of that file. This is used within the context of using tokens to read and write to ASCII or dBase files.</p> <p>The value is True or False. The default is False.</p> <p>When True, Amanda attempts to perform record locking which will fail unless SHARE.EXE, a DOS program (not licensed via The Amanda Company), is running. This program is usually loaded by the CONFIG.SYS or AUTOEXEC.BAT file.</p> <p>When False, Amanda does not perform record locking.</p> <p>The default appears in install.cfg as: <pre>set db_locking false</pre></p>
defaults_box	<p>Indicates what mailbox to use as a template when creating a new mailbox. The contents of most fields, all notification records, and all automatic scheduling records are copied from the template to the new mailbox. The Comment and Directory Name fields are not copied. The Extension field is copied only if it begins with an @ (which indicates token programming).</p> <p>If the Security Code field of the default mailbox is blank, the security codes for new mailboxes are their mailbox numbers. Otherwise, the security codes for all new mailboxes are the same as that of the template mailbox. The Security Code field always appears blank. You must fill it with spaces if you want it to actually be blank.</p> <p>Use any valid mailbox. The default is 997.</p> <p>See also guest_defaults.</p> <p>The default appears in install.cfg as: <pre>set defaults_box 997</pre></p>
dialer_max_port	<p>Specifies the highest Amanda telephone port to be considered for use when Amanda Dialer dials a number. The range is 0 to the highest port number available.</p> <p>The default is 0. When dialer_min_port and dialer_max_port are both 0, Amanda uses all ports.</p> <p>The default appears in install.cfg as: <pre>set dialer_max_port 0</pre></p>
dialer_min_port	<p>Specifies the lowest Amanda telephone port to be considered for use when Amanda Dialer dials a number. The range is 0 to the highest port number available.</p> <p>The default is 0. When dialer_min_port and dialer_max_port are both 0, Amanda uses all ports.</p> <p>The default appears in install.cfg as: <pre>set dialer_min_port 0</pre></p>

Global Settings (Continued)

Parameter	Description
did_dtmf	<p>Indicates what kind of integration digits Amanda reads when did_mode is True. True or False. The default is True.</p> <p>When True, Amanda expects either MF or DTMF digits.</p> <p>When False, Amanda expects the digits as pulse.</p> <p>See also did_mf and did_mode.</p> <p>The default appears in install.cfg as: <pre>set did_dtmf true</pre></p>
did_mf	<p>Determines what kind of integration digits Amanda reads when did_dtmf is True and did_mode is True. Otherwise, Amanda ignores this parameter. True or False. The default is False.</p> <p>When True, Amanda expects MF digits.</p> <p>When False, Amanda expects DTMF digits.</p> <p>See also did_dtmf and did_mode.</p> <p>The default appears in install.cfg as: <pre>set did_mf false</pre></p>
did_mode	<p>Indicates whether Amanda is using DID. True or False. The default is False.</p> <p>When True, Amanda expects a DID interface (such as EXACOM) that processes a hook-flash as battery reversal.</p> <p>When False, Amanda does not expect a DID interface.</p> <p>The default appears in install.cfg as: <pre>set did_mode false</pre></p>
dir_format	<p>Determines how names associated with mailboxes in the employee directory are formatted for the client applications. "%1" expands to the "Directory Name 1" field, "%2" to the "Directory Name 2" field, and "%c" to the "Comment" field. Other characters (such as space) are taken literally. The most common value is '%1 %2'.</p> <p>The default is '%1 %2'.</p> <p>The default appears in install.cfg as: <pre>set dir_format '%1 %2'</pre></p>
direct_login	<p>Controls whether the caller can call himself, and press an asterisk to hear the prompt for the security code. True or False. The default is False.</p> <p>When True, pressing a single asterisk (*) causes the caller to be prompted for the current mailbox's security code. This is useful in DID situations where the call has already reached his own box and is simply trying to log in.</p> <p>When False, pressing * has no effect.</p> <p>The default appears in install.cfg as: <pre>set direct_login false</pre></p>

Global Settings (Continued)

Parameter	Description
diskwarn	<p>When Amanda has only the specified percentage of disk space left, the system executes Disk notification record (if there is one) for mailbox 999. The notification record may call you at home, call your extension, call your pager, and so forth. For example, use 20 to have Amanda notify you when the remaining disk space falls below 20.</p> <p>Number (for a percentage). The range is from 1 to 99. The default is 20.</p> <p>See also tmo_disk.</p> <p>The default appears in install.cfg as: <pre>set diskwarn 20</pre></p>
dl_pickup	<p>If this string is defined and dl_pickup_on_ring is set to true, Amanda will dial the tokens in the dl_pickup string before beginning to process an incoming call.</p> <p>The default appears in install.cfg as: <pre>set dl_pickup ''</pre></p>
dl_pickup_on_ring	<p>When an inbound ring is detected and Amanda goes off-hook, this parameter determines whether Amanda dials the code specified by the dl_pickup parameter in the 1001.PBX file or the current dial codes file for that port.</p> <p>True or False. The default is False.</p> <p>When True, Amanda dials the code.</p> <p>When False, Amanda does not dial the code.</p> <p>The default appears in install.cfg as: <pre>set dl_pickup_on_ring false</pre></p>
dtmf_action dtmf_busy dtmf_dnd dtmf_ring dtmf_xfer tmo_xfer	<p>The dtmf_action, dtmf_busy, dtmf_dnd, dtmf_ring, dtmf_xfer, and tmo_xfer, parameters are required only for telephone switching systems, such as Comdial DXP and Panasonic KXT-D, that can send DTMF tones in place of PCPM tones.</p> <p>For Comdial DXP, The Amanda Company recommends dtmf_action=1, dtmf_busy='2', dtmf_dnd='3', and dtmf_xfer='1'. (It sends nothing for a ring—dtmf_ring="".) tmo_xfer=50 and tmo_rna=25 have been recommended.</p> <p>For Panasonic KXT-D, The Amanda Company recommends dtmf_action=1, dtmf_ring='1', dtmf_busy='2', dtmf_dnd='4', dtmf_xfer='5', and tmo_xfer=20.</p> <p>tmo_xfer is the number of tenths of seconds that Amanda waits to read a sequence of DTMF digits from the port prior to doing PCPM. The range is 0 to 255. The default is 0, which disables this and the following parameters. (If this parameter is blank, the default is used.)</p> <p>If the tmo_xfer timeout is greater than 0, Amanda waits for digits until the timeout occurs.</p> <p>The digits the system might read are:</p> <p>dtmf_xfer This sequence of digits means that the extension has been answered. Amanda releases the call. The default is an empty string (no digit).</p> <p>NOTE: The telephone switching system should bring the call back to the port if this digit is sent when the phone is ringing rather than actually answered.</p> <p>CAUTION: When using call screening, be aware that this will play the caller's name and company as well as the call screening menu to a ringing tone.</p>

Global Settings (Continued)

Parameter	Description
(cont.) dtmf_action dtmf_busy dtmf_dnd dtmf_ring dtmf_xfer tmo_xfer	<p>dtmf_dnd This sequence of digits means that the extension is in Do Not Disturb mode. Amanda treats the call as though it were not answered (RNA). The default is an empty string (no digit).</p> <p>dtmf_busy This sequence of digits means that the extension is busy so Amanda performs no PCPM. The default is an empty string (no digit).</p> <p>dtmf_ring This sequence of digits causes Amanda to stop waiting or to extend her wait, depending on the value of dtmf_action. The default is an empty string (no digit).</p> <p>no digit If Amanda reads no sequence of digits before the tmo_xfer timeout occurs, the system stops waiting or extends her wait, depending on the value of dtmf_action.</p> <p>The dtmf_action parameter determines what Amanda does if the system receives the digits specified in dtmf_ring or if the timeout specified by tmo_xfer occurs before the digits arrive.</p> <p>When 0 (the default), Amanda performs normal PCPM.</p> <p>When 1, Amanda continues to wait for the digits. The system waits 6 seconds for each of the rings specified for a Ring No Answer (RNA). For example, if the mailbox has 4 rings for RNA, Amanda waits 24 seconds. Then the system decides that the call is not answered.</p> <p>For COMDIAL, see also dtmf_dt.</p> <p>The defaults appear in install.cfg as:</p> <pre>set dtmf_action 0 set dtmf_busy '' set dtmf_dnd '' set dtmf_ring '' set dtmf_xfer '' set tmo_xfer 10</pre>
dtmf_before_ring	<p>Controls whether Amanda clears the voice board's DTMF buffer when a ring is detected. Clearing the buffer gets rid of digits left over from a previous call.</p> <p>True or False. The default is False.</p> <p>When True, the buffer is not cleared. Make sure the telephone switching system can send DTMF before a ring prior to changing this to True.</p> <p>When False, Amanda clears the buffer when a ring is detected. You must use False for Brooktrout 2132 and 4132 because they cannot detect DTMF while on-hook.</p> <p>The default appears in install.cfg as:</p> <pre>set dtmf_before_ring false</pre>
dtmf_busy	<p>This parameter is required only for telephone switching systems, such as Comdial DXP and Panasonic KXT-D, that can send DTMF tones in place of PCPM tones. See also dtmf_action.</p>
dtmf_dnd	<p>This parameter is required only for telephone switching systems, such as Comdial DXP and Panasonic KXT-D, that can send DTMF tones in place of PCPM tones. See also dtmf_action.</p>

Global Settings (Continued)

Parameter	Description
dtmf_detect	<p>How long a DTMF tone must play for Amanda to recognize that it has occurred. Number from 2 to 6, each representing 16 ms. (For example, 3 equals 48 ms or .048 seconds.) The default is 0.</p> <p>Zero means to use the default. The default is 3 (.048 seconds).</p> <p>When non-zero, both Brooktrout's DTMFDetect and DTMFDelay channel parameters are set to that value.</p> <p>The default appears in install.cfg as: <pre>set dtmf_detect 0</pre></p>
dtmf_dly	<p>Controls the amount of time between DTMF tones when Amanda is dialing. Number of hundredths of seconds. The value is 0 or a number from 3 to 19. The default is 0.</p> <p>Using a value of 0 makes it country-dependent (50ms in the US, 80ms in the UK). When non-zero, the specified time is used.</p> <p>The default appears in install.cfg as: <pre>set dtmf_dly 0</pre></p>
dtmf_dt	<p>The string of DTMF digits received instead of a dial tone. For example, COMDIAL sends a '1'.</p> <p>The string can be any length. The default is an empty string which means that Amanda waits for the dial tone.</p> <p>If dtmf_dt is not an empty string, and if tmo_dtwait (the dial code that determines how long to wait for a dial tone or its equivalent) is > 0, Amanda dials dl_dtwait (the dial code that puts the caller on transfer hold) and then waits for the dtmf_dt digits to come from the switch.</p> <p>If Amanda receives fewer digits or if the digits do not match dtmf_dt, Amanda assumes the extension is busy. If Amanda receives the expected digits, the system proceeds with the call. As soon as Amanda receives the correct number of digits, the system stops waiting regardless of the value of tmo_dtwait. Therefore, it should be safe to make tmo_dtwait substantially larger than the actual time expected.</p> <p>The default appears in install.cfg as: <pre>set dtmf_dt ''</pre></p>
dtmf_gate	<p>Verifies that the caller is still on the line before transferring him to the operator. This applies only if the mailbox (usually the operator) specified in the Done Chain for the Caller Instructions mailbox has Do Not Disturb turned off.</p> <p>True or False. The default is False.</p> <p>When True, Amanda verifies that the caller is still on the line after playing the Caller Instructions and not hearing any DTMF. Amanda asks the caller to "Say 'yes' at the tone" before transferring the call. For example, on telephone switching systems that do not have disconnect supervision, this can prevent the transfer of a call to the operator or prevent the replaying of a menu when the caller has hung up.</p> <p>When False, Amanda transfers the call without verifying that the caller is still on the line.</p> <p>The default appears in install.cfg as: <pre>set dtmf_gate false</pre></p>

Global Settings (Continued)

Parameter	Description
dtmf_on	<p>Controls how long Amanda plays each DTMF tone.</p> <p>Number in hundredths of seconds. The range is from 10 to 90. The default is 20 (.2 seconds).</p> <p>The default appears in install.cfg as: <pre>set dtmf_on 20</pre></p>
dtmf_ring	<p>This parameter is required only for telephone switching systems, such as Comdial DXP and Panasonic KXT-D, that can send DTMF tones in place of PCPM tones. See also dtmf_action.</p>
dtmf_xfer	<p>This parameter is required only for telephone switching systems, such as Comdial DXP and Panasonic KXT-D, that can send DTMF tones in place of PCPM tones. See also dtmf_action.</p>
end_rec_menu	<p>When record_menu is True, this parameter determines whether the caller hears the post-record menu that allows callers or users to review or re-record their messages or greetings.</p> <p>True or False. The default is True.</p> <p>When True, the caller or user hears the menu.</p> <p>When False, the caller or user does not hear the menu.</p> <p>The default appears in install.cfg as: <pre>set end_rec_menu true</pre></p>
exit_digit	<p>Defines one additional DTMF tone that causes Amanda to stop during recordings (whether greetings or messages) and play the post-record menu.</p> <p>The range is from 0 to 9 and also includes * and #. The default is '#'. Remember that the # key always causes Amanda to stop recording, even when it is not the value of exit_digit.</p> <p>The default appears in install.cfg as: <pre>set exit_digit '#'</pre></p>
exit_to_0	<p>Allows a caller to leave a message and talk to the operator afterwards.</p> <p>True or False. The default is True.</p> <p>When True, the caller can press 0 after recording a message and is transferred to mailbox 0.</p> <p>When False, Amanda records the DTMF 0 as part of the message unless 0 is defined as an exit digit (see exit_digit).</p> <p>NOTE: Regardless of the setting for exit_to_0, a caller can press 0 during the “Begin recording at the tone...” prompt and go to mailbox 0 immediately. If the caller presses any other key (1-9, #, *), Amanda stops the prompt, plays the beep, and starts recording the message.</p> <p>The default appears in install.cfg as: <pre>set exit_to_0 true</pre></p>

Global Settings (Continued)

Parameter	Description
fast_forward	<p>Allows you to use an alternate TUI (telephone user interface) for forwarded messages. True or False. The default is False.</p> <p>When True and a user forwards a message, the alternate TUI asks you for the destination mailbox number, confirms your choice by playing that mailbox owner's name and extension recording, and asks for a prefix. Then you hear the post record menu and your message is sent as you save it. This minimizes keystrokes when forwarding a message.</p> <p>The default appears in install.cfg as: <pre>set fast_forward false</pre></p>
fast_forward_n_pre	<p>Controls the recording of a prefix message during a fast forward. See fast_forward. True or False. The default is False.</p> <p>When True, a prefix cannot be recorded.</p> <p>When False, the prefix can be recorded.</p> <p>The default appears in install.cfg as: <pre>set fast_forward_n_pre false</pre></p>
fast_send_msg	<p>Controls the menu options available for sending or forwarding messages.</p> <p>When True, Amanda plays a stream-lined menu. When the logged-on user presses 4 (to send) or 5 (to forward), Amanda expects the user to enter the mailbox number, a personal mailing list number preceded by a *, or a system mailing list number preceded by **. When the user presses # after selecting a recipient (or a list of recipients), Amanda expects the user to record the message. After recording the message, the post-record menu is slightly different: the user can press 8 to send the message with verification or 9 to send the message without verification.</p> <p>When False, users must press 1 to designate a recipient and 2 to record. With the longer version of the post-record menu, after pressing 9 to save the message, verification is handled by pressing 5 (a 3 sends it without verification).</p> <p>In both cases, other options, such as setting a future delivery date are available.</p> <p>True or False. The default is True.</p> <p>The default appears in install.cfg as: <pre>set fast_send_msg true</pre></p>
fax_monitor	<p>Notifies the sending mailbox about fax transmission. True or False. The default is True.</p> <p>When True, the sending mailbox receives a message that the fax has been transmitted or that it failed.</p> <p>When False, the fact that a fax has been transmitted is not reported back to the sending mailbox.</p> <p>This parameter applies to both fax modems and BrookTrout TruFax/200 boards.</p> <p>The default appears in install.cfg as: <pre>set fax_monitor true</pre></p>
future_delivery	<p>Specifies the mailbox that stores messages to be delivered in the future. This mailbox must be able to store messages.</p> <p>The default is 995, but you can use any valid mailbox. -1 means no mailbox has been assigned.</p> <p>The default appears in install.cfg as: <pre>set future_delivery 995</pre></p>

Global Settings (Continued)

Parameter	Description
gain_loud	<p>Controls the volume of the custom busy message.</p> <p>Number. The range is from -8 to 8 and the default is 0.</p> <p>The default appears in install.cfg as: <pre>set gain_loud 0</pre></p>
gain_norm	<p>The initial volume for all ports and the playback volume when the system answers the telephone.</p> <p>Number. The range is from -8 to 8 and the default is 0.</p> <p>The default appears in install.cfg as: <pre>set gain_norm 0</pre></p>
guest_defaults	<p>The mailbox to use as a template when creating a new guest mailbox.</p> <p>The default is 996, but you can use any valid mailbox. -1 means no mailbox has been assigned.</p> <p>See also defaults_box which explains what fields are copied.</p> <p>The default appears in install.cfg as: <pre>set guest_defaults 996</pre></p>
guest_min	<p>The starting mailbox for guest mailboxes. If this value is 90000, the first guest mailbox is 90000. The second is 90001, and so forth.</p> <p>See also guest_max. Guest_max must be larger than guest_min.</p> <p>Any valid mailbox. The default is 90000.</p> <p>The default appears in install.cfg as: <pre>set guest_min 90000</pre></p>
guest_max	<p>The last mailbox for guest mailboxes. If this value is 90199, the highest possible number for a guest mailbox is 90199. Along with the guest_min, you limit the number of guest mailboxes that Amanda can create. Guest_max must be larger than guest_min.</p> <p>A valid mailbox. The default is 90199.</p> <p>The default appears in install.cfg as: <pre>set guest_max 90199</pre></p>
hold_music	<p>Determines what music is played while a caller is on hold. You can select from Bluegrass, Country1, Country2, Jazz, Jennifer2 (a jazz composition by an eight-year-old named Jennifer), Rock1, Rock2, and Traditional.</p> <p>The default, Traditional is stored in the hold.vox file, which you can overwrite with a music file of your own. The Amanda installation program install a hold.vox file only if one does not already exist. This prevents Amanda from overwriting your music file.</p> <p>The default appears in install.cfg as: <pre>set hold_music 'Traditional'</pre></p>
id_callee	<p>Determines whether the “please hold” prompt includes the name and extension recording for the person being called.</p> <p>True or False. The default is False.</p> <p>When True, Amanda says, “Please hold for <i>name_ext_recording</i>.”</p> <p>When False, Amanda says, “Please hold while I try that extension.”</p> <p>The default appears in install.cfg as: <pre>set id_callee false</pre></p>

Global Settings (Continued)

Parameter	Description
immediate_play_msg	<p>If the user has any messages at the time he or she logs on, this parameter can take that user directly to the menu from which messages can be played.</p> <p>True or False. The default is False.</p> <p>When True, the user goes to immediately to the play messages menu. The user can press 9 to go to the main menu.</p> <p>When False, the user goes immediately to the main menu.</p> <p>The default appears in install.cfg as: <pre>set immediate_play_msg false</pre></p>
integration_greeting	<p>Determines what greeting plays for integrated calls that have both rrr and sss (or rrrr and ssss) fields set. (The r's indicate the number of digits in the extension of the user who was called but did not answer. The s's indicate the number of digits in the extension of the user who made the call. See "Using Character Codes" on page 41 for more information.)</p> <p>True or False. The default is True.</p> <p>When True, Amanda plays the RNA greeting for the mailbox identified by rrr.</p> <p>When False, Amanda plays the system greeting.</p> <p>In either case, a message is taken for rrr from sss.</p> <p>The default appears in install.cfg as: <pre>set integration_greeting true</pre></p>
lcoff	<p>The minimum necessary duration of loop current off before the voice board driver recognizes that the loop current is off. Corresponds to the Brooktrout global parameter LcOff.</p> <p>Number of hundredths of seconds (from 1 to 6553) or the number -1 or 0. For example 10 is .1 second. The default is -1.</p> <p>When 0, the voice board's default is used. The default is .1 seconds.</p> <p>When -1, there is no wait.</p> <p>The default appears in install.cfg as: <pre>set lcoff -1</pre></p>
lcvalid	<p>The length of time that the voice board driver ignores loop current transition events (on, off, and drop) after starting PCPM. Corresponds to the Brooktrout channel parameter LcValid.</p> <p>Number of hundredths of seconds (from 1 to 255) or the number -1 or 0. For example 10 is .1 second. The default is 0.</p> <p>When 0, the voice board's default is used. The default is 4 seconds.</p> <p>When -1, this parameter is disabled and no events are ignored.</p> <p>The default appears in install.cfg as: <pre>set lcvalid 0</pre></p>

Global Settings (Continued)

Parameter	Description
lcwait	<p>The minimum time after dialing a digit string before the voice board driver decides the loop current drop is an answer. Corresponds to the Brooktrout channel parameter LcWait.</p> <p>Number of hundredths of seconds (from 1 to 255) or the number -1 or 0. For example 10 is .1 second. The default is 0.</p> <p>When 0, the voice board's default is used. The default is 100 ms (.1 seconds).</p> <p>When -1, this parameter is disabled and there is no minimum time.</p> <p>The default appears in install.cfg as: <pre>set lcwait 0</pre></p>
list_delay	<p>When a message is sent to a list, this is the delay between deliveries to mailboxes on the list. It has no effect on direct messaging or future deliveries. Slowing down the delivery rate makes sending to long lists less likely to slow down the system.</p> <p>Number of tenths of a second. The default is 10 (which is 1 second). The range is 0 to 255.</p> <p>The default appears in install.cfg as: <pre>set list_delay 10</pre></p>
lognam	<p>The name of the file to be used as the system log file. It is stored in the C:\AMANDA directory. This log file contains start-up information, any execution error information, DOS errors, disk errors, system actions, and shutdown information.</p> <p>The default filename is 'AMANDA.LOG'.</p> <p>NOTE: Since this file grows (slowly), archive or delete it once or twice a year when you perform preventative maintenance.</p> <p>The default appears in install.cfg as: <pre>set lognam 'AMANDA.LOG'</pre></p>
lpt_port	<p>String containing the name of the printer attached to Amanda, for example, '\\elisea\hp4'. The printer must be configured on the Amanda computer to output text by default and to be spooled. To set these parameters:</p> <p>Select Start⇒Settings⇒Printers.</p> <p>Right-click the printer and select Properties from the pop-up menu.</p> <p>Select the General tab.</p> <p>Click Print Processor.</p> <p>Make sure that TEXT is the selected Default Datatype.</p> <p>Select the Scheduling tab.</p> <p>Select the Spool Print Documents So Program Finishes Printing Faster option button.</p> <p>Click OK to save these settings.</p> <p>The default is the empty string, which means that no printer has been specified.</p> <p>If you use a non-existing printer, reports aren't printed.</p> <p>See also auto_report and auto_report_time.</p> <p>The default appears in install.cfg as: <pre>set lpt_port ''</pre></p>

Global Settings (Continued)

Parameter	Description
max_chain	<p>Controls the number of digits the caller can enter for a mailbox.</p> <p>For example, if you have a three-digit extension plan, setting this parameter to 3 allows Amanda to transfer to the mailbox immediately after three digits have been dialed, instead of waiting for a timeout or the # terminator.</p> <p>The default is 8, the largest number allowed in Amanda@Work.Group/Windows.</p> <p>The default appears in install.cfg as: <pre>set max_chain 8</pre></p>
max_dl_inits	<p>The number of ports that can go off-hook simultaneously and dial the telephone switching system initialization code.</p> <p>The range is from 1 to the number of ports defined for Amanda. The default is 2.</p> <p>The PBX file parameter dl_init (What to dial on each port after the system starts) works on the ports specified here.</p> <p>The default appears in install.cfg as: <pre>set max_dl_inits 2</pre></p>
max_ports	<p>Number of ports in use on the Amanda system. This parameter needs to be set when the number of ports available is greater than the number of ports in use. For example, if you have a four-port voice board but are currently using only three ports, set this parameter to 3 to ensure that Amanda does not try to use the fourth port.</p> <p>The default is 72. The range is 1-72. If you are using all the ports that your voice boards can support, it is OK to have a number here that is greater than the number of ports you have.</p> <p>The default appears in install.cfg as: <pre>set max_ports 72</pre></p>
max_prompt	<p>The number of times Amanda repeats menu options before hanging up on a user who is logged in to a mailbox.</p> <p>Number from 1 to 9. The default is 2.</p> <p>See also reask_sac.</p> <p>The default appears in install.cfg as: <pre>set max_prompt 2</pre></p>
minmsg	<p>Amanda requires a minimum length for recorded messages. If a message is shorter than this, it is not saved. The most common reason for changing this parameter is when the Q() token is used and short answers are expected. If so, you should change this to 1 (0.1 seconds.) Otherwise, using a setting that is small results in an increased number of messages that contain only a hangup sound.</p> <p>Number of tenths of seconds. The default is 10 (1 sec.).The range is 0 to 65535.</p> <p>The default appears in install.cfg as: <pre>set minmsg 10</pre></p>
minoff	<p>Minimum amount of time necessary for an inbound ring's off period.</p> <p>Number of tenths of seconds. The default is 0, which uses the voice board's setting for its parameter LSG_MIN_OFF, which defaults to 504 milliseconds (about a half second). The range is 1-655.</p> <p>The default appears in install.cfg as: <pre>set minoff 0</pre></p>

Global Settings (Continued)

Parameter	Description
minring	<p>Minimum amount of time necessary for an inbound ring's on period. Number of tenths of seconds.</p> <p>The default is 0 which tells Amanda to use the voice board's default (which is 2 for Denmark or Holland and 3 elsewhere). Otherwise, the range is 1-655.</p> <p>The default appears in install.cfg as: set minring 0</p>
modified_call_screening	<p>When a mailbox has both call screening and called party identification on, this parameter controls whether Amanda announces only the name and extension of the called party or both that and the name and company of the caller. This is usually used only when more than one mailbox calls the same extension.</p> <p>When call screening is on, Amanda plays the Call Screening menu when the telephone is answered. Then the person who answers can accept some calls and reject others based on the information that he hears. Amanda treats the rejected calls as Ring No Answers.</p> <p>Do not use Call Screening (modified or not) with a mailbox that performs unsupervised (blind) transfers. These transfers have an H in the Extension field (for example, 127H). When the call is unsupervised, no recording is played to the user.</p> <p>True or False. The default is True.</p> <p>When True, the person who answers hears the called party's name and extension recording. Amanda does not ask the caller for a "name and company."</p> <p>When False, the person who answers hears both the caller's name and company and the called party's name and extension recording.</p> <p>The following is an example where John (mailbox 111) and Mary (mailbox 112) share Extension 100. John is at lunch, and Mary is answering all calls at Extension 100.</p> <p>The caller enters 111 trying to reach John.</p> <p>Amanda rings Extension 100 and Mary answers.</p> <p>Amanda says, "This call is for John, Extension 111. To accept this call, press 1. To reject this call press 2 and hang up...." Mary presses 2. The caller hears John's current greeting.</p> <p>NOTE: If a user wants Amanda to announce only for the caller's name and company, the Identify Called Party check box should be cleared in Amanda Administrator.</p> <p>The default appears in install.cfg as: set modified_call_screening true</p>
msg_log	<p>Amanda creates the specified file in the C:\AMANDA directory and logs:</p> <p>The date and time every message is received</p> <p>The date and time every mailbox is checked for messages along with the DTMF the user entered.</p> <p>The default is no filename, which means no log is written to. We recommend using 'MSG.LOG'.</p> <p>See also user_log.</p> <p>The default appears in install.cfg as: set msg_log ''</p>

Global Settings (Continued)

Parameter	Description
multiple_clients	<p>Controls whether multiple connections (logons) are allowed from the same mailbox. The default is 3. The range is from 1 to 3. When 1, only one connection is allowed per mailbox. When 2, only one connection is allowed per mailbox, with the exception of the special mailbox 999, which can connect multiple times. When 3, any mailbox can connect multiple times.</p> <p>The default appears in install.cfg as: <pre>set multiple_clients 3</pre></p>
n_ani	<p>The number of Automatic Number Identification (ANI) digits to be read by Amanda between the first and second wink in a 2-wink T1 environment.</p> <p>The default is 0. The range is 0-255.</p> <p>In a 2-wink T1 environment, Amanda may receive more digits than the Brooktrout buffer can hold. So Amanda reads up to n_ani digits between the first and second winks and starts processing them as part of the regular inband integration. After the second wink, Amanda reads the remaining digits.</p> <p>The default appears in install.cfg as: <pre>set n_ani 0</pre></p>
n_clients	<p>Along with client_activation_key, controls the number of client connections (logons) that can simultaneously connect to the Amanda voice server. This is normally set automatically when the client connections are installed into the server. Do not edit this parameter.</p> <p>The default is 0, which means 1 client. The range is from 0 to 2000.</p> <p>The default appears in install.cfg as: <pre>set n_clients 0</pre></p>
nam_maxlen	<p>The maximum number of seconds to allow for recording a mailbox's name and extension. Amanda plays the name and extension recording to provide callers with information from the employee directory and to identify who is being called.</p> <p>A number of seconds. The range is from 1 to 99. The default is 5.</p> <p>See also box_idx and modified_call_screening.</p> <p>The default appears in install.cfg as: <pre>set nam_maxlen 5</pre></p>
new_send	<p>Determines whether a user can send a message to more than one user, when those users are not part of a single list.</p> <p>True or False. The default is True.</p> <p>When True, a user can send a message to several mailboxes "on the fly." When the user presses 4 to send a new message, then 1 to select a mailbox destination, Amanda asks for the "next mailbox or the # sign to finish." When the user presses 3 to send, or 5 to send with verification, the message is sent to every mailbox that was entered.</p> <p>When False, the user can send a message only to one mailbox or to a previously created list of mailboxes.</p> <p>The default appears in install.cfg as: <pre>set new_send true</pre></p>

Global Settings (Continued)

Parameter	Description
non_relay_ok	<p>Determines the result of pressing # during a greeting.</p> <p>True or False. The default is False.</p> <p>When True, for any mailbox that does not have relay paging, pressing # (as well as ##) ends a greeting and goes directly to the beep for leaving a message. If the mailbox has relay paging, # invokes the relay and only ## ends the greeting.</p> <p>When False, only ## ends the greeting, regardless of whether the mailbox has relay paging.</p> <p>The default appears in install.cfg as: <pre>set non_relay_ok false</pre></p>
notify_restriction	<p>Used to indicate what ports are in or not in the notification set.</p> <p>Use True or False followed by a port number. False is the default.</p> <p>When True, the specified port is in the set of notification ports.</p> <p>When False, the specified port is not in the set of notification ports.</p> <p>You must put only one port in the notification set if you install Amanda on a telephone switching system that requires the same port to turn message lights both on and off. In this case, with additional ports in the set, a message light might come on and stay on.</p> <p>If no ports are in the notification set, Amanda puts all ports in the set automatically.</p> <p>The default appears in install.cfg as: <pre>set notify_restriction false n</pre> where <i>n</i> is a port number. The <i>n</i> is optional; when <i>n</i> is not used, the set of notification ports includes all ports, regardless of the use of True or False.</p>
off_dly	<p>Amount of time after a line goes off-hook before the voice board notifies Amanda that the line is off-hook.</p> <p>Number of hundredths of seconds. The default is 50 (.5 sec.). The range is 1-6553. The numbers 0 and -1 have special meanings.</p> <p>When 0, Amanda uses the voice board's default (which is also 50).</p> <p>When -1, there is no delay.</p> <p>The default appears in install.cfg as: <pre>set off_dly 50</pre></p>
partial_q_ok	<p>Determines what messages are saved when the Q() command is used to get answers from a caller.</p> <p>True or False. The default is False.</p> <p>When True, Amanda saves a message even if the caller hangs up before answering all the questions.</p> <p>When False, Amanda does <i>not</i> save a message using the Q() command unless all the questions have been answered.</p> <p>The default appears in install.cfg as: <pre>set partial_q_ok false</pre></p>

Global Settings (Continued)

Parameter	Description
password	<p>Sets the Amanda password. The password is case-sensitive, so uppercase letters are different from lowercase letters. That means that AMandA, Amanda, and amanda all represent different passwords.</p> <p>Use a text string with a maximum length is 8 characters. The default is AMandA.</p> <p>If you use the null string (that is, no password), you must use a dealer password to operate and shut down Amanda.</p> <p>The default appears in install.cfg as:</p> <pre>set password 'AMandA'</pre>
PBX	<p>This parameter is described here in case you decide to change it by editing install.cfg. (However, setting this parameter is <i>not</i> recommended.) The PBX parameter (not to be confused with the pbx parameter) does <i>not</i> appear in the General Configuration section of the Setup utility because Setup makes changes to this parameter automatically. This parameter indicates a number for a PBX and a name for its .PBX and .TON files.</p> <p>Setup assigns the number 1 to your first PBX and the number 2 to your second (if you have a second PBX).</p> <p>Setup automatically assigns a name (up to 8 characters) to the .PBX and .TON files that Amanda uses with your telephone switching system. By default, Setup uses 1001 for the first PBX and 2001 for the second. You can use any name in install.cfg, but it is best to use the defaults. If you must change this parameter, use a number greater than 2001 or a non-numeric name.</p> <p>Amanda's Setup utility provides a list of PBXs. When you select your first telephone switching system, information about that switch's known dial codes, integration patterns, and so forth is automatically copied to 1001.PBX. When you select the second, information about that switch is copied to 2001.PBX.</p> <p>Then you modify those files to suit your needs.</p> <p>If you run Setup or Diag to discover tone patterns, the patterns are stored in 1001.TON and 2001.TON respectively.</p> <p>See also pbx in the Per Port section.</p> <p>The defaults (which do not start with the word set) appear in install.cfg as:</p> <pre>PBX 1 1001</pre>
play_from	<p>When playing your messages, this parameter controls whether Amanda identifies the Amanda user who sent (or forwarded) each message.</p> <p>True or False. The default is False.</p> <p>When True, Amanda indicates who sent an internal message before the system plays the message. Amanda plays the name and extension recording for the sender (if it exists). Amanda says the mailbox number (for example, mailbox 1-4-7) when there is no recording.</p> <p>When False, Amanda only plays the message.</p> <p>The default appears in install.cfg as:</p> <pre>set play_from false</pre>

Global Settings (Continued)

Parameter	Description
play_new_first	<p>Determines what message is played next when the user has logged on to his mailbox to play messages.</p> <p>True or False. The default is True.</p> <p>When True, pressing 1 plays the next new message and pressing 75 plays the messages in order, regardless of whether they have been heard.</p> <p>When False, pressing 1 plays the messages in order and pressing 75 plays the next new message.</p> <p>See also auto_wrap.</p> <p>The default appears in install.cfg as: <pre>set play_new_first false</pre> </p>
play_skip	<p>The number of seconds to rewind or skip forward during message playback when a * (rewind) or # (skip forward) is pressed.</p> <p>The range is from 1 to 99. The default is 5.</p> <p>The default appears in install.cfg as: <pre>set play_skip 5</pre> </p>
please_hold	<p>Controls the use of the “Please hold” prompt.</p> <p>True or False. The default is True.</p> <p>When True, Amanda says “Please hold while I try that extension” before transferring a caller.</p> <p>When False, Amanda says nothing and immediately puts the caller on transfer hold.</p> <p>The default appears in install.cfg as: <pre>set please_hold true</pre> </p>
please_hold2	<p>Controls the use of the second “Please hold” prompt.</p> <p>True or False. The default is True.</p> <p>The second “Please hold” prompt is slightly different from the first “Please hold” prompt to avoid monotony (as the caller has probably already heard the first prompt). To use or suppress it requires a second parameter.</p> <p>When True, Amanda says “Your call is very important. Please continue to hold.”</p> <p>When False, Amanda says nothing.</p> <p>The default appears in install.cfg as: <pre>set please_hold2 true</pre> </p>
product_activation_key	<p>A number you receive from an Amanda Company sales representative to activate your system. If one or more of your voice boards were not purchased from The Amanda Company, you must also set activation_key. See “activation_key” on page 189.</p> <p>If you change the first board in your system, you need another product activation key because the key is based on the serial number for the first Amanda Company board.</p> <p>The default is 0, which means there is no product activation key.</p> <p>The default appears in install.cfg as: <pre>set product_activation_key 0</pre> </p>

Global Settings (Continued)

Parameter	Description
prompt_file	<p>Specifies the language that Amanda uses when a call first comes in on a given port. ENGLISH or SPANISH. The default is ENGLISH.</p> <p>You can change the prompt file for that port “on the fly” using the L() command from the Token Programming Language. Amanda can also change the language prompts for that port based on the DTMF sent by the telephone switching system or the central office.</p> <p>The ENGLISH.IDX file contains the English prompts. SPANISH.IDX is also available. Please contact your Amanda Marketing Partner, Solution Provider, or sales representative for more information and pricing.</p> <p>The default appears in install.cfg as: <pre>set prompt_file 'ENGLISH'</pre></p>
prompt_speed	<p>Controls the speed of the prompts. The range is from 50, which represents 50% or half the speed, to 200, which represent 200% or twice the speed. The default is 100, which is the normal speed.</p> <p>Vantage-based voice boards can correct the pitch of the sound. With other boards, the pitch will become lower or higher as you slow down or speed up the sound.</p> <p>The default appears in install.cfg as: <pre>set prompt_speed 100</pre></p>
purge	<p>Controls how long messages that have been heard are stored before they are purged. Number of days. The range is from 0 to 99. The default is 0.</p> <p>If 0, no messages are purged.</p> <p>Otherwise, messages that have been heard are purged after the specified number of days. When users log in, Amanda tells them how many messages will be deleted when they exit. This number is the number of heard messages in excess of the number that can be stored.</p> <p>NOTE: Once a message is purged, there is no way to retrieve it.</p> <p>The default appears in install.cfg as: <pre>set purge 0</pre></p>
range1 range2 range3 range4	<p>If you have a range key (for example range1_key for range1 or range2_key for range2), you can activate 10000 mailboxes. Ranges and range keys are used for third-party applications that program a range of mailboxes to perform certain functions using the Token Programming Language. For more information, contact an Amanda Company sales representative.</p> <p>You set this parameter to the first number in the mailbox range. This number must be a multiple of 10000.</p> <p>The default is 10000 for range1, 20000 for range2, 30000 for range3, and 40000 for range4.</p> <p>See also range1_key, range2_key, range3_key, and range4_key.</p> <p>The defaults appear in install.cfg as: <pre>set range1 10000 set range2 20000 set range3 30000 set range4 40000</pre></p>

Global Settings (Continued)

Parameter	Description
range1_key range2_key range3_key range4_key	<p>If you buy a third-party application that was customized for Amanda using the Token Programming Language, you import the mailboxes programmed for that application with the import utility.</p> <p>Then, to activate that application, you set one of these parameters to the activation key (or range key) that allows Amanda to use those mailboxes. For more information, contact an Amanda Company sales representative.</p> <p>The default is 0, which means there is no key.</p> <p>See also range1, range2, range3, and range4, the parameters that you set to the first of the mailboxes that correspond to the range key.</p> <p>The defaults appear in install.cfg as:</p> <pre>set range1_key 0 set range2_key 0 set range3_key 0 set range4_key 0</pre>
reask_sac	<p>Controls how much the user must repeat when logging in incorrectly.</p> <p>True or False. The default is False.</p> <p>When True and a user logs in incorrectly, the system asks for only the security code the second time. If the user still enters inaccurate information, the systems asks for both the mailbox number and the security code until the maximum of times have been allowed (as set in max_prompt).</p> <p>When False, the system always asks the user for both the mailbox number and the security code.</p> <p>The default appears in install.cfg as:</p> <pre>set reask_sac false</pre>
recall_delay	<p>Amount of time the voice board waits after an earth recall (used in place of a hookflash on some telephone switching systems).</p> <p>Number of hundredths of seconds. 0 tells Amanda to use the voice board's default (which is 15 for Denmark or Holland and 50 elsewhere). Otherwise, the range is 1-6553.</p> <p>The default appears in install.cfg as:</p> <pre>set recall_delay 0</pre>
record_beep	<p>Controls the beep that the user or caller hears as the system begins recording.</p> <p>True or False. The default is True.</p> <p>When True, the system beeps as it begins to record.</p> <p>When False, the beep is not used. Be aware that, unless you have changed the prompt set, the prompt the user hears as the system begins to record says "Begin recording at the tone."</p> <p>The default appears in install.cfg as:</p> <pre>set record_beep true</pre>

Global Settings (Continued)

Parameter	Description
record_menu	<p>Controls Amanda's use of prompts and menus before and after recordings.</p> <p>True or False. The default is True.</p> <p>When True, Amanda checks the values of begin_rec_prompt and end_rec_menu to determine what to say.</p> <p>When False, Amanda does not prompt the caller to leave a message at the tone nor the user to record a greeting at the tone. Amanda also does not play the post-record menu that allows the caller or user to review and re-record.</p> <p>The default appears in install.cfg as: <pre>set record_menu true</pre></p>
recursive_deletes	<p>Controls whether Amanda deletes the guest mailboxes that were created for a mailbox at the same time the mailbox is deleted.</p> <p>True or False. The default is False.</p> <p>When True, when Amanda deletes a mailbox, the guest mailboxes that were created for that mailbox are also deleted. This deletion is recursive.</p> <p>When False, only the mailbox is deleted. Its guest mailboxes remain available for use.</p> <p>The default appears in install.cfg as: <pre>set recursive_deletes false</pre></p>
remember_volume	<p>Causes Amanda to remember volume settings for each user.</p> <p>True or False. The default is False.</p> <p>When True, Amanda remembers each user's most recent playback volume setting.</p> <p>When False, Amanda starts with the default volume setting (see "gain_norm" on page 201).</p> <p>Users can adjust the volume by pressing 8 or 0 (for louder and softer) while listening to their messages.</p> <p>The default appears in install.cfg as: <pre>set remember_volume false</pre></p>
ring_mode	<p>Indicates whether Amanda expects a loop start or a DID interface line on a per port basis.</p> <p>True or False followed by a port number. The default is True.</p> <p>When True, Amanda expects a loop start line, and new calls are indicated by ring voltage.</p> <p>When False, Amanda expects a DID interface line, and new calls are indicated by loop current.</p> <p>The default appears in install.cfg as: <pre>set ring_mode true n</pre></p> <p>where n is a port number. However, the default uses no port number, which means that all the ports use loop start or a DID interface line.</p>
rmt_rna	<p>In a notification record, when using W(0,P) or W(0,V) to wait for a pager or voice answer, the number for this parameter replaces the 0 and provides the number of remote rings that Amanda must hear before the system decides that there is no answer.</p> <p>The default is 4. The range is 1 to 9. However, you should never use fewer than 2 rings with the W() token.</p> <p>The default appears in install.cfg as: <pre>set rmt_rna 4</pre></p>

Global Settings (Continued)

Parameter	Description
rotary	<p>Controls the detection of rotary digits.</p> <p>True or False. The default is False.</p> <p>When True, Amanda detects rotary digits.</p> <p>When False, Amanda does not detect rotary digits.</p> <p>NOTE: Only rotary digits 3(9 and 0 are currently detected on the Brooktrout 2132 and 4132 boards. Therefore, if you plan to use this feature, make sure that all your mailboxes exclude the digits 1 or 2. Also, there are no * and # signs on rotary phones, therefore setting this to True introduces additional delays when the system detects the dialed number. For full rotary detection, please contact your Amanda Sales Representative for other parameters.</p> <p>NOTE: The Brooktrout 232 and 432 boards do not support rotary detection. If rotary detection is required, use Brooktrout 2132 and 4132 boards.</p> <p>NOTE: The 727 Brooktrout drivers (shipped with Amanda version 6.02) does not support rotary. You can switch to the 537 drivers. First save VOICECNF.EXE as VOICECNF.727 and RHETDRV.EXE as RHETDRV.727. Then copy VOICECNF.537 to VOICECNF.EXE and RHETDRV.537 to RHETDRV.EXE. These files are in C:\PLATFORM.</p> <p>The default appears in install.cfg as: <pre>set rotary false</pre></p>
screen_save	<p>The file in the C:\AMANDA directory in which screen traces are saved. Whenever you use screen trace, the data is saved to the designated file. Otherwise, the data appears only on the screen.</p> <p>The default filename is SCREEN.OUT.</p> <p>The default appears in install.cfg as: <pre>set screen_save 'screen.out'</pre></p>
sec_code_display	<p>Controls whether security codes are visible from Amanda Administrator.</p> <p>True or False. The default is False.</p> <p>When True, the security codes are visible.</p> <p>When False, they are replaced by asterisks.</p> <p>The default appears in install.cfg as: <pre>set sec_code_display false</pre></p>
security_min_length	<p>The minimum length of a user's security code (when changed by a user over the telephone or when using Amanda Messenger). This does not affect the length of security codes that are entered from Amanda Administrator. The administrator can use any password of 8 or fewer characters.</p> <p>A number from 1 to 8. The default is 1.</p> <p>The default appears in install.cfg as: <pre>set security_min_length 1</pre></p>

Global Settings (Continued)

Parameter	Description
short_direct_send	<p>The direct message mailbox (usually 998) is for leaving messages for any Amanda user. It does not ring that user's extension. After entering 998, the caller is asked for the destination mailbox then leaves his message.</p> <p>This parameter controls how Amanda identifies the user before the message is left. This confirms that the caller entered the mailbox that he intended to.</p> <p>True or False. The default is False.</p> <p>When True, the caller hears "You entered" followed by the name and extension recording for the user—if there is one. Amanda says the mailbox number (for example, mailbox 1-4-7) when there is no recording.</p> <p>When False, the caller hears the mailbox's current greeting (which can be skipped by pressing # twice).</p> <p>The default appears in install.cfg as: <pre>set short_direct_send false</pre></p>
smtp_server	<p>Specifies the hostname for a computer that runs an SMTP server which will accept submissions from the Amanda system. It is used by the KG() token when sending Internet e-mail. For example, the hostname might be mail.company.com.</p>
tape_length	<p>When a user selects 1, 7, 8 (for continuous play) from the top level menu, this parameter indicates how long Amanda will play messages continuously (with a beep between them). Usually this is equal to the length of one side of a tape. It allows users to archive their messages. Users can record the messages on tape using a microphone if the telephone does not have a jack for this purpose.</p> <p>Number of minutes from 1 to 99. The default is 30.</p> <p>The default appears in install.cfg as: <pre>set tape_length 30</pre></p>
timestamp_forwards	<p>Controls the date and time given to a forwarded message.</p> <p>True or False. The default is True.</p> <p>When True, the date and time tell when the message was forwarded. This can prevent messages from appearing to be delayed when they are forwarded without explanatory prefixes.</p> <p>When False, the date and time tell when the message was first recorded.</p> <p>The default appears in install.cfg as: <pre>set timestamp_forwards true</pre></p>
tmo_call_screening	<p>The number of seconds that Amanda waits for the user to accept or reject a call. This applies to call screening and to waiting call processing.</p> <p>The default is 30. The range is 0 to 255.</p> <p>The default appears in install.cfg as: <pre>set tmo_call_screening 30</pre></p>

Global Settings (Continued)

Parameter	Description
tmo_dir_transfer	<p>Controls whether the caller hears the 411 directory information prompt with the instructions about how to be transferred to an extension. If the value is 0, the prompt is not played. If you use a number greater than 0, Amanda waits that number of seconds for a response from the caller. The default is 2.</p> <p>The prompt after each match is: “To be transferred to this extension, press *. Otherwise, press # to continue.”</p> <p>If you are selecting a recipient for voice mail, the prompt is: “To select this extension, press *. Otherwise, press # to continue.”</p> <p>When there are no more matching directory entries, the prompt is: “To search the directory again, press *. Otherwise, press #.”</p> <p>The default appears in install.cfg as: <pre>set tmo_dir_transfer 2</pre></p>
tmo_disk	<p>Controls how often Amanda checks for low disk space. Amanda also checks for low disk space when the system starts up.</p> <p>Number of minutes. The range is 0 to 255. The default is 60.</p> <p>See also diskwarn.</p> <p>The default appears in install.cfg as: <pre>set tmo_disk 60</pre></p>
tmo_dtmf	<p>The amount of time Amanda waits after a DTMF digit before deciding the caller has finished the entry. (If the caller presses #, Amanda immediately recognizes this as the end of a DTMF entry.)</p> <p>Number of tenths of seconds (from 1 to 255). The default is 12 (1.2 seconds).</p> <p>The default appears in install.cfg as: <pre>set tmo_dtmf 12</pre></p>
tmo_hold	<p>Determines how long Amanda waits after a caller presses * to hold for an extension that is busy before trying to transfer the call again. This is only used when the file C:\AMANDA\HOLD.VOX, which Amanda normally plays for callers on hold, is missing. Usually Amanda tries to transfer the call after playing the file.</p> <p>Number of seconds. The default is 20. The range is 0 to 255.</p> <p>NOTE: You can record over HOLD.VOX using the system administration menu from the system administration mailbox (mailbox 999.) You may want to save the original first.</p> <p>The default appears in install.cfg as: <pre>set tmo_hold 20</pre></p>
tmo_idle	<p>Number of seconds of inactivity after which Amanda decides that the port is idle.</p> <p>The default is 0. The range is 0-999.</p> <p>When greater than 0, Amanda goes off-hook and back on-hook after deciding that the port is idle. This is necessary when a telephone system does not release a station that is connected to Amanda even after Amanda has gone on-hook (a rare occurrence).</p> <p>When 0, Amanda does not go off-hook and back on-hook if a port is idle.</p> <p>The default appears in install.cfg as: <pre>set tmo_idle 0</pre></p>

Global Settings (Continued)

Parameter	Description
tmo_menu	<p>The amount of time Amanda waits before repeating a menu when no selection is made. Number of tenths of seconds from 1 to 99. The default is 20 (2.0 seconds).</p> <p>The default appears in install.cfg as: <pre>set tmo_menu 20</pre></p>
tmo_pickup	<p>The minimum amount of time Amanda waits between an on-hook and off-hook event. Number of tenths of seconds from 1 to 99. The default is 20 (2.0 seconds).</p> <p>The default appears in install.cfg as: <pre>set tmo_pickup 20</pre></p>
tmo_queue	<p>The number of seconds after which a waiting call is automatically transferred to voice mail as though the extension were never answered.</p> <p>The default is -1, which waits forever (as does 0, which is infinite). The range is from -1 to 4 million.</p> <p>The default appears in install.cfg as: <pre>set tmo_queue -1</pre></p>
tmo_rna	<p>For some PBXs, Amanda assumes that the called party is not going to answer the telephone if there is no answer after a certain length of time. The amount of time the system waits is the product of this setting times the maximum number of rings for a Ring No Answer. (The maximum number of rings is set per mailbox using the Adjust Maximum Rings text box in Amanda Administrator.)</p> <p>This setting is in tenths of seconds and is the estimated length of time it takes for a ring. The default is 60 (which is an estimated six seconds per ring). The range is 0 to 65535.</p> <p>The defaults appear in install.cfg as: <pre>set tmo_rna 60</pre></p>
tmo_serial	<p>Number of seconds to wait for a response from a peripheral device connected to one of Amanda's serial ports.</p> <p>When communicating with peripheral devices through a serial port, Amanda needs a timeout value so the system doesn't wait forever for a response.</p> <p>Number of seconds from 1 to 999. The default is 2.</p> <p>The default appears in install.cfg as: <pre>set tmo_serial 2</pre></p>
tmo_silence	<p>The maximum seconds of silence before Amanda decides that the caller or user is finished recording a message or greeting.</p> <p>The post record menu plays if the record_menu option is True. The caller can press 3 to append the message if he was just pausing too long.</p> <p>If the number is 0, Amanda does not use silence to determine completion.</p> <p>Number of seconds from 0 to 255. The default is 5.</p> <p>The default appears in install.cfg as: <pre>set tmo_silence 5</pre></p>
tmo_sound	<p>The maximum seconds of continuous sound/dial tone before Amanda decides that the caller or user is finished recording a message or greeting and has hung up. If the number is 0, Amanda does not use sound/dial tone to determine completion.</p> <p>Number of seconds from 0 to 255. The default is 5.</p> <p>The default appears in install.cfg as: <pre>set tmo_sound 5</pre></p>

Global Settings (Continued)

Parameter	Description
tmo_xfer	This parameter is required only for telephone switching systems, such as Comdial DXP and Panasonic KXT-D, that can send DTMF tones in place of PCPM tones. See also dtmf_action.
treat_rna_as_busy	<p>Allows you to treat ring-no-answer (RNA) calls as busy calls. In certain environments (such as Automatic Call Distributors—ACDs), combining this configuration parameter with auto_queue allows you to queue all unanswered calls, not just busy calls. The other way to accomplish this, by putting the ring tones in the tone table with a BUSY code, does not allow you to set the number of rings that must occur before the busy signal is returned.</p> <p>True or False. The default is False.</p> <p>If True and Amanda performs supervised transfers, Amanda treats an RNA call as a busy call and can be put on hold.</p> <p>If False, an RNA call is treated as an RNA call. This usually means that the caller is asked to leave a message immediately.</p> <p>The default appears in install.cfg as: treat_rna_as_busy false</p>
tokens_available	<p>Lists the tokens available to program with. Depending on the type of Amanda system you have, you may not be able to use all the tokens in the list.</p> <p>You can make additional restrictions by deleting tokens that your system can use from the list. For example, deleting the G token makes it impossible to program a move from one mailbox to another via tokens.</p> <p>The default is 'GIJLMNOPQRSTUVWXYZ<>+?-?=[[]{^@'</p> <p>The default appears in install.cfg as: set tokens_available 'GIJLMNOPQRSTUVWXYZ<>+?-?=[[]{^@'</p>
use_tutorial	<p>Controls whether Amanda uses the tutorial for setting up mailboxes when users use the telephone user interface for the first time.</p> <p>True or False. The default is True.</p> <p>When True, Amanda suggests that the user use the tutorial to set up his or her mailbox. Amanda continues to make this suggestion until the mailbox has been set up.</p> <p>When False, Amanda does not suggest that the user use the tutorial.</p> <p>Regardless of the setting, Amanda retains information about who has and hasn't set up mailboxes so that anytime this configuration parameter is set to True, Amanda behaves correctly.</p> <p>The default appears in install.cfg as: set use_tutorial true</p>
use_pvc	<p>Controls whether Amanda uses the positive voice control feature available on the Brook-trout voice board.</p> <p>True or False. The default is True.</p> <p>When True, Amanda detects a human voice faster, but there is a greater chance of identifying an unanswered call as answered and ending her supervision of the call too soon.</p> <p>When False, Amanda may take more time to detect an answer during supervised transfers, but false answer detects are less likely.</p> <p>The default appears in install.cfg as: set use_pvc true</p>

Global Settings (Continued)

Parameter	Description
user_log	<p>If you provide a file name, Amanda creates that file and logs: The date, time, and mailbox when any mailbox is accessed by DTMF. For example, whenever a caller enters a mailbox, that information is logged.</p> <p>The file can be analyzed later for call distribution and access to mailboxes by date, day, and time.</p> <p>The default is to not log data (because no file name is provided). We recommend using 'USER.LOG'.</p> <p>See also msg_log.</p> <p>The default appears in install.cfg as: set user_log ''</p>
v_sac_activation	<p>A number you receive from an Amanda Company sales representative that activates voice security, allowing users to use a verbal phrase as a security code. The default is 0.</p> <p>The default appears in install.cfg as: set v_sac_activation 0</p>
v_sac_max_tries	<p>The maximum number of times Amanda asks for a voice security phrase to be restated while the system is analyzing that phrase for use as the user's security phrase. The default is 6.</p> <p>The default appears in install.cfg as: set v_sac_max_tries 6</p>
v_sac_threshold_enroll	<p>A number representing the voice security threshold for enrollment. For example, as a user states and restates his or her security phrase, Amanda must learn it with some level of certainty. This number indicates that level of certainty. The lower the number, the higher the level of certainty that the phrase has been learned.</p> <p>The default is 0, which means to use the current internal value which works for most systems. Recommended values are from 1 to 350.</p> <p>The default appears in install.cfg as: set v_sac_threshold_enroll 0</p>
v_sac_threshold_verify	<p>A number representing the voice security threshold for verification. For example, as the user calls to access his or her mailbox, Amanda must verify that the phrase is indeed this user's security phrase with some level of certainty. This number indicates that level of certainty. The lower the number, the higher the level of certainty that the phrase has been learned.</p> <p>The default is 0, which means to use the current internal value which works for most systems. Recommended values are from 1 to 300.</p> <p>The default appears in install.cfg as: set v_sac_threshold_verify 0</p>
vox_paths	<p>Specifies at least one complete path to a location where voice files (messages and greetings) can be stored. Each path can hold 65,535 voice files. Once set, this value can never be changed except to add additional paths to the list. Each path must begin with a drive letter and a colon. You cannot use UNC path names. When using more than one path, separate the paths with a space. For example: "c:\vox.db d:\vox.db e:\vox.db"</p> <p>The default is "c:\vox.db".</p> <p>The default appears in install.cfg as: set vox_paths 'c:\vox.db'</p>

Per Port Settings

Parameter	Description
box_grt	<p>Determines what greeting the caller hears first. This is set per Amanda telephone port by assigning a mailbox to the port. Greeting 1 for that mailbox is the greeting that the caller hears. By default, all ports are assigned 990, the Company Greeting mailbox.</p> <p>The defaults appear in install.cfg as: set box_grt 990 n where 990 is a mailbox and where n is a port number from 1 to 24.</p>
box_idx	<p>Sets the mailbox for the employee directory. This is set per Amanda telephone port by assigning a mailbox to the port. The employee directory contains the names of all the users as they appear in the Directory Name 1 or Directory Name 2 (in the mailbox window in Amanda Administrator).</p> <p>The default is 411 for every port.</p> <p>For example, to use one employee directory for the ports 1 and 2, another for port 3, and a third for port 4, set box_idx to 411 for ports 1 and 2, 511 for port 3, and 611 for port 4.</p> <p>NOTE: Callers use their telephone pad to spell the names of the users they want to reach. Amanda plays the name and extension recording for every user that matches. If there is no name and extension recording, Amanda says “mailbox” and the number of that mailbox. Digits 7 and 9 should be used for letters Q and Z respectively.</p> <p>The default appears in install.cfg as: set box_idx 411 n where 411 is a mailbox and where n is a port number from 1 to 24.</p>
box_snd	<p>Indicates what mailbox serves as the direct message mailbox. This is set per Amanda telephone port by assigning a mailbox to the port. The direct message mailbox allows you to leave a message for a mailbox without processing the mailbox. Amanda does not execute the Extension field’s tokens or play a greeting. For example, an operator can use the direct message mailbox to transfer callers directly to a user’s voice mail.</p> <p>The default is 998 for all ports.</p> <p>The default appears in install.cfg as: set box_snd 998 n where 998 is a mailbox and where n is a port number from 1 to 24.</p>
hangup_supervision	<p>Allows you to use hangup supervision. This is set per Amanda telephone port.</p> <p>True or False. The default is True.</p> <p>Use True if your telephone switching system supports Loop Current Drop for hangup supervision on the specified port. Even if it doesn’t, using True usually has no negative effect.</p> <p>Use False if you notice call transfer problems such as disconnects during three-way conferences. However, if the problems persists, return to True.</p> <p>The default appears in install.cfg as: set hangup_supervision true n where n is a port number from 1 to 24.</p>

For reference purposes, the per port Parameters are listed here in alphabetical order. In the Setup utility, they are listed: pbx, box_grt, box_idx, box_snd, n_rings, and hangup_supervision.

Per Port Settings (Continued)

Parameter	Description
n_rings	<p>Sets the number of rings that Amanda waits before answering a call on a given port. To have port 7 answer after the second ring use <code>n_rings 2</code> for port 7. This is useful for those telephone switching systems that do not allow incoming lines to ring in a station hunt group or do not provide delayed ringing. Also, it may be used to set up backup answering for a secondary attendant operation.</p> <p>The rings range from 0 to 9.</p> <p>NOTE: There is a side-effect. When users want to pickup their messages, they must wait the specified number of rings before Amanda answers.</p> <p>The default appears in <code>install.cfg</code> as: <code>set n_rings 1 n</code> where 1 is the number of rings and where n is a port number from 1 to 24.</p>
pbx	<p>Indicates which Amanda telephone ports are connected to which PBXs. You provide the PBX's number (usually 1 or 2).</p> <p>The defaults appear in <code>install.cfg</code> as: <code>set pbx 1 n</code> where 1 is the PBX number and where n is a port number from 1 to 24.</p>

For reference purposes, the per port Parameters are listed here in alphabetical order. In the Setup utility, they are listed: `pbx`, `box_grt`, `box_idx`, `box_snd`, `n_rings`, and `hangup_supervision`.

Telephone Switch Integration Settings

Parameter	Description
Integration First Digit Timeout	<p>During inband integration, this parameter causes Amanda to wait the specified number of seconds for the first digit to arrive. Then the seconds in the timeout period (specified in the <code>.pbx</code> file) begin. After the first digit arrives, Amanda continues to read digits until the timeout period ends.</p> <p>The range is 0 to 255. The default is 0.</p> <p>The default appears in <code>install.cfg</code> as: <code>set tmo_integrate 0</code></p>
Integration Interdigit Time	<p>Number of tenths of seconds that Amanda waits between integration digits.</p> <p>This appears in the <code>.PBX</code> file as <code>int_time</code>. The default is 10, which is one second.</p>
Integration Terminator	<p>A one-character string containing the character that terminates DTMF input. The default is the empty string.</p> <p>When Amanda see the character that matches <code>integration_term</code>, the system terminates the integration input. This can be used to speed up slow systems. The terminating character is not removed from the input, so be sure that your integration patterns include it or allow for it.</p> <p>The default appears in <code>install.cfg</code> as: <code>set integration_term ''</code></p>

Serial Port Settings

Parameter	Description
Baud Rate	<p>The bps (bits per second) for the logical serial port with the same number. For example, <code>baud1</code> gives the bps for <code>serial_port1</code>. (Serial_port1 can be mapped to any COM port.)</p> <p>Possible values: Any valid bps rate. The default is 19200.</p> <p>The defaults appear in <code>install.cfg</code> as: <code>set baudn 19200</code> where <i>n</i> is the logical serial port 1, 2, 3, or 4.</p>
COM Port	<p>To communicate with peripheral devices connected to COM/RS232 ports, Amanda needs to know which ports are connected.</p> <p>This parameter matches the serial ports as Amanda knows them (called the logical serial ports) to the actual COM1, COM2, COM3, and COM4 ports on the computer (called the physical serial ports).</p> <p>Possible values are 0 through 4. The default is 0, which means that the port is not connected.</p> <p>Only after this matching can Amanda communicate with devices, such as SMDI interfaces, connected to her COM ports. For example, <code>serial_port1 2</code> matches <code>serial_port1</code> (Amanda's first logical serial port) to the physical COM port 2 of the PC. However, it is less confusing to use <code>serial_port1 1</code>, matching logical and physical ports with the same number.</p> <p>The defaults appear in <code>install.cfg</code> as: <code>set serial_portn 0</code> where <i>n</i> is the logical serial port 1, 2, 3, or 4.</p>
Data Bits	<p>The number of data bits for the logical serial port with the same number. For example, <code>databits1</code> gives the number of data bits for the COM port defined as <code>serial_port1</code>. (Serial_port1 can be mapped to any COM port.)</p> <p>Possible values are 7 or 8. The default is 8.</p> <p>The defaults appear in <code>install.cfg</code> as: <code>set databitsn 8</code> where <i>n</i> is the logical serial port 1, 2, 3, or 4.</p>
Parity	<p>The parity for the logical serial port with the same number. For example, <code>parity1</code> gives the parity for <code>serial_port1</code>. (Serial_port1 can be mapped to any COM port.)</p> <p>Possible values are none, even, odd, mark, or space. The default is none.</p> <p>The defaults appear in <code>install.cfg</code> as: <code>set parityn none</code> where <i>n</i> is the logical serial port 1, 2, 3, or 4.</p>
Stop Bits	<p>The number of stop bits for the logical serial port with the same number. For example, <code>stopbits1</code> gives the number of stop bits for <code>serial_port1</code>. (Serial_port1 can be mapped to any COM port.)</p> <p>Possible values are 1 and 2. The default is 1.</p> <p>The defaults appear in <code>install.cfg</code> as: <code>set stopbitsn 1</code> where <i>n</i> is the logical serial port 1, 2, 3, or 4.</p>

SMDI Settings

Parameter	Description
Base Port	<p>Use this Parameter to identify Amanda's first voice mail port. The first voice mail port is identified as logical port 1, with every successive port having a sequential logical port number.</p> <p>These numbers must be consecutive. The number for the second port must be one more than the number for the first port, and so on.</p> <p>The default number is 1. The range is 0 to 32000.</p> <p>The default appears in install.cfg as: <pre>set smdi_base_port 1</pre></p>
Delay	<p>The time that Amanda waits after the phone rings and is answered, before looking at the integration information (if any).</p> <p>Use a number of tenths of seconds or 0. The default is 0. The range is 0-255. This parameter does not apply to inband integration.</p> <p>When non-zero, Amanda waits the specified time. This allows more than one string to be sent to a given port per telephone call. The number should allow enough time for all the strings to arrive, forcing Amanda to use only the last (most recent) one. (The integration time specified in the 1001.PBX configuration file can be zero or near zero, because Amanda has already waited for smdi_delay time to pass.)</p> <p>For example, if smdi_delay is set to 30 (3 seconds), it is OK to use a pattern such as integration 1 '...', which designates a 0.1-second integration timeout because Amanda waits 3 seconds for the last packet to be received.</p> <p>The default appears in install.cfg as: <pre>set smdi_delay 0</pre></p>
Max	<p>The maximum number of characters expected in a generic SMDI packet.</p> <p>The default is 143. The range is from 1 to 143. Use this when smdi_type is 'generic'.</p> <p>The default appears in install.cfg as: <pre>set smdi_max 143</pre></p>
Pretimeout	<p>The maximum number of seconds that an SMDI packet can precede the forwarded call.</p> <p>The default is 50. The range is from 1 to 99. Use this when the smdi_type is 'smdi', 'nec-mci', 'md100', or 'generic'.</p> <p>The default appears in install.cfg as: <pre>set smdi_pretimeout 50</pre></p>
Port	<p>The logical serial port (represented by serial_port<i>n</i>) to use for SMDI integration. The port should already have been configured as a serial port using the serial port parameters.</p> <p>The range is 0 to 4. The default is 0 (no serial port used).</p> <p>The default appears in install.cfg as: <pre>set smdi_port 0</pre></p>

SMDI Settings (Continued)

Start	<p>Use this parameter when <code>smdi_type</code> is 'necmci', 'generic', or 'md110'.</p> <p>When the <code>smdi_type</code> is 'necmci' or 'generic', the position in the integration packet sent by the telephone switching system where the field containing the port number begins. The first position in the packet is number 1.</p> <p>When the <code>smdi_type</code> is 'md110', this is the number of digits in the extension plan. Normally, this is the same as the value of Longest Local Extension.</p> <p>The default is 8. The range is 0-65535.</p> <p>The default appears in <code>install.cfg</code> as: <pre>set smdi_start 8</pre></p>														
Stop	<p>Use this parameter when <code>smdi_type</code> is 'necmci', 'generic', or 'md110'.</p> <p>When the <code>smdi_type</code> is 'necmci' or 'generic', the position in the integration packet sent by the telephone switching system where the field containing the port number ends. The first position in the packet is number 1.</p> <p>When the <code>smdi_type</code> is 'md110', this is the number of digits in the port number information sent by the telephone switching system. This is usually 2.</p> <p>The default is 11. The range is 0-65535.</p> <p>The default appears in <code>install.cfg</code> as: <pre>set smdi_stop 11</pre></p>														
Termination String	<p>Used only when <code>smdi_type</code> is 'generic'. The terminating characters (if any) which define the end of a generic SMDI packet. You can include the following escape sequences (similar to those used in strings within tokens)</p> <p>SequenceMeaning</p> <table border="0"> <tr><td><code>\n</code></td><td>newline (carriage return followed by a linefeed)</td></tr> <tr><td><code>\r</code></td><td>carriage return</td></tr> <tr><td><code>\j</code></td><td>linefeed</td></tr> <tr><td><code>\a</code></td><td>attention</td></tr> <tr><td><code>\d</code></td><td>end of transmission</td></tr> <tr><td><code>\\</code></td><td>backslash</td></tr> <tr><td><code>\t</code></td><td>tab</td></tr> </table> <p><code>\digits</code> The <i>digits</i> must represent the octal number for any character in the range 0 to 377 (That is 0 to 255 decimal). For example, to include the ASCII character A (which is 101 in octal), you use <code>\101</code>.</p> <p>When this parameter is not set, packets end only when <code>smdi_max</code> characters have been</p>	<code>\n</code>	newline (carriage return followed by a linefeed)	<code>\r</code>	carriage return	<code>\j</code>	linefeed	<code>\a</code>	attention	<code>\d</code>	end of transmission	<code>\\</code>	backslash	<code>\t</code>	tab
<code>\n</code>	newline (carriage return followed by a linefeed)														
<code>\r</code>	carriage return														
<code>\j</code>	linefeed														
<code>\a</code>	attention														
<code>\d</code>	end of transmission														
<code>\\</code>	backslash														
<code>\t</code>	tab														
Type	<p>Indicates which SMDI integration protocol Amanda is to use.</p> <p>For Bellcore Standard, use 'smdi'.</p> <p>For AT&T System 75 or Definity-G3, use 's75'.</p> <p>For NEC 2000 Message Center Interface use 'necmci'.</p> <p>For Ericsson MD-110, use 'md110'.</p> <p>For the generic driver, use 'generic'.</p> <p>The default appears in <code>install.cfg</code> as: <pre>set smdi_type 'smdi'</pre></p>														

Fax Settings

Parameter	Description
Dial Out Dialstring	<p>When a user is listening to messages over the telephone and discovers that he has a fax message, he dials 72 to send the message to a fax machine followed by the telephone number for the fax machine. Amanda dials this parameter before the system dials the fax machine's number. Usually, it is the dial code for accessing an outside line. The default is '9,'. Use a maximum of 20 characters.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_dl_init '9,'</pre></p>
Direct Connect Command	<p>The string to send (after "AT") to the fax modem to make it connect to a <i>ringing</i> telephone, play the CNG tone, and send the fax. Use a maximum of 20 characters. This parameter defaults to 'H100' which some Zoom modems require.</p> <p>This parameter applies to fax modems only.</p> <p>NOTE: The value of H100 contains four distinct characters: alphabetic H, numeric one, alphabetic O, and numeric zero.</p> <p>The default appears in install.cfg as: <pre>set fax_direct_connect 'H100'</pre></p>
Fax <i>n</i> Extension	<p>Use these parameters to define extension numbers used by the telephone switching system for fax modems or BrookTrout TruFax/200 boards.</p> <p>You can have up to four max modems connected to Amanda serial ports and to telephone switching system extension numbers. Each of these parameters provides the extension number to which a fax modem is connected. For example, if the first fax modem is connected to extension 101, set fax1 to '101'.</p> <p>If you are using Brooktrout TruFax/200 boards, these parameters specify the extension numbers that the telephone switching system uses for first four fax ports (the fax ports on the first twoTruFax cards). If there are more than four TruFax ports, then their extensions must be consecutive and are determined from Fax 4 Extension. For example, the 5th fax port is assumed to be the next extension; the 6th the one after that, etc.</p> <p>By default, no extension is set for a fax modem. Use a maximum of 7 digits.</p> <p>The defaults appear in install.cfg as: <pre>set faxn ''</pre> where <i>n</i> is logical serial port 1, 2, 3, or 4. See serial_port<i>n</i>.</p>
Fax ID	<p>Identifies your fax modem or Brooktrout TruFax/200 board. Use the company name or the telephone number of your fax machine. Use a maximum of 20 characters.</p> <p>By default, no identification is provided. When two faxes connect, they exchange and then display each other's identifying strings.</p> <p>The default appears in install.cfg as: <pre>set fax_id ''</pre></p>
fax_monitor	<p>Notifies the sending mailbox about fax transmission. See the Global Settings table for details about this parameter.</p> <p>This parameter applies to both fax modems and the Brooktrout TruFax/200 board.</p>

Fax Settings (Continued)

Parameter	Description
Flow ID Padding	<p>Controls whether '1111' is added to the front of the fax_id. Many older fax modems need some extra characters as padding. Otherwise, part of the identifying string is cut off.</p> <p>True or False. The default is True, but if '1111' appears on the receiving fax machine, change this parameter to False (so no padding characters are added).</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_id_pad true</pre></p>
Flow Control Command	<p>Defines the Class 2 command to set the type of flow control for the fax modem. The default is '&K3'. Use a maximum of 20 characters.</p> <p>For Use</p> <p>Rockwell-based fax modems&K3 Aceex modems\Q3 X3 &K3 Practical Peripherals modemsX3 &K3 Zoom modems&K3 Smart One 1442 modems&K4 Boca modem M144EW&K3</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_flow_control '&K3'</pre></p>
Flow Initialization Command	<p>String sent to initialize a fax modem (give it a known starting state). The default is '&F0E0'. Use a maximum of 20 characters.</p> <p>Some modems require "&F" rather than "&F0". The "E0" insures that the modem is in non-echo mode, because the command that puts the modem into Class 2 or Class 2.0 mode expects the fax modem to be in non-echo mode first.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_init '&F0E0'</pre></p>
Log Filename	<p>Use this parameter to log data about files (not messages) that are faxed. Amanda creates a log file in the C:\AMANDA directory and logs:</p> <ul style="list-style-type: none"> The names of the files that were faxed The telephone numbers to which the files were sent Whether the fax finished successfully The time of each log entry <p>By default, no filename is used and no log is written. Use a maximum of 20 characters.</p> <p>This parameter applies to both fax modems and the Brooktrout TruFax/200 board.</p> <p>The Amanda Company recommends using 'FAX.LOG'.</p> <p>The default appears in install.cfg as: <pre>set fax_log "</pre></p>

Fax Settings (Continued)

Parameter	Description
Longest Local Extension	<p>The maximum number of digits that can be considered an extension number. The default number is 6. The range is 1 to 6.</p> <p>Users (at the message menu) can send fax messages they have received to a fax machine by entering 72 then a fax machine's telephone number. Amanda applies fax_dl_init (usually '9' for an outside line) if the telephone number entered by the user has more digits than max_local_extension.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set max_local_extension 6</pre></p>
Maximum Retries	<p>Defines the maximum number of times, after the first, to retry sending a fax file if it is unsuccessful. This is used only when sending the fax in two-call mode (where the caller enters a fax telephone number and the fax modem sends the file to that number).</p> <p>This parameter applies to both fax modems and the Brooktrout TruFax/200 board.</p> <p>The range is 0 to 9. The default is 1.</p> <p>The default appears in install.cfg as: <pre>set fax_max_retries 1</pre></p>
Send Speed	<p>The maximum speed that Amanda uses to send faxes.</p> <p>The value can be '0', '1', '3'. Use '0' for 2400, '1' for 4800, and '3' for 9600 bps. Normally a value of '3' works for 486 CPUs at 25MHz or higher (and is the default), but it depends on your computer.</p> <p>If you experience data loss on your faxes, lower this setting.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_send_speed '3'</pre></p>
Receive Speed	<p>The maximum speed for receiving faxes.</p> <p>The value can be '0', '1', '3'. Use '0' for 2400 bps, '1' for 4800 bps, and '3' for 9600 bps. Normally a value of '3' works for 486 CPUs at 25MHz or higher (and is the default). If you experience data loss on your faxes, lower this setting.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_receive_speed '3'</pre></p>
Requeue Interval	<p>Defines the number of minutes to wait between retries.</p> <p>The range is 1 to 99. The default is 5.</p> <p>This parameter applies to fax modems only.</p> <p>See also Maximum Retries.</p> <p>The default appears in install.cfg as: <pre>set fax_requeue_interval 5</pre></p>
Reset Command	<p>Defines the reset command to send to your fax modem when DTR (Data Terminal Ready) is dropped. For most Rockwell-based fax modems, it should be '&D3', which is the default.</p> <p>Possible values: See your fax modem manual. Use a maximum of 20 characters.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_reset '&D3'</pre></p>

Fax Settings (Continued)

Parameter	Description
Reverse Received Data	<p>True or False. Depends solely on the fax modem you are using. For most Rockwell-chipset-based Class 2 modems, this parameter should be True. For most other modems (including Class 2.0), it should be False.</p> <p>If set incorrectly, received faxes cannot be retransmitted or viewed at all. Setting it to True reverses the bits within each received byte, correcting for an oddity in the Rockwell firmware.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_receive_reverse true</pre> </p>
Reverse Send Data	<p>True or False, depends solely on your Class 2 or Class 2.0 fax modem. For most fax modems, this option should be False.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_send_reverse false</pre> </p>
Use Start Character	<p>Controls whether the system waits for the start character or not.</p> <p>True or False. The default is False.</p> <p>When True, Amanda waits for the character.</p> <p>When False, Amanda does not wait.</p> <p>Early drafts of the CCITT Class 2 Specification require that, when sending a fax, the sender wait for the fax modem to send a control character indicating that it is ready for the data to begin. Some modems lose data if the computer starts sending before the fax modem indicates that it's ready to receive. Unfortunately, not all Class 2 fax modems send the start character.</p> <p>This parameter applies to fax modems only.</p> <p>The default appears in install.cfg as: <pre>set fax_start_char false</pre> </p>

Hot Box Settings

Parameter	Description
hot_box	<p>Defines the mailboxes to which Amanda goes when the system detects special PCPM tones. You can have up to 24 hot_boxes. For example, you can configure a hot_box to detect connections from TDD machines for deaf communications.</p> <p>In most cases, only one hot_box is defined to detect fax tones and the remainder are unused.</p> <p>You provide a mailbox next to the corresponding PCPM code (12 to 21). The default mailbox is -1, which means no mailbox. We recommend using 994 as the first hot_box mailbox, but you can use any valid mailbox.</p> <p>NOTE: To add a specific tone to the tone table, it must be one of the first four tones defined, and it must be marked as a terminating tone. Call to be faxed Technical Note 8, "Special Tone Detection."</p> <p>The defaults appear in install.cfg as: <pre>set hot_box -1 n</pre> where <i>n</i> is either -1 or the PCPM code minus 12. (For example, for PCPM code 12, you use 12-12 which is 0. The range for <i>n</i> is from -1 to 9.)</p>

Outdial Settings

Parameter	Description
box_outdial	<p>Controls special mailbox options.</p> <p>You provide a mailbox for each telephone digit that becomes a special mailbox option. While logged into a mailbox, a user presses 7 to reach special options, then a digit, 0-9, depending on what you specify here. Then Amanda executes the tokens in the extension field of the mailbox you specify for that digit.</p> <p>Setting the mailbox to -1 disables that special mailbox option. For example, to allow users to press 7 then 5 to call for the time of day, you might type 149 next to the digit 5. In this case, 149's Extension field should contain the telephone number Amanda dials for the weather (perhaps 9,8531212). Later, users log into their mailboxes and press 75 for the current time. Afterwards they continue other mailbox options.</p> <p>The defaults appear in install.cfg as: set box_outdial -1 x where x is a digit from 0 to 9</p> <p>CAUTION: If you use box_outdial to give users an outside line, you might want to use telephone lines that are toll restricted.</p>

Appendix A: Troubleshooting Amanda

New Problems

Solving a problem often requires sending annotated trace files to The Amanda Company. A customer service representatives need to know what happened, what **SHOULD HAVE** happened, what time, and so on. The trace files need to go to the right people in a timely manner. If a line connected to Amanda goes out of service, The Amanda Company needs trace information on the last activity on that line. You can e-mail your trace files to customer.support@taa.com.

What to Do When...

This section explains what to do when:

- Amanda does not transfer the call
- The caller doesn't hear the Busy or RNA Greeting
- Notification does not work correctly
- Pager company appears not to answer

Amanda Does Not Transfer the Call

If Amanda does not transfer the call, one of the following may be causing the problem.

- | | |
|-----------------|--|
| Problem: | The mailbox has Do Not Disturb turned ON. |
| Solution: | If ON, no transfer is attempted and the caller immediately hears the current greeting of the mailbox. Check the mailbox you are calling to make sure Do Not Disturb is OFF. |
| Problem: | The dial codes are incorrect. |
| Solution: | Run the Setup utility to verify that the dial codes are correct for the telephone switching system Amanda is connected to.

NOTE: The telephone switching system dial codes should be in the system's manual. |
| Problem: | The telephone switching system returns stutter dial tone on a transfer hookflash. |
| Solution: | If stutter dial tone is returned, change the value of the <i>Number of seconds to wait for dial tone detection</i> option to 0 seconds. (Run the Setup utility, selection 1.) |

- Problem:** The telephone switching system does not return dial tone on a transfer hookflash—and it is supposed to.
- Solution:** Do one or more of the following:
- Check your single line station card to see if it is operating properly
 - Use a buttset or single line telephone to verify that the switch is not giving dial tone to the ports
 - Check to see that you have enough Touch Tone Receivers (TTRs, also called DTMF receivers)
- Problem:** Token programming is being used and a hookflash has not been entered in the Extension field.
- Solution:** Review the tokens and insert a hookflash where needed. Remember that an @ as the first character in the extension field suppresses the hookflash.
- Problem:** An additional hookflash is needed because the transfer involves both Centrex lines and a telephone switching system.
- Solution:** Include another F- in the *Dial code to put a caller on transfer hold* option (also known as dl_dtwait). (Run the Setup utility, selection 1.)
- Problem:** The call progress tones are not correct.
- Solution:** You should run should run AccuCall for Windows to correct the call progress tones. See “Using AccuCall for Windows” on page 70.
- Problem:** There may be insufficient intercom paths on older analog telephone switching systems.
- Solution:** Check your telephone switching system’s intercom path capability to see if additional hardware will add more intercom paths.
- Problem:** After dialing the mailbox, the caller hears DTMF tones.
- Solution:** Amanda’s hookflash timer is too short so the caller is not actually being put on hold. Find out what the valid hookflash length is on the telephone system and set Amanda’s hookflash timer to the same value or try to increase Amanda’s flash timer by 25% intervals until you find a time that works for you.
- Problem:** After dialing the mailbox number, the caller is disconnected.
- Solution:** Amanda’s hookflash timer is too long. Try lowering Amanda’s hookflash timer in the telephone system dialcodes or find out what the hookflash timer is on the telephone system and set Amanda’s hookflash to the same value.

Caller Doesn’t Hear the Busy Message or RNA Greeting

If the caller does not hear a busy or RNA (ring no answer) greeting, one of the following may be causing the problem.

- Problem:** Amanda is unable to recognize a busy or RNA tone.
- Solution:** Run AccuCall for Windows to requalify the tones Amanda is listening for. See “Using AccuCall for Windows” on page 70.
- Solution:** Amanda is doing blind transfers rather than supervised transfers.
- Solution:** Check the Extension field of the mailbox you are calling and the *What to dial AFTER dialing the mailbox extension* option (also known as dl_suffix) to see if an H has been added. (Run the Setup utility, selection 1.) If the integration codes are unique, blind transfers are OK, but the stations must be forwarded back to Amanda.
- Problem:** The U token (used to indicate a partially supervised transfer) is unrecognized, so the call is not processed correctly.
- Solution:** Remove the U token and place the call again to see if the greeting can be heard or look at the trace file to see which token within the extension field is failing.

- Problem:** **The integration patterns are incorrect.**
Solution: Run a trace on the system to see if the integration strings coming across the port match the ones Amanda is expecting. (Run the Setup utility, selection 3.)
- Problem:** **The Busy and Ring No Answer integration patterns are identical, so Amanda treats both types of calls the same.**
Solution: Remove one of the integration strings by running the Setup utility, selection 3. Integration strings include:busy ('bbbb')
ring no answer ('rrrr')
- NOTE:** This prevents the caller from hearing one of the two greetings. You should remove the busy integration string (the one including the b's).
- Problem:** **The Busy chain or RNA chain sends the call to another mailbox.**
Solution: Check the mailbox you are calling to be sure the Busy and RNA chains are empty.

Notification Does Not Work Correctly

If notification does not work correctly, one of the following may be causing the problem.

If using roving notification, make sure that all single line ports connected to the voice board ports get dial tone when they go off-hook and also program the phone system to grant all Amanda ports outside dial tone, when a 9 or some other code is dialed.

If using restricted notification, make sure that the designated port has the attributes stated in the above paragraph.

- Problem:** **H in Notify Method field.**
Solution: Check to see that the dial string in the Notify Method field for the mailbox does not contain an H.
- Problem:** **Using %E in a Method field**
Solution: You cannot use %E in a notification Method field unless the Extension field contains only the extension number. To insert an extension number into a Method field when you cannot use %E, do one of the following:
- Use %U instead of %E if the extension number and the mailbox number are the same
 - Put the extension number in the Variable field in the notification record and use %V in the Method field
- Problem:** **Timing problems (pager with voice greeting, Amanda not waiting for dial tone).**
Solution: Call the pager and count the seconds and/or rings it takes to respond. Use the W token to wait an appropriate time and/or number of rings.
- Problem:** **Wrong code for message waiting lights.**
Solution: Check your telephone switching system manual to verify that the codes for turning on a message waiting light from a single line extension are correct.
- Problem:** **Wrong type of notification record.**
Solution: Be sure you selected the right type for the notification record. For example, the notification record that turns the message light off must have the type PICKUP.
- Problem:** **Max Times is set for 0.**
Solution: Make the value in the Max Times field in the Notify record greater than zero.

Pager Company Appears Not to Answer

Problem: When calling some pager companies, Amanda gets only part of a ringback or no ringback sound at all.

Solution: This confuses the Brooktrout version 2 driver. Amanda can treat a PCPM error (which means no ringback was detected) as an answer if both of the following are true:

- The Brooktrout driver's VPP_MAX_START_SILENCE parameter is set to a value appropriate for how long the paging company takes to answer the call and play their prompt (for example, beep-beep-beep). A setting of 625 (which equals 10 sec.) is suggested.
- The Brooktrout driver's VPP_MAX_START_OVERRIDE parameter setting must be 1.

Appendix B: Troubleshooting the Clients

NIC Configuration

If you purchase a NIC other than the preconfigured NIC from The Amanda Company, you may have to run the Setup program for that NIC. The Amanda Company's default settings for its NIC are:

- IRQ 10
- I/O 340
- Unshielded Twisted Pair (UTP) (10BASE T)

Addresses 300 through 305 are not available for the NIC. The voice boards in the system will be using this range (300-305.) If there is a conflict with configuring the I/O address, please remove the voice boards for the duration of the configuration process. Set the I/O for 340 and then reinstall the voice boards.

Common Error Messages

- | | |
|-----------------|--|
| Problem: | <protocol> Not Available |
| Solution: | The protocol required to run the Amanda Clients is TCP/IP. Ask your network administrator to set this protocol for you. |
| Problem: | Server not available. |
| Solution: | The most likely solutions are: <ul style="list-style-type: none">• The computer on which the server runs needs to be turned on• The server may not be enabled |
| Problem: | Server did not respond in allotted time. |
| | The voice server is busy. This may cause a disconnection from the voice server. |
| Solution: | Exit the program and try again later. |
| Problem: | Not enough resources (memory) available. |
| | Too many applications running. |
| Solution: | Start by closing some of the applications you are running and try again. If that doesn't work, completely exit and restart Windows. |
| Problem: | Connection with Server closed.
The voice server is shutting down.
Too many network conflicts.
Other applications may be taking too much processing time for this application to respond in the allotted amount of time. |
| Solution: | Exit the program and try again later. |

Problem: **Session (connection with server) has ended abnormally.**
 The voice server is shutting down.
 Too many network conflicts.
 Other applications may be taking too much processing time for this application
 to respond in the allotted amount of time.

Solution: Exit the program and try again later.

Problem: **Client Connection unavailable.**

Solution: Not enough Client Connections activated on the Amanda voice server.
 To review or change the number of clients, see “Adding Client Connections” on
 page 187 and “Reviewing Client Connections” on page 188. Please contact an Aman-
 da Company representative for a new CCB.

Problem: **Server did not respond in allotted time.**
 No connection with Server with current session number.
 Session number out of range.
 Connection with Server closed.
 Server is unavailable.
 Session (connection with server) has ended abnormally.

Solution: The server and client were never connected or have become disconnected. You need
 to log back on to Amanda Voice Server. Amanda Administrator, Amanda Monitor, and
 Amanda Messenger have Log On... commands on their first menus.

Appendix C: Installing RDSP/x32 Boards

Installation Checklist

Follow this checklist or use it to verify that you have completed all the necessary steps for connecting Amanda to the telephone switching system.

Be sure to...

1. Install properly addressed voice boards
2. Install Amanda software without errors
3. Connect the line cords from voice boards to the telephone switching system
4. Program the telephone switching system for voice mail integration
5. Test each voice board port for answering
6. Run Setup to define dial codes
7. Run Setup to define telephone switching system integration patterns
8. Run Setup to define Amanda system configuration options

ShowJump Utility

Brooktrout provides the ShowJump utility which shows how to configure the jumpers on various types of Brooktrout boards. On Amanda, this utility is stored in the directory where you installed the Brooktrout driver.

With ShowJump, you do not need to read all the configuration information in this chapter.

To use ShowJump:

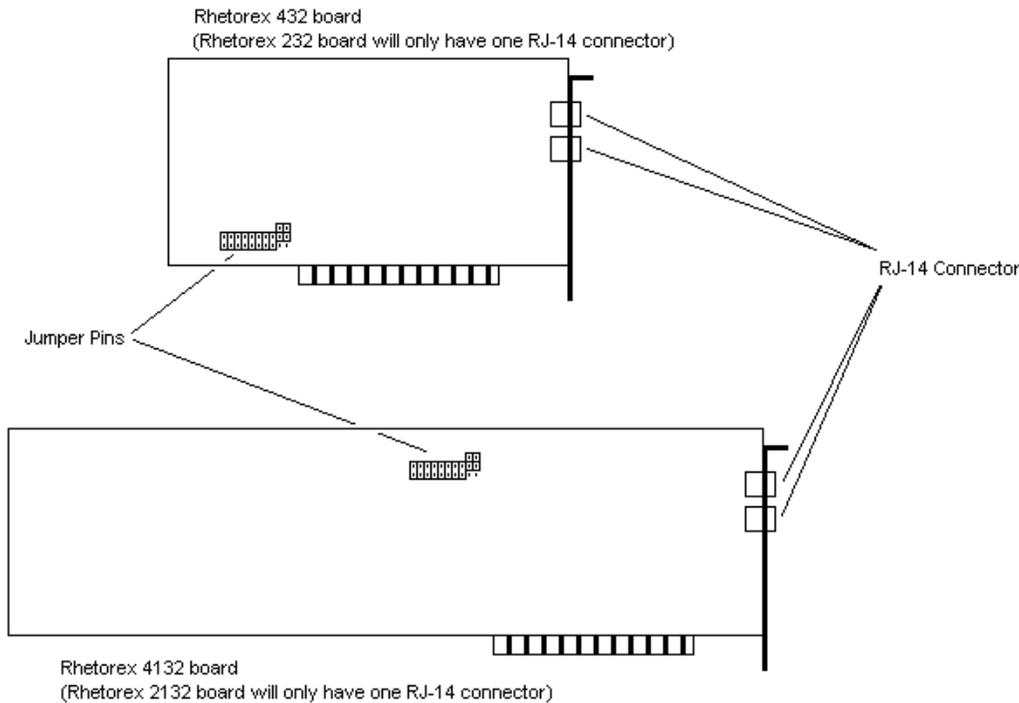
To use ShowJump:

1. Select **Start⇒Programs⇒Brooktrout⇒ShowJump**.
2. Check the jumpering for the correct voice board.
3. Click Exit to exit.

Configuring RDSP/x32 Voice Boards

Amanda recognizes each installed voice board by its unique address. The first voice board has address 300; the second, address 301; the third, address 302, etc. To set a voice board's address, you must configure the pins on the voice board correctly using shorting jumpers. Voice boards are normally shipped with address 300 (board 1) when you receive them. You should check the address and change it, if necessary.

If you look at the voice board with the 4-wire (RJ-14) jacks to the right, the 10 sets of pins are in a row along the top of long voice boards (models 4132 and 2132) or along the bottom of short voice boards (models 432 and 232). The jumper positions are numbered from 0 to 9 from left to right on the long boards. On the short boards, they are labeled as powers of 2 (1, 2, 4, 8, 16, 32, ...). However, use our tables as though both boards were numbered 0 to 9 from left to right.



The following table shows how to set the shorting jumpers for each possible voice board in Amanda.

Board	Hex Address	Jumper Positions									
		0	1	2	3	4	5	6	7	8	9
1	300	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Open	Open
2	301	Open	Closed	Open	Open						
3	302	Closed	Open	Closed	Closed	Closed	Closed	Closed	Closed	Open	Open
4	303	Open	Open	Closed	Closed	Closed	Closed	Closed	Closed	Open	Open
5	304	Closed	Closed	Open	Closed	Closed	Closed	Closed	Closed	Open	Open
6	305	Open	Closed	Open	Closed	Closed	Closed	Closed	Closed	Open	Open

Closed means that two pins are covered/connected by the shorting jumper, and Open means that the two pins are *not* covered/connected by the shorting jumper. In the diagrams in this chapter, the blacked out pin positions represent closed positions.

TIP: Installers often place shorting jumpers over only one pin when the position is Open. This does not connect the pins, but it does prevent losing jumpers.

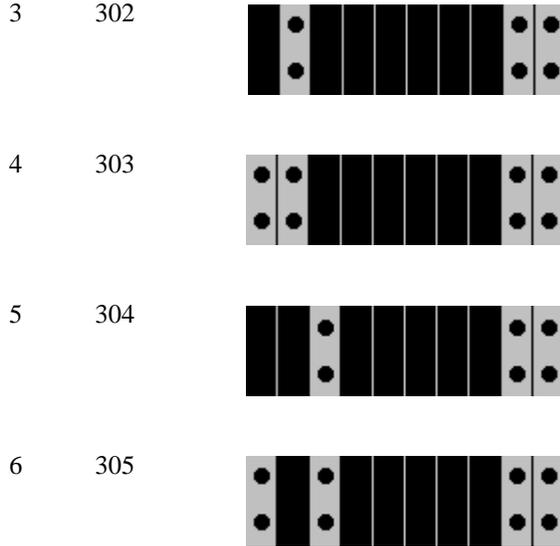
Notice that the jumper positions numbered 3 through 7 are always closed and that the jumper positions numbered 8 and 9 are always open. You will change only the leftmost three jumper positions (those numbered 0, 1, and 2 in the table).

The next table show the jumper positions graphically.

A Graphical View

Board	Hex Address	Jumper Positions
1	300	
2	301	

A Graphical View (Continued)



CAUTION: Do not add or remove shorting jumpers while power is applied to the board.

Installing Voice Boards

After making sure the address for the voice board is correct, you can install it.

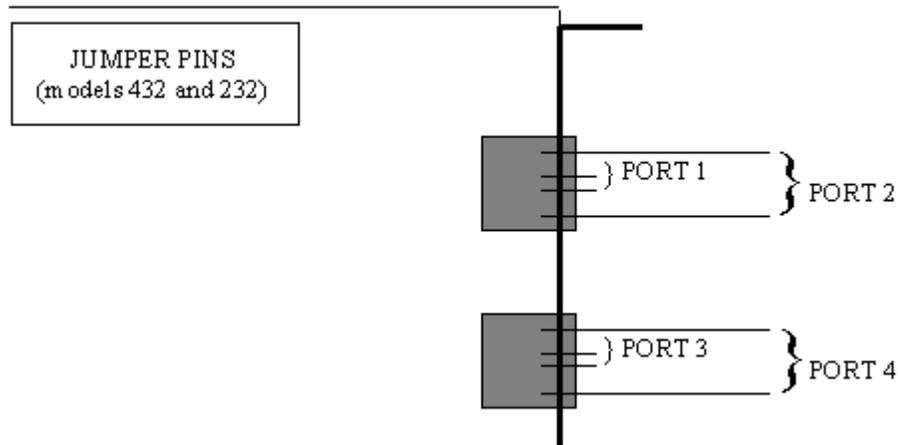
To install the voice board:

1. If this is a new installation, go to step 2. Otherwise, shutdown Amanda from the Main screen:
 - a. Press Alt+S.
 - b. Type in the password. (The default is AMandA with only the first two and the last letter capitalized.)
 - c. Press Enter.
 - d. Press Y (to confirm the shutdown).
 - e. Press Y again (to reconfirm).
 - f. After the DOS prompt C:\AMANDA> appears, *wait 30 seconds* before turning off the power.
2. Turn off the computer's power.
3. Remove the computer cover and locate an available slot. A full length slot is needed for models 2132 and 4132.
4. Remove the back slot cover and install the voice board. If there is a rear card guide, slide the end of the voice board into it properly.
5. Close the computer cover and turn on the power.

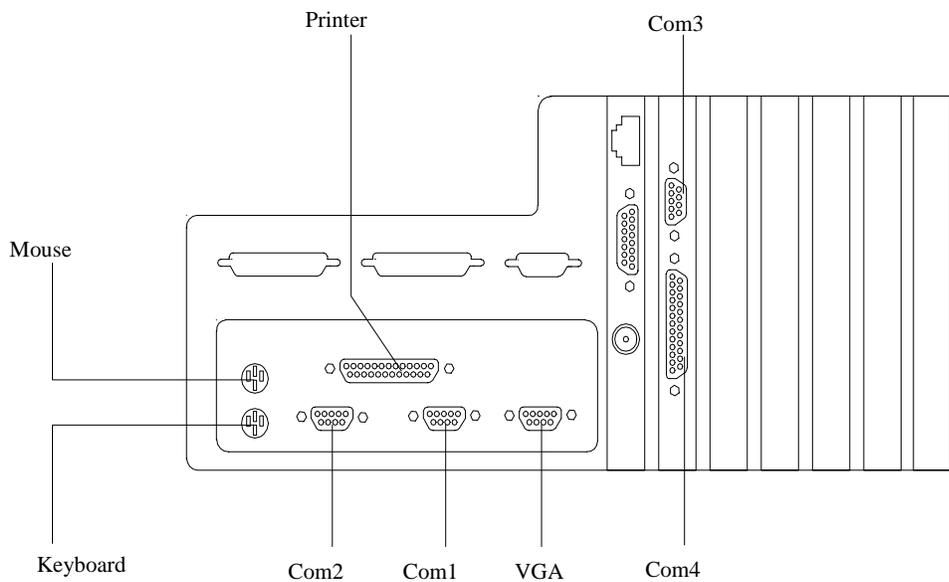
CAUTION: Use an ESD-safe station while configuring and installing your board. Otherwise, static discharge may damage your board.

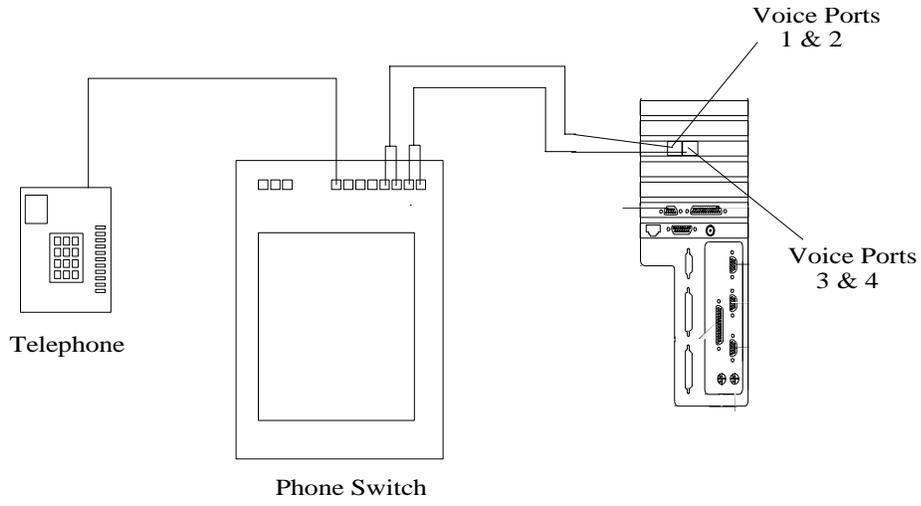
Connecting Ports

You create a port by connecting a telephone line to a voice board. Amanda can support from 2 to 24 ports. On a Brooktrout voice board with two connectors, the top connector represents the first two ports and the bottom connector represents the second two ports for a total of four ports per board. Each connector on a voice board is an RJ-14 modular jack. The inner pair is one port, and the outer pair is the other port.



Ports are numbered consecutively from 1 to 24. Port 1 is connected to the lowest addressed voice board (usually address 300). Each connector on the voice board is linked to your telephone switching system by a standard 4-wire line cord to a standard RJ-14 modular jack which should represent two analog (single-line) extensions.





Appendix D: Installing RDSP/RTNI Boards

Installation Checklist

The RDSP/RTNI two-board combination puts all the Digital Signal Processors (DSPs, specialized CPUs) on one board and provides either an analog or digital telephony interface with the other.

You must jumper and install one RDSP/xx000 (that is RDSP/4000, RDSP/8000, RDSP/12000, RDSP/16000, RDSP/24000) and one of the following boards:

- The Brooktrout RTNI-xATI board that provides an analog telephony interface
- The Brooktrout RTNI-2T1 board that provides a digital telephony interface

You must connect the interface board to the RDSP/x000 board using the MVIP bus cable, which will transfer voice data between the two boards. The connector cable for this is supplied with the board set. Since the RDSP/x000 board does not provide its own clock, it also receives timing information from the bus.

In addition, you must connect the RTNI board to the telephone network.

Follow this checklist or use it to verify that you have completed all the necessary steps for connecting Amanda to the telephone switching system.

Be sure to...

1. Configure an RDSP/x000 board:
 - a. Configure MVIP Streams
 - b. Configure the MVIP Termination
 - c. Configure the Base I/O Port
2. Configure an RTNI-xATI board:
 - a. Configure the MVIP Termination
 - b. Configure the Base I/O Port
 - c. Configure the Line Interface
3. Configure an RTNI-2T1 board:
 - a. Configure the Base I/O Port
 - b. Configure the IRQ Jumpers
 - c. Configure the Line Interface
4. Install the boards
5. Install the MVIP cable

6. Install Amanda software without errors
7. Connect the line cords from the voice boards to the telephone switching system
8. Test each voice board port for answering
9. Run Setup to define dial codes
10. Program the telephone switching system for voice mail integration
11. Run Setup to obtain tone patterns
12. Run Setup to define telephone switching system integration patterns
13. Run Setup to define Amanda system configuration options

Requirements

Before installing the RDSP/x000 board, verify that the host system meets each of the following requirements:

- Bus speed is 8 MHz with 0 wait states or 10 MHz with 1 wait state
- Can provide +5v 3.0 A power to the RDSP/x000 board

These requirements are in addition to those for the system.

ShowJump Utility

Brooktrout provides the ShowJump utility which shows how to configure the jumpers on various types of Brooktrout boards. On Amanda, this utility is stored in the directory where you installed the Brooktrout driver.

With ShowJump, you do not need to read all the configuration information in this chapter.

To use ShowJump:

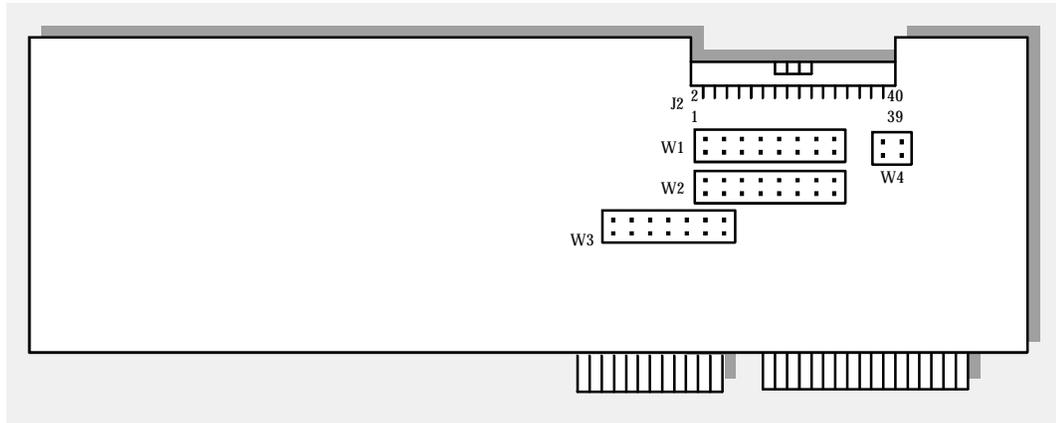
1. Select **Start⇒Programs⇒Brooktrout⇒ShowJump**.
2. Check the jumpering for the correct voice board.
3. Click Exit to exit.

Configuring an RDSP/x000 Voice Board

The following figure shows the locations of the jumper blocks and connectors on the RDSP/x000 board. The tables below it describe those jumper blocks and connectors and show how to jumper the RDSP/x000 board for use with Amanda.

Later sections of this chapter offer more detailed explanations about how to jumper this board.

The RDSP/x000 Board



Jumper Block and Connector Information

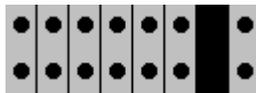
Table 1: Jumper Positions for Use with Amanda

Label	Type	Description	1	2	3	4	5	6	7	8
W1	Jumper block	DSi MVIP stream	Open	Open	Open	Open	Open	Open	Closed	Open
W2	Jumper block	DSo MVIP stream	Open	Open	Open	Open	Open	Open	Closed	Open
W3	Jumper block	Base I/O port	Closed	Closed	Closed	Closed	Closed	Open	Open	
W4	Jumper block	MVIP termination	Closed	Closed						
J2	Connector	MVIP bus								

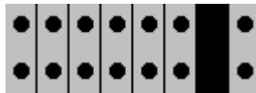
Closed means that two pins are covered/connected by the shorting jumper, and Open means that the two pins are *not* covered/connected by the shorting jumper. In the diagrams in this chapter, the blacked out pin positions represent closed positions.

TIP: Installers often place shorting jumpers over only one pin when the position is Open. This does not connect the pins, but it does prevent losing jumpers.

W1



W2



W4

W3



Understanding MVIP Streams

MVIP is a standard protocol for connecting PC resources. The MVIP bus provides both physical and logical half-duplex internal connections for up to 512 resources.

The MVIP bus is segmented into 8 bidirectional serial data streams, each composed of a pair of unidirectional streams. Each unidirectional stream can carry 2.048 megabits of data per second, partitioned by Time Division Multiplexing into 32 64-kilobits-per-second (Kb/sec.) time slots. A single MVIP time slot has sufficient bandwidth to do either of the following:

- Carry PCM voice data
- Be a 64 Kb/sec. pipe for data communications

Numbering schemes for both streams and time slots start with 0. An MVIP board is configured to use one of the eight streams on the bus. The port associated with each time slot is made up of two half-duplex connections. During configuration, each resource on the board is mapped to a discrete time slot of the stream.

For example, the stream on an RDSP/24000 board automatically maps time slots 1, 9, 17, and 25 to RDSP resources to 1, 2, 3, and 4, respectively. The port associated with Time Slot 4 has two halves: the input designated DSi4, and the output DSo4. The network interface board is the point of reference for input and output.

Configuring MVIP Streams

Each RDSP/x000 board uses two MVIP streams: one for receiving and one for transmitting. The RDSP/x000 board can receive on one of the DSi streams (DSi0 through DSi7) and can transmit on one of the DSo streams (DSo0 through DSo7). Each RDSP/x000 board is factory-configured to use streams DSi6 and DSo6. The Amanda Company recommends that you **change** these settings.

The DSi stream jumper block consists of a pin position for each DSi stream. If you look at the board with the bracket on your right, the leftmost pin position corresponds to DSi0, the next pin position corresponds to DSi1, and so on. The rightmost pin position corresponds to DSi7.

The DSo stream jumper block has the same construction as the DSi stream jumper block with the leftmost pin position corresponding to DSo0 and the rightmost pin position corresponding to DSo7.

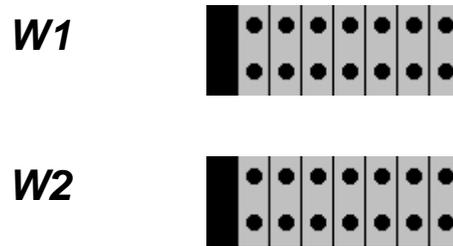
To configure the DSi and DSo streams:

1. Find the jumper block for the DSi and DSo streams on the board.

The jumper block for the DSi MVIP stream is labeled W1. It is below the MVIP connector if the bracket is to your right.

The jumper block for the DSo MVIP stream is labeled W2. It is below the MVIP connector and the W1 block if the bracket is to your right.

- The settings should be as shown below:

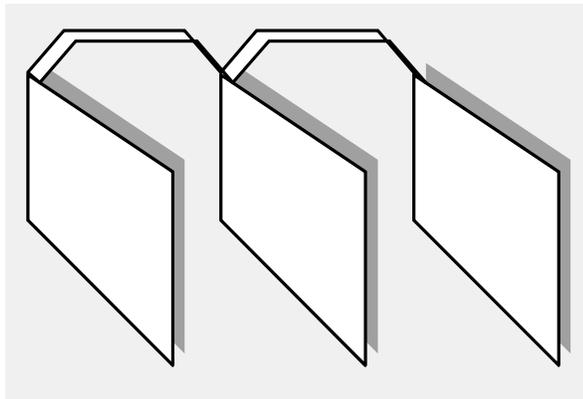


- Only the first pin position should be closed with a shorting jumper.

CAUTION: Do not add or remove shorting jumpers while power is applied to the board.

Configuring the MVIP Termination

Each RDSP/x000 can terminate the C2 MVIP and C4 MVIP bus signals. In a series of boards that are on an MVIP bus, the boards at both ends must terminate C2 and C4 while the other boards must not terminate the signals. For example, the following figure shows three boards on an MVIP bus. The left and right boards must terminate the MVIP bus signals while the middle board must not. Each RDSP/x000 is configured at the factory to terminate both C2 and C4.



The MVIP termination block consists of two pin positions, one for the C2 and one for the C4. If you look at the board with the bracket on your right, the pin position on the left corresponds to C4 and the pin position on the right corresponds to C2. The Amanda Company assumes that you are installing only one RDSP/x000 board and, therefore, that it should terminate both signals.

To terminate both MVIP bus signals:

- Find the MVIP termination block on the board.

It is labeled W4 and is below the MVIP connector at the right of the W1 block if the bracket is to your right.

- For use with Amanda, close both signals' pin positions using shorting jumpers (as shown below).



W4

CAUTION: Do not add or remove shorting jumpers while power is applied to the board.

Configuring the Base I/O Port

Each RDSP/x000 uses 47 I/O ports in addition to its base I/O port. Seven of these additional I/O ports are contiguous to the base I/O port. For example, if the RDSP/x000's base I/O port is 300H, then the seven contiguous I/O ports are 301H, 302H, 303H, 304H, 305H, 306H and 307H. The RDSP/x000 also uses five additional I/O ports offset from the base I/O port and each of its seven contiguous I/O ports:

- I/O port plus 400H
- I/O port plus 800H
- I/O port plus C00H
- I/O port plus 1000H
- I/O port plus FC00H

Each RDSP/x000 board is factory-configured to use base I/O port 300H. If you are installing more than one RDSP/x000 board, you need to change the base I/O ports so that each board has a unique base I/O port. If you are installing only one RDSP/x000 board, you need to change its base I/O port only if there is an I/O port conflict with another device.

Each RDSP/x000 must use a base I/O port in the range 0000H through 3FFH. The Amanda Company assumes that you are installing only one RDSP board and recommends that you use base I/O port 300H.

To configure the base I/O port:

- Find the jumper block for the base I/O port.

It is labeled W3 and is below the W2 block if the bracket is to your right.

- Set W3 for use with Amanda as shown below.

Close the five positions on the left using shorting jumpers and open the two positions on the right.

W3



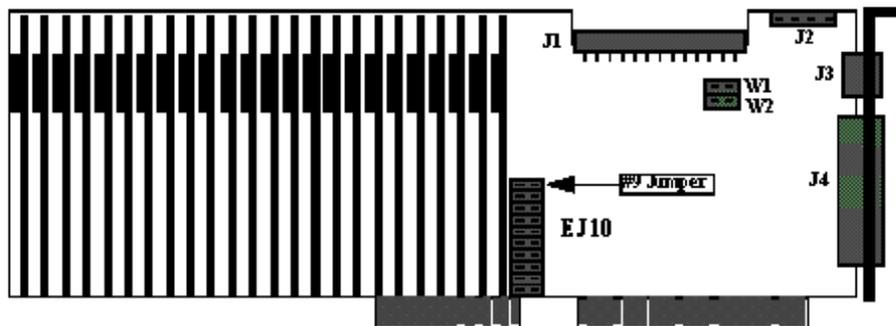
Row	Hex	Jumper positions						
	Address	0	1	2	3	4	5	6
1	300	Closed	Closed	Closed	Closed	Closed	Open	Open

CAUTION: Do not add or remove shorting jumpers while power is applied to the board.

Configuring an RTNI-xATI Voice Board

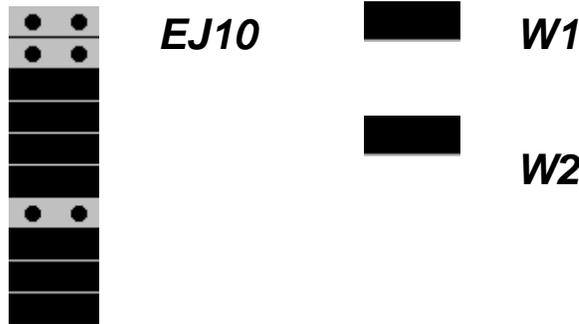
An RTNI-xATI board's main function is connecting any line resource with any other line or MVIP resource. This is commonly called switching. Your RTNI-xATI board provides Analog-to-MVIP switching. The line resource for your ATI board is analog, but only digital PCM signals can be switched, so the board must convert the incoming analog signal to PCM prior to switching. This conversion is made by the board's loop start module which links the MVIP bus and a trunk line. Amanda uses only the linking function and not the switching function of MVIP.

The following figure shows the locations of the jumper blocks and connectors on the RTNI-xATI board. The tables below it describe those jumper blocks and connectors. They also show how to jumper the RTNI-xATI board for use with Amanda.



	Label	Type	Description	Jumper Settings
Jumpers	EJ10	Jumper block	Base I/O Address	Open Open Closed Closed Closed Closed Open Closed Closed Closed
	W1	Jumper block	MVIP Termination	Closed
	W2	Jumper block	MVIP Termination	Closed
Connectors	J1	Connector	MVIP bus	
	J4	Connector	Telephony Cable	

Closed means that two pins are covered/connected by the shorting jumper, and Open means that the two pins are *not* covered/connected by the shorting jumper.



Configuring the MVIP Termination

The MVIP termination block consists of two pin positions, one for the C2 and one for the C4. The top pin position (labeled W1) corresponds to C4 and the next pin position (labeled W2) corresponds to C2.

You should close both pin positions. The Amanda Company assumes that you are installing only one RTNI-xATI board along with an RDSP/x000 board. In this case, this board should terminate both signals.

To terminate both MVIP bus signals:

1. Find the MVIP termination block on the board.

One pin position is labeled W1 and the other is labeled W2. They are located just below the J1 connector with the bracket on your right.

- For use with Amanda, close both signals' pin positions using shorting jumpers (as shown below).



CAUTION: Do not add or remove shorting jumpers while power is applied to the board.

Configuring the Base I/O Port

Each voice board must have a unique base I/O port. Each RTNI-xATI board is factory-configured to use base I/O port 308H. It uses the base I/O port and three others, calculated as offsets of the base I/O port. These I/O ports are:

- Base I/O port
- Base I/O port plus 400H
- Base I/O port plus 800H
- Base I/O port plus C00H

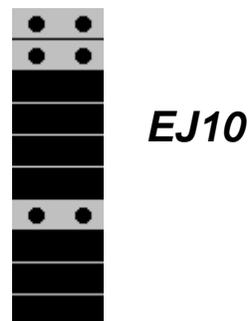
For example, if the RTNI-xATI board's base I/O port is 308H, then the ATI board uses the following I/O ports:

- 308H
- 708H
- A08H
- E08H

If you are installing only one RTNI-xATI board, you must change its base I/O port only if another device in the computer has the same I/O port. The Amanda Company recommends that you use 308H.

To set the base I/O port:

- Locate the base I/O port jumper block.
It is labeled EJ10.
- For use with Amanda, set the jumpers as shown below.



CAUTION: Do not add or remove shorting jumpers while power is applied to the board.

Configuring the Line Interface

The line interface configuration of your RTNI-xATI board determines which CO provisions it requires. You must match the line connection to your line interface module configuration as follows:

Interface Type: 2-Wire Loop Start

USOC Jack Connector: RJ21X

REN/Service Code: X.XB

Facility Interface Code: 02LS2

The Loop Start module links your MVIP bus and a telephone line from your CO or PBX. For a loop start, you alert your CO to an outbound call by connecting the tip to the ring, thereby closing the loop and allowing current to flow.

Physical Connections

After you have installed the board (as explained in “Installing the Boards” on page 251), use the cable supplied with the RTNI-xATI board to connect the Amanda system to the telephone network. Connect the 62-pin connector to the RTNI-xATI board and the Amphenol 50-pin connector to a 66 Block.

Pinout Table for Amphenol 50-pin Connector

Pin	Description-Color code	Pin	Description-Color code
26	T1: Channel 1 Tip-white/blue	13	R13: Channel 13 Ring-green/black
1	R1: Channel 1 Ring-blue/white	39	T14: Channel 14 Tip-black/brown
27	T2: Channel 2 Tip-white/orange	14	R14: Channel 14 Ring-brown/black
2	R2: Channel 2 Ring-orange/white	40	T15: Channel 15 Tip-black/gray
28	T3: Channel 3 Tip-white/green	15	R15: Channel 15 Ring-gray/black
3	R3: Channel 3 Ring-green/white	41	T16: Channel 16 Tip-blue/yellow
29	T4: Channel 4 Tip-white/brown	16	R16: Channel 16 Ring-yellow/blue
4	R4: Channel 4 Ring-brown/white	42	T17: Channel 17 Tip-yellow/orange
30	T5: Channel 5 Tip-white/gray	17	R17: Channel 17 Ring-orange/yellow
5	R5: Channel 5 Ring-gray/white	43	T18: Channel 18 Tip-yellow/green
31	T6: Channel 6 Tip-red/blue	18	R18: Channel 18 Ring-green/yellow
6	R6: Channel 6 Ring-blue/red	44	T19: Channel 19 Tip-yellow/brown
32	T7: Channel 7 Tip-red/orange	19	R19: Channel 19 Ring-brown/yellow

Pinout Table for Amphenol 50-pin Connector (Continued)

Pin	Description-Color code	Pin	Description-Color code
7	R7: Channel 7 Ring-orange/red	45	T20: Channel 20 Tip-yellow/gray
33	T8: Channel 8 Tip-red/green	20	R20: Channel 20 Ring-gray/yellow
8	R8: Channel 8 Ring-green/red	46	T21: Channel 21 Tip-violet/blue
34	T9: Channel 9 Tip-red/brown	21	R21: Channel 21 Ring-blue/violet
9	R9: Channel 9 Ring-brown/red	47	T22: Channel 22 Tip-violet/orange
35	T10: Channel 10 Tip-red/gray	22	R22: Channel 22 Ring-orange/violet
10	R10: Channel 10 Ring-gray/red	48	T23: Channel 23 Tip-violet/green
36	T11: Channel 11 Tip-black/blue	23	R23: Channel 23 Ring-green/violet
11	R11: Channel 11 Ring-blue/black	49	T24: Channel 24 Tip-violet/brown
37	T12: Channel 12 Tip-black/orange	24	R24: Channel 24 Ring-brown/violet
12	R12: Channel 12 Ring-orange/ black	50	Analog Ground-violet/gray
38	T13: Channel 13 Tip-black/ green	25	BAT-: Negative battery terminal-gray/ violet

Installing the Boards

Use the following procedure to install one or more RDSP/RTNI boards.

To install the board:

1. Turn off your computer and remove the cover.
2. Locate free bus slots that have 16-bit-compatible, ISA bus edge connectors.
3. Carefully align the boards with the slot and firmly seat the boards into the computer.
4. Use a bracket screw to securely fasten the boards' brackets.
The bracket provides grounding for the board.
5. Turn the computer back on.
6. From the C:> DOS prompt, follow the installation instructions in "Appendix F: Installing Amanda."

CAUTION: Use an ESD-safe station while configuring and installing your board. Otherwise, static discharge may damage your board.

Installing the MVIP Cable

After installing an RDSP/x000 board you need to connect the MVIP bus cable to each board.

This 40-pin MVIP-compliant connector is at the top of the board if you look at the board with the bracket to your right. Use the MVIP connector to connect the RDSP/x000 board to a telephone network interface board.

If your MVIP connector cable has more than two connector positions, use the two end-positions for this installation.

Configuring Amanda to Use the ATI Board

There are a couple of Amanda's configuration options that must be set correctly when you are using an RTNI-xATI voice board. See "Logging On to Amanda" on page 5 for information about using the Setup utility to set or check the following global settings parameters.

The parameter **ati_mode** must be set to true. Then Amanda makes the connections needed for the ATI board.

Be aware that RTNI-xATI voice boards cannot detect rotary. If you use an RTNI-xATI voice board, you must leave the **rotary** parameter set to false.

Appendix E: Other Cards and Devices

Installing a LAN Card

To use Amanda as a voice server, you must install a LAN card, also called a network interface card (NIC). The card must be NE2000 compatible.

If you have any problems with the installation and you purchased the NIC from The Amanda Company, please contact Customer Service.

To install a LAN card:

1. Configure the card.

If you purchased your LAN card from The Amanda Company, it is preconfigured for IRQ 10, I/O address 340H, and is to be used with unshielded twisted pair (UTP) cable. These are the default settings.

If you purchase another LAN card, use this IRQ and address. Follow that LAN card's instructions for installation.

NOTE: Addresses 300 through 305 are not available for the LAN card. See "Appendix C: Installing RDSP/x32 Boards" and "Appendix D: Installing RDSP/RTNI Boards" for more information.

2. If this is a new installation, go to step 3. Otherwise, shutdown Amanda from the Main screen:
 - a. Press Alt+S.
 - b. Type in the password. (The default is AMandA with only the first two and the last letter capitalized.)
 - c. Press Enter.
 - d. Press Y (to confirm the shutdown).
 - e. Press Y again (to reconfirm).
 - f. After the DOS prompt C:\AMANDA> appears, *wait 30 seconds* before turning off the power.
3. Turn off the computer's power.
4. Remove the computer cover and locate an available slot.
5. Remove the back slot cover and install the LAN card. If there is a rear card guide, slide the end of the LAN card into it properly.

CAUTION: When installing your LAN card, you must be careful about electrostatic discharges (ESD). Use an ESD-safe environment, a wrist guard, and so on. Otherwise, static discharge may damage your card.

6. Connect the LAN card to the rest of the network.

The Amanda Voice Server sends and receives TCP/IP commands, and can be part of any network that supports TCP/IP.

7. Reassemble the computer and restart it by turning the power switch on.

Using a UPS

The Amanda Company strongly recommends the installation of an uninterrupted power supply (UPS) with every Amanda system. It provides clean power to Amanda and keeps the probability of a computer lockup (and the resulting loss of data or even loss of the system) as low as possible.

According to some reports, power problems are the primary reason why computers lose data (45.3%). The next closest cause is storm damage at 9.4%. (Human error and sabotage rank eighth with 3.2%.)

According to a Bell Laboratories study entitled "The Quality of US Commercial AC Power," the main categories of AC power irregularities across the nation are sags (or brownouts), power surges, blackouts, and overvoltages. The best solution is a UPS, which can handle 99.3% of these power problems.

A UPS is a special type of AC power line conditioner. When compared to the other devices available, such as surge suppressors, filters, isolation transformers, tap changing regulators, and voltage regulating transformers, the UPS is rated highest by Bell Laboratories and is relatively inexpensive.

The cost of installing a UPS is nominal when compared to the cost of repairing a damaged Amanda system or compared to the loss of confidence from callers and internal Amanda users.

For more information about what causes power irregularities and what damage they can do to Amanda, call to be faxed Technical Note 10, "The Importance of a UPS."

Appendix F: Installing Amanda

Overview

To install Amanda, you perform the following tasks:

1. Install the Brooktrout voice boards.
See Appendix C of *Installing Amanda@Work.Group/Windows* for details.
2. Install a LAN card.
See Appendix E of *Installing Amanda@Work.Group/Windows* for details.
3. Install Windows NT 4.0 and NT Service Pack 5 (or whatever is most recent).
4. Change the boot.ini file in a text editor.
5. Configure COM3 and COM4.
6. Maximize throughput.
7. Install Brooktrout drivers from the Amanda CD.
8. Do a full installation of Amanda from the Amanda CD.
9. Install pcANYWHERE from the Amanda CD.
10. Install the hard lock driver from the Amanda CD.
11. Install clients on the appropriate workstations.

For example, you will want Amanda Administrator and Amanda Monitor on the administrator's workstation. User's workstations would normally install Amanda Messenger (or the new 32-bit application, Amanda Unified Messenger), Amanda Dialer, and Amanda Fax (which comes in both a 16 and 32-bit version).

This document explains how to perform these steps or refers you to other documentation for the details.

Installing NT

To install NT, you need the NT CD-ROM, the NT Service Pack 5 CD-ROM, and three setup disks. If there is a more recent release, use that.

To create the three setup disks:

1. Insert the NT CD-ROM in a working computer and have ready three empty formatted floppy disks.
2. From the I386 directory, run the command:
`WINNT /OX`
3. Follow the directions on the screen.

To install NT:

1. Insert the first setup disk into drive A on the computer to be installed.
2. Insert the Windows NT CD into the CD-ROM drive.
3. Start the computer.
4. Follow the directions on the screen.
For example, you will be asked to insert setup disk number 2.
Eventually, the Welcome to Setup screen appears.
5. Press Enter.
6. Continue to follow the directions on the screen.
For example, you will be asked to insert setup disk number 3.
You will also read the licensing agreement and press F8 to accept it.
This procedure does not attempt to show each step of the installation process, but it does indicate when you must take some action other than the default.
7. If no mouse is detected at the screen that lists your PC and its devices, start this procedure over again.
(You can provide data for your mouse, but it is better to start over at step 1.)
8. When offered a choice of the FAT or NTFS file system: Select NTFS then press Enter.
9. When asked where to install NT files, use the default destination:
`C:\WINNT`
Then press Enter.
10. Allow NT to examine your hard drive for corruption, and so on.
11. When asked, remove the last setup disk from drive A and the CD from the CD-ROM drive. Then press Enter.

12. Let the computer reboot itself. (This happens twice as it switches from a FAT to an NTFS file system.)
13. Then reinsert the CD.
14. Follow the directions on the screen again.
15. When the Name and Organization dialog box appears, type in a name and organization, then click Next>.
16. Type the CD key found on the CD then click Next>.
17. Select a Computer Name, such as AMANDASERVER, that will work for your network. Click Next>.
18. The Server Type should be Stand-Alone Server. Click Next>.
19. For the Administrator Account, use the password AMandA (be sure to use the case shown here for each letter) and confirm it.
20. Do not make an emergency repair disk at this time. Select No then click Next>.
21. From the Select Components dialog box, clear the Accessibility Options check box.
22. Select the Windows Messaging check box.
23. Click Details.... The All Components check box should be selected.
24. Click OK to return to the Select Components dialog box.
25. Click Next> until you come to the dialog with the Install Microsoft Internet Information Server check box.
26. Clear this check box then click Next>.
27. At the Network Adapter dialog box, click Select From List...
28. At the Select Network Adapter dialog box, insert the first 3COM disk then click Have Disk....
29. At the Insert Disk dialog box, click OK.
30. At the Select OEM Option dialog box, select 3Com EtherLink XL Adapter (3C900) then click OK.
31. Click Next>.
32. At the Network Protocols dialog box, clear the NWLink IPX/SPX Compatible Transport check box and select the NetBEUI Protocol and TCP/IP Protocol check boxes.
33. Click Next> until you reach the Network Card Setup dialog box.
34. At the TCP/IP Setup dialog box for the DHCP server, click No.
35. At the TCP/IP Properties dialog box, you need the assistance of the network administrator (unless you are the network administrator).

You will need an IP address and perhaps identify a default gateway.

The DHCP tab's contents is up to the administrator.

Usually, on the WINS tab, you will clear the Enable LMHosts check box.

36. Insert the second 3COM disk as directed.
37. At the Show Bindings dialog, click Next>.
38. At the Windows NT Server Setup dialog box, you may want to join this computer to a domain or leave it as a workgroup. This is up to the administrator.
39. Click Next> and then Finish.
40. At the Date/Time Properties dialog box, select the appropriate date and time. Click Close.
41. Follow the directions on the screen for testing the Display Properties dialog box.

Modifying Boot.ini

The Boot.ini file is on the C: drive at the root. You must modify it so that every COM port that is used for something other than a mouse has the /NoSerialMice parameter.

To modify Boot.ini:

1. Double-click My Computer.
2. Double-click the C: folder.
3. Right-click Boot.ini to display the pop-up menu.
4. Select Properties.
5. From the Properties dialog, clear the Read-only check box so you can modify the file.
6. Click OK.
7. Double-click Boot.ini to display it in NotePad.
8. To the line that reads:

```
multi(0)disk(0)rdisk(0)partition(1)\WINNT="Windows NT  
Server Version 4.00"
```

Add (for example if both COM3 and COM4 do not have mice attached):

```
/NoSerialMice=COM3,4
```

If no mice are used at all, use:

```
/NoSerialMice
```
9. Save the file and exit the text editor.
10. Make the file read-only again using the Properties dialog box.

Configuring the Ports

To configure the ports:

1. Select the Start menu, Settings, then Control Panel.
2. From the Control Panel, select the Ports icon.
3. From the Ports dialog box, double-click COM3.
4. From the Settings for COM3 dialog box, select the Baud Rate of 115200.
5. Click Advanced.
6. From the Advanced Settings for COM3 dialog box, select 11 as the IRQ.
7. Click OK or Done until you return to the Ports dialog box.
8. Double-click COM4.
9. From the Settings for COM4 dialog box, select the Baud Rate of 115200.
10. Click Advanced.
11. From the Advanced Settings for COM4 dialog box, select 9 as the IRQ.
12. Click OK or Done until you exit.

Maximizing Throughput

To maximize throughput:

1. Right-click the Network Services icon on the desktop to display the pop-up menu.
2. Select Properties.
The Server Properties dialog box appears.
3. From the Services tab, double-click Server.
4. Then select the Maximize Throughput For Network Applications option button.
5. Click OK then Close.
6. Do **not** restart at this time.

Installing Windows NT Service Pack

To install Windows NT Service Pack 5 (or whatever is the latest):

1. Insert the CD-ROM for Service Pack 5 (or whatever is the latest).
2. Locate and start the file Nt4spx_i, where *x* stands for the latest service pack, for example, Nt4sp5_i.
3. Follow the directions on the screen.

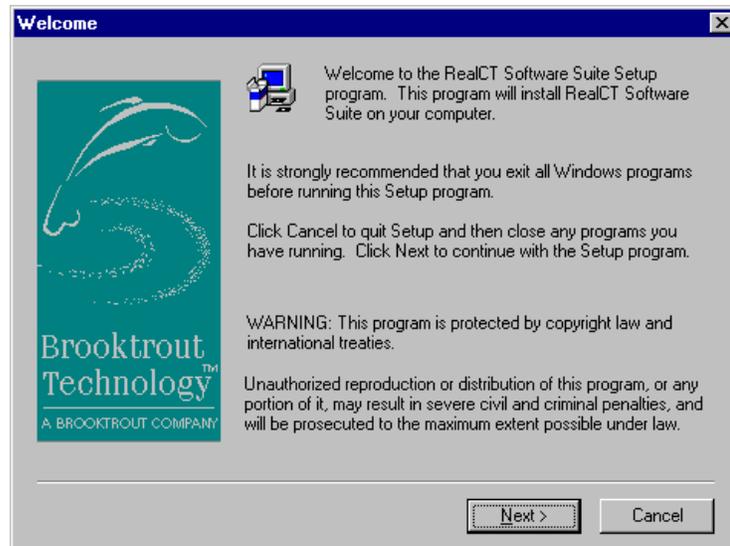
Reinstalling the Brooktrout Drivers

Next you must reinstall and reconfigure the Brooktrout drivers. Makes sure that your voice boards are properly jumpered and in the computer.

To install the Brooktrout drivers:

1. Open the Brooktrout232 folder on the Amanda CD and run setup.exe.

The Welcome dialog box appears.

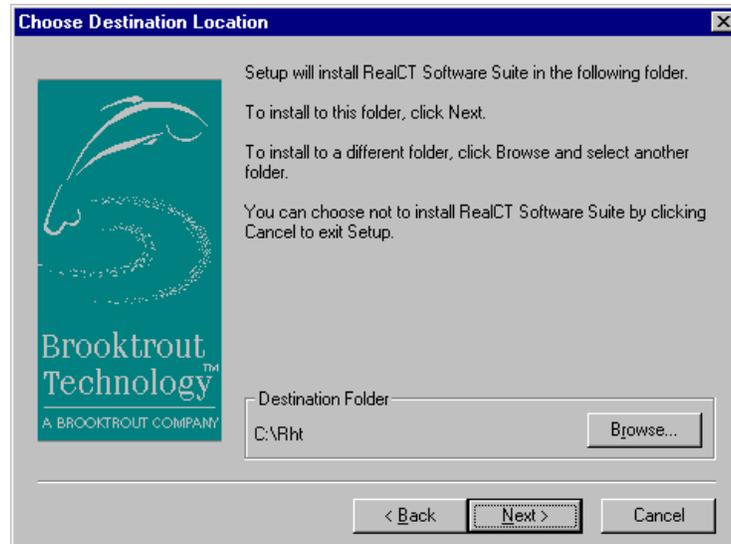


2. Click Next>.

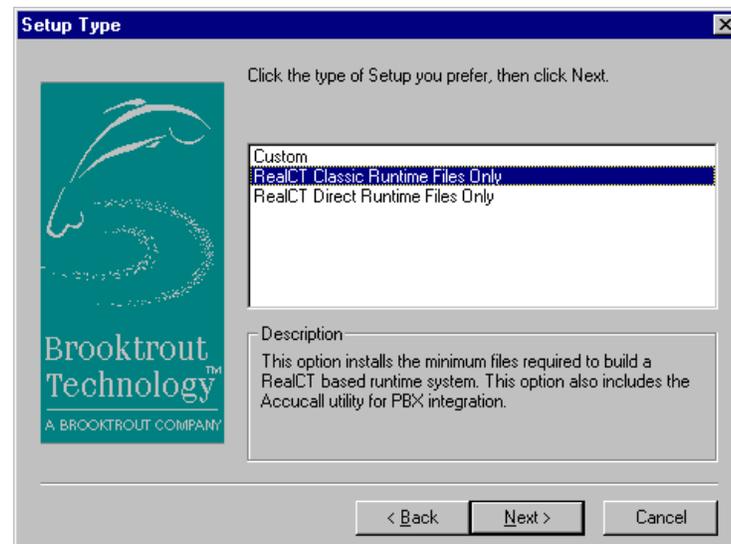
The Software License Agreement dialog box appears.

3. Click Yes to continue.

The Choose Destination Location dialog box appears.

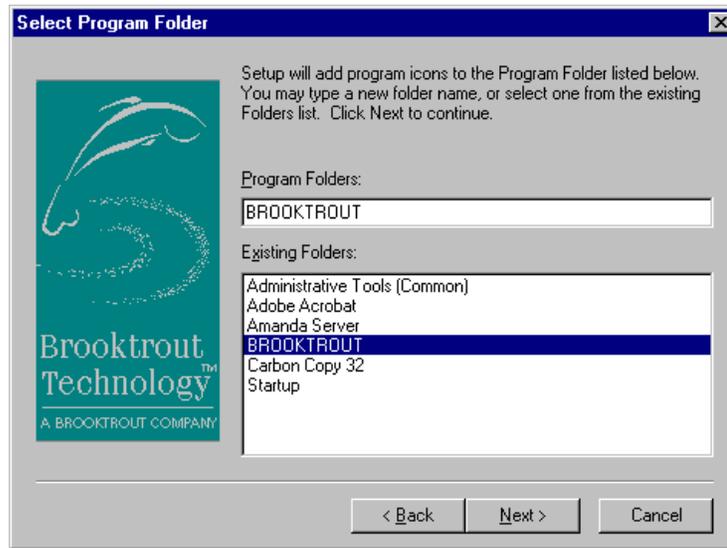


4. Use the default destination folder (C:\Rht) then click Next>.
The Setup Type dialog box appears.



5. Select RealCT Runtime Files Only from the list box then click Next>.

The Select Program Folder dialog box appears.

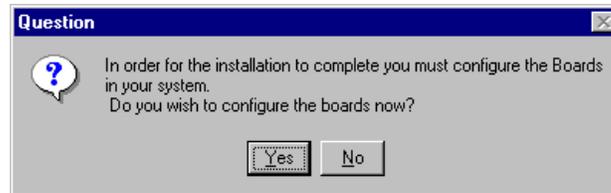


6. Use Brooktrout, the default setting for the program folder, and click Next>.

The Start Copying Files dialog box appears.

7. Click Next>.

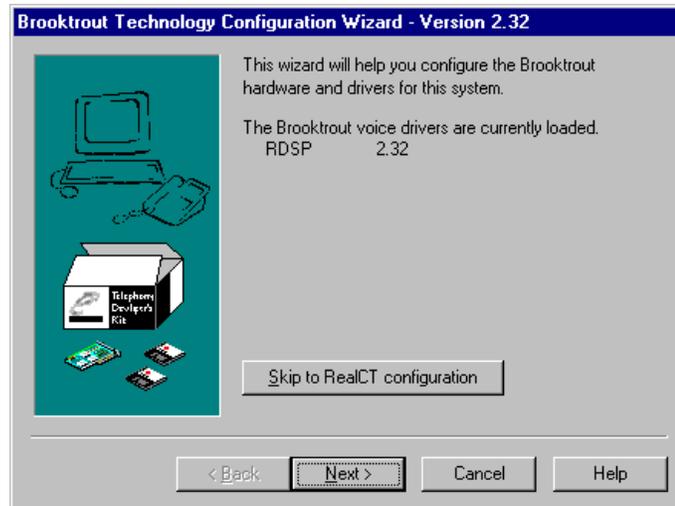
After the files are copied to your computer, the Question dialog box asks you to configure the drivers.



8. Click Yes to start the Brooktrout Configuration Wizard.

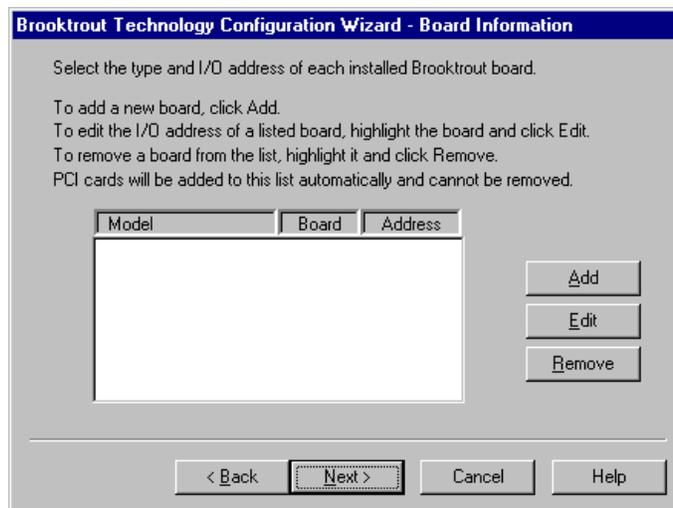
NOTE: You can also start the configuration wizard from the Start menu.

The Brooktrout CTP Configuration Wizard - Version 2.32 dialog box appears.



9. Click Next>.

The Brooktrout CTP Configuration Wizard - Board Information dialog box appears.



This dialog box is initially empty. The first sample shows a two-board six-port system using a 432 voice board and a 232.

10. To add a new board, click Add.

The Add a Board dialog box appears.

Add a board ? X

Select the Board Type and enter the Input/Output (I/O) address for the board. The I/O address you select must not be used by another device in this system.
WARNING:
Your hardware may not be set to use the I/O address listed. To change the hardware settings, see the documentation that came with your hardware.

Board Type

VP (RDSP / Vantage)
 RTNI-T1
 RTNI-E1
 RTNI-ATSI

Address 300 Show Jump

Model RDSP/432

MWIP
Stream

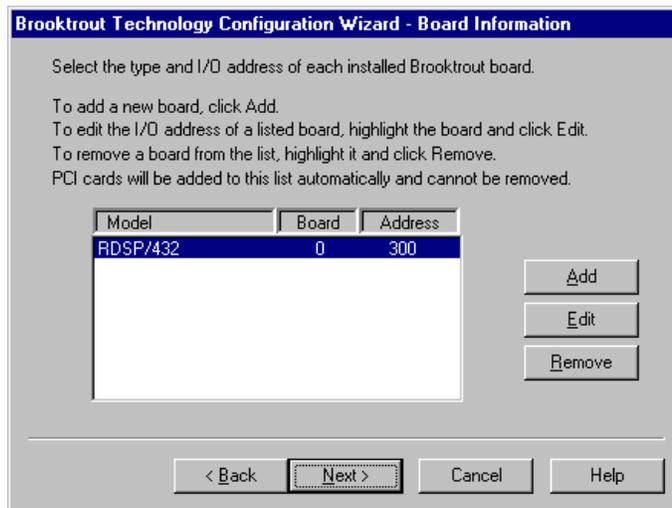
Trunk 0
Protocol Framing
Line Coding CRC

Trunk 1
Protocol Framing
Line Coding CRC

OK Cancel

11. From the Board Type group box, select a voice board type.
12. From the Address drop-down list box, select the Address 300 for the first board, 301 for a second board, and so on.
13. From the Model drop-down list box, select the number for the board.
NOTE: Clicking Show Jump shows you how to jumper the selected board for the selected address.
14. Click OK.

The Brooktrout CTP Configuration Wizard - Board Information dialog box reappears.



15. Repeat steps 11 to 15 to add another board.

Follow the directions on the dialog box to edit or remove inaccurate board information.

The next three figures show a combination of Brooktrout boards: the RNTI-ATSI and the RDSP 12000.

Add a board [?] [X]

Select the Board Type and enter the Input/Output (I/O) address for the board. The I/O address you select must not be used by another device in this system.

WARNING:
Your hardware may not be set to use the I/O address listed. To change the hardware settings, see the documentation that came with your hardware.

Board Type

VP (RDSP / Vantage)
 RTNI-T1
 RTNI-E1
 RTNI-ATSI

Address: 308 [Show Jump]

Model: 12 Trunks

MVIP
Stream: []

Trunk 0

Protocol: [] Framing: []

Line Coding: [] CRC: []

Trunk 1

Protocol: [] Framing: []

Line Coding: [] CRC: []

OK Cancel

Add a board ? X

Select the Board Type and enter the Input/Output (I/O) address for the board. The I/O address you select must not be used by another device in this system.

WARNING:
Your hardware may not be set to use the I/O address listed. To change the hardware settings, see the documentation that came with your hardware.

Board Type

VP (RDSP / Vantage)
 RTNI-T1
 RTNI-E1
 RTNI-ATSI

Address

Model

MVIP
Stream

Trunk 0

Protocol Framing

Line Coding CRC

Trunk 1

Protocol Framing

Line Coding CRC

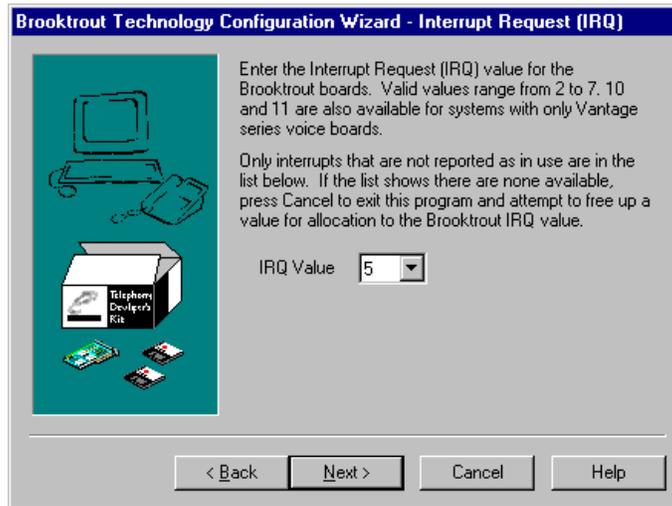
Brooktrout Technology Configuration Wizard - Board Information

Select the type and I/O address of each installed Brooktrout board.

To add a new board, click Add.
 To edit the I/O address of a listed board, highlight the board and click Edit.
 To remove a board from the list, highlight it and click Remove.
 PCI cards will be added to this list automatically and cannot be removed.

Model	Board	Address
RDSP/12000	0	300
RTNI-ATSI 12T	0	308

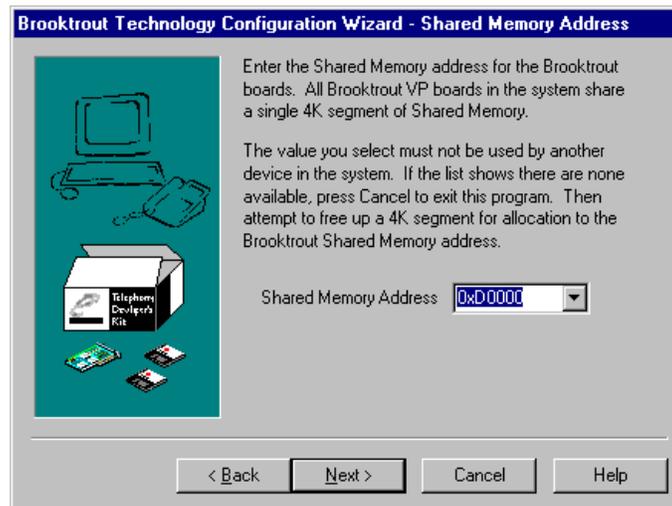
The Brooktrout CTP Configuration Wizard - Interrupt Request (IRQ) dialog box appears.



16. Allow the wizard to select an available IRQ for you then click Next>.

The Amanda Company uses IRQ5 for our turnkey systems.

The Brooktrout CTP Configuration Wizard - Shared Memory Address dialog box appears.



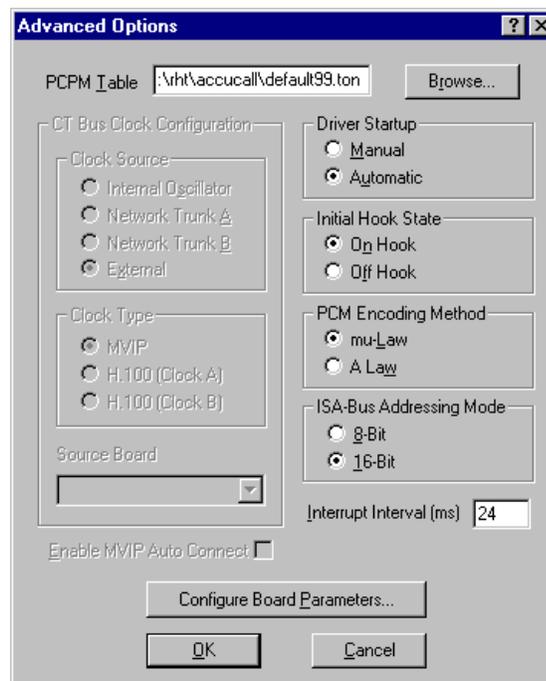
17. Allow the wizard to select a shared memory address for your voice boards then click Next>.

The Brooktrout CTP Configuration Wizard - Advanced Options dialog box appears.



18. Click Advanced Options....

The Advanced Options dialog box appears.



19. In the ISA-Bus Addressing Mode group box, select the 8-Bit option button.

20. Click Browse....

The Open dialog box appears.

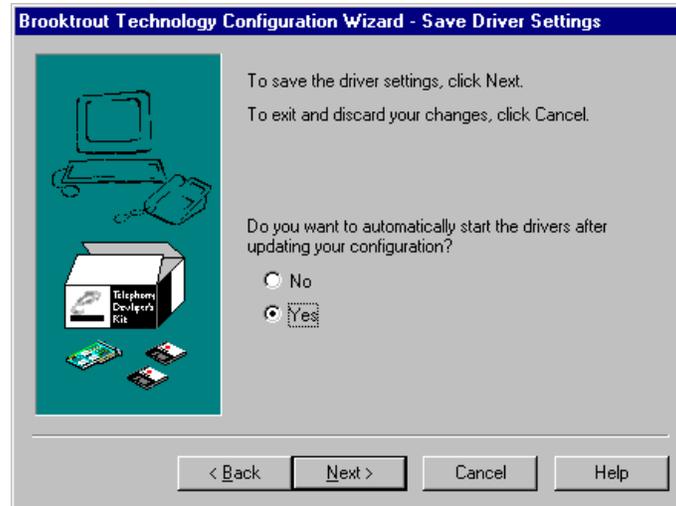
21. Select C:\RHT\ACCUCALL\DEFAULT99.TON. (You may not be able to see the .TON.)

22. Click OK twice.

The Brooktrout CTP Configuration Wizard - Advanced Options dialog box reappears.

23. Click Next>.

The Brooktrout CTP Configuration Wizard - Save Driver Settings dialog box appears.



24. Select Yes then click Next>.

The Brooktrout CTP Configuration Wizard dialog box appears.



25. Click Finish or click AccuCall Wizard to create a PCPM table.

For more information about AccuCall Wizard, see "Using AccuCall Wizard" in the *Installing Amanda@Work.Group/Windows* guide.

26. Click Finish again at the next dialog box.

27. Open the Brooktrout folder on the Amanda CD.

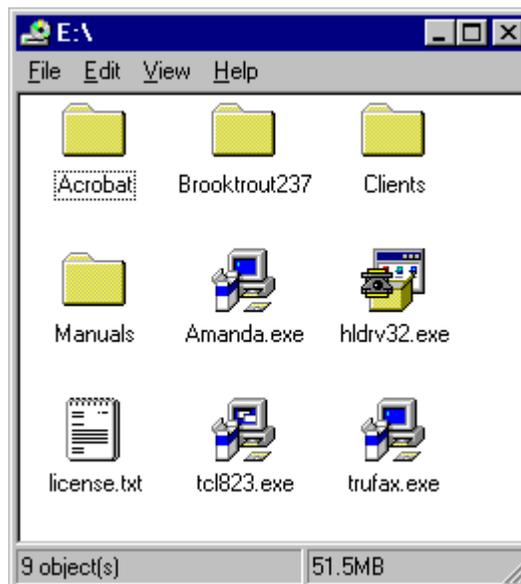
28. Right-click and drag both files (AccuCall Wizard.exe and AccuCall Wizard.hlp) to C:\Rht\AccuWiz. Click Yes To All to overwrite the files already in AccuWiz (the older files are outdated).

Installing Amanda

To start the Amanda installation program:

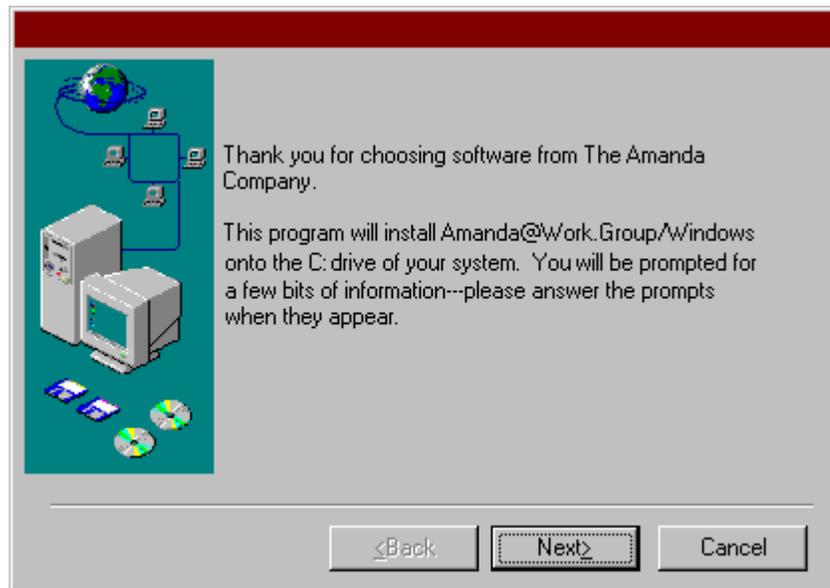
1. Insert the Amanda CD in the CD-ROM drive.
2. Open My Computer from the desktop then the CD-ROM drive.

The contents of the drive are as follows:



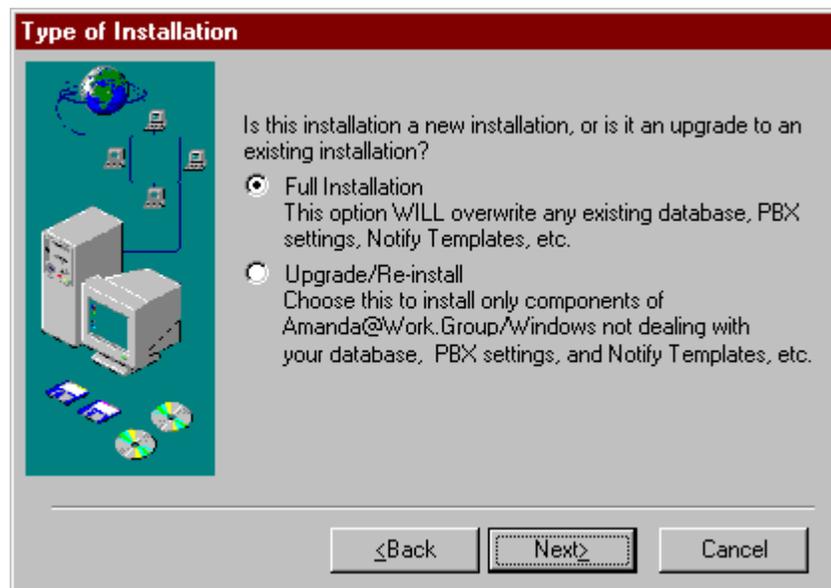
3. Double-click Amanda (in the root of the Amanda CD).

The Thank You dialog box appears.



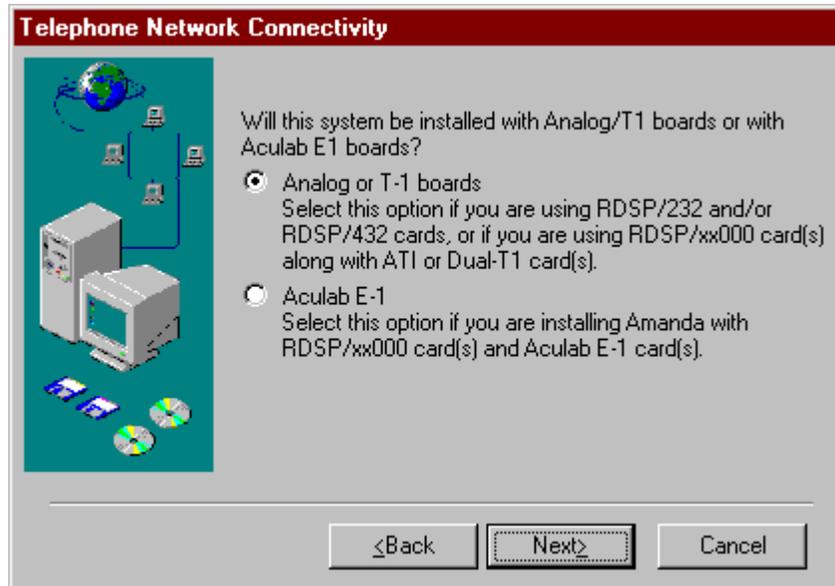
4. Click Next>.

The Type of Installation dialog box appears.

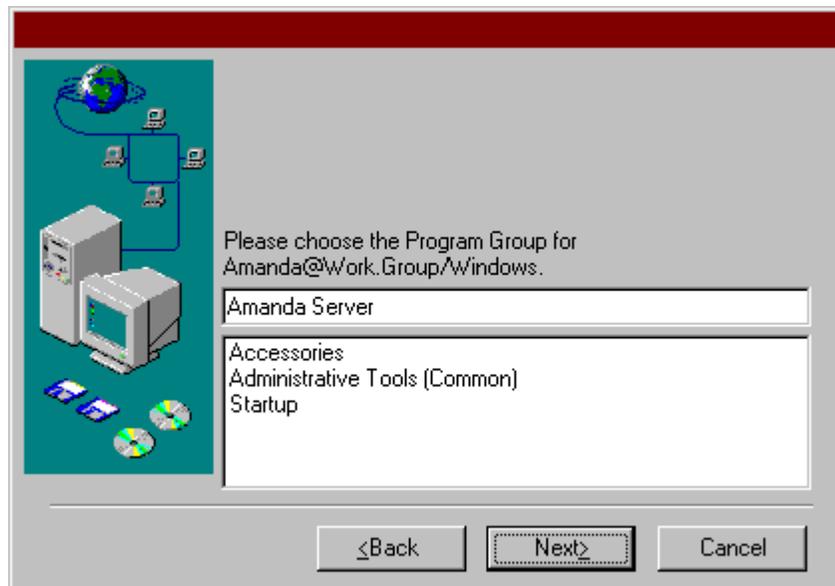


5. Select Full Installation then click Next>.

The Telephone dialog box appears.



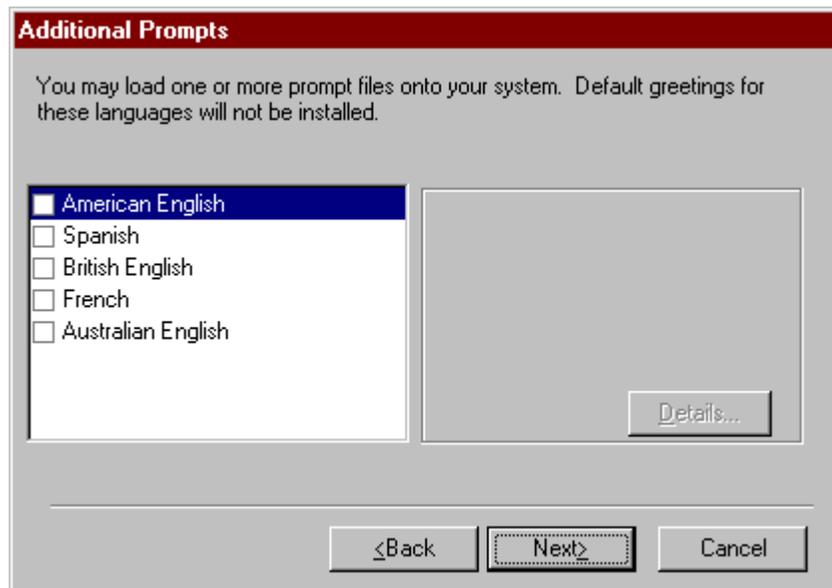
The Program Group dialog box appears.



- Use the default (Amanda Server) then click Next>.
The Languages dialog box appears.



- Most people will choose English at this point then click Next>.
You can load more than one set of prompts.



- (Optional) Select any appropriate prompt check boxes then click Next>.
The Install as a Service dialog appears.

9. Click Yes.



The installation program copies the Amanda files to your hard drive at C:\Amanda. The the Read the README Now? dialog box appears.



10. Click Yes or No, depending on your needs.

The README contains useful information about the installed product.

11. Click OK when the installation finishes.



Setup information is found elsewhere in this guide. Do not configure Amanda at this time.

12. When you see the following dialog box, click OK.



Setting Up pcANYWHERE Software

Your Amanda voice server comes with an external data modem and a copy of pcANYWHERE 9.2, an application that allows The Amanda Company customer service representatives to dial into your Amanda system. You can run pcANYWHERE over a TCP/IP network instead of the modem—if that is more convenient.

You can also access the server using pcANYWHERE. However, The Amanda Company only provides one license for pcANYWHERE, and that is for the copy of it running on Amanda voice server. You will need one for your workstation. pcANYWHERE can be purchased at a PC software store.

The modem software must be installed before you start the following procedure. (In the Control Panel, click Modems and add your modem's software, etc.)

To setup pcANYWHERE:

1. Unless you will be using the network for communication, connect the external data modem to COM4. This is the only 25-pin serial port on your system.
2. From the Start menu, select **Start⇒Programs⇒Symantec⇒pcANYWHERE**.
pcANYWHERE's main window appears.
3. Click the Be A Host PC button to specify your connection type.
If you use a dial-up connection with a modem, select Modem.
If you use a TCP/IP connection, select Network.
4. On the File menu, select Wait For Connection.
5. Once the connection is made, you are asked for your logon account name and password.

The default account name is AMANDA. The default password is AMandA.

NOTE: The default security type is pcANYWHERE security.

If you have any additional questions or problems using pcANYWHERE, please contact Amanda technical support at (800) 800-9822.

Installing the Hard Lock Driver

The hard lock driver allows you to add client connections to your system.

To install the hard lock driver:

1. Double-click Hldr32 (in the root of the Amanda CD).
The Hardlock Device Driver Installation dialog box appears.
2. Click Next>.
The Hardlock Device Driver Installation - Select Destination Directory dialog box appears.
3. Use the default (C:\hardlock) then click Next>.
The Hardlock Device Driver Installation - Start Installation dialog box appears.
4. Click Next>.
At the next dialog box, click Finish.
5. Now you can reboot the computer.

Installing the Clients

During the Amanda installation, the Clients folder was copied to your hard drive as C:\Clients. You initially have five client connections, so only ten clients can access Amanda at the same time.

To install any of the clients:

1. From a workstation that can access the server, open the C:\Clients folder.
2. Do one of the following:
 - Double-click ClientsInstall.exe to install:
 - The administrative clients, Amanda Administrator and Amanda Monitor
 - The user clients, Amanda Messenger and Amanda Dialer
 - Double-click Fax32Install.exe to install the 32-bit version of Amanda Fax.
 - Double-click InboxInstall.exe to install Amanda Unified Messenger.
3. Follow the directions on the screen.

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