# Installing AmAndA@Work.Place

**Version 3.xx**

Designed for norstar™

Installer's Guide Edition 7/01

AmAndA®

# Copyright, Trademark, and Other Notices

Copyright © 1992–2001 The Amanda Company. All Rights Reserved. This guide and the software described herein are copyrighted with all rights reserved. No part of this publication may be reproduced, transmitted, stored in a retrieval system, or translated into any language in any form by any means without the prior written permission of The Amanda Company.

Amanda and Amanda@ are registered trademarks and sales trademarks of The Amanda Company. Norstar is a trademark of Northern Telecom. The Amanda Company is not affiliated with Northern Telecom in any way. Other brand names and product names mentioned in this manual are trademarks or registered trademarks of their respective owners.

Amanda@Work.Place is housed in an ITOX, Inc. Tiger Cub unit. The part number is WI-EAR-33/4M, and the hard drive is HD-TC. This unit's FCC registration number is 47CFR part 15, class B. Its UL control number is C-UL;CSA.

# Limited Warranty on Software

The Amanda Company warrants the media on which the software is recorded to be free from defects in materials and faulty workmanship for a period of 90 days from the date the software is delivered. If a defect in the media should occur during this period, you may return the media to The Amanda Company and The Amanda Company will replace the media without charge.

THE AMANDA COMPANY MAKES NO WARRANTIES (OTHER THAN THOSE SET FORTH ABOVE) TO ANY PERSON OR ENTITY WITH RESPECT TO THE PRODUCT OR ANY DERIVATIVES THEREOF OR ANY SERVICES OR LICENSES AND DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, PERFORMANCE, NONINFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE. THE AMANDA COMPANY WILL NOT BE LIABLE FOR ANY BUG, ERROR, OMISSION, DEFECT, DEFICIENCY, OR NONCONFORMITY IN ANY SOFTWARE. THE SOFTWARE IS LICENSED "AS IS," AND THE PURCHASER ASSUMES THE ENTIRE RISK AS TO ITS QUALITY AND PERFORMANCE.

IN NO EVENT AND NOTWITHSTANDING ANY DOCUMENT, REPRESENTATION, OR OTHERWISE, SHALL THE AMANDA COMPANY BE LIABLE TO YOU FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONTINGENT, OR CONSEQUENTIAL DAMAGES, INCLUDING DAMAGES FROM LOSS OR CORRUPTION OF DATA, INTERRUPTED USE, LOST PROFITS, COST OF PROCURING SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES, EVEN IF THE AMANDA COMPANY OR AN AUTHORIZED AMANDA COMPANY DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. YOU AGREE THAT THE AMANDA COMPANY'S LIABILITY ARISING OUT OF CONTRACT, NEGLIGENCE, STRICT LIABILITY, WARRANTY, OR OTHER LEGAL OR EQUITABLE THEORY SHALL NOT EXCEED ANY AMOUNTS PAID BY YOU FOR THIS PRODUCT. Any written or oral information or advice given by Amanda Company dealers, distributors, agents, or employees will in no way increase the scope of this warranty, nor may you rely on such oral or written communication. Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you. This

warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This Agreement shall be governed by the laws of the State of California without regard to the conflicts of laws or provisions thereof.

# Fraudulent Usage Advisory

Although the Amanda software is designed to resist fraudulent usage, including unauthorized access to a long distance network, no product, including the Amanda software, is able to prevent such unauthorized usage. The Amanda software is likewise unable to prevent such uses as may constitute an invasion of privacy or other tort. THE AMANDA COMPANY MAKES NO EXPRESS OR IMPLIED WARRANTY AGAINST UNLAWFUL OR UNAUTHORIZED USE OF YOUR AMANDA SYSTEM OR ITS CAPABILITIES AND HEREBY DISCLAIMS ALL LIABILITY ARISING FROM SUCH USE. YOU AGREE TO INDEMNIFY, DEFEND, AND HOLD THE AMANDA COMPANY HARMLESS FOR ANY UNAUTHORIZED OR FRAUDULENT USE OF YOUR LICENSED AMANDA SOFTWARE.

THE AMANDA COMPANY
13765 ALTON PARKWAY, UNIT F
IRVINE, CA 92618
TELEPHONE (949) 859–6279 FAX (949) 859–4380

# Conventions

This manual uses the following terminology and conventions:

| | |
|---|---|
| **Amanda** | The name by which this manual refers to the Amanda@Work.Place system to make reading about the system easier. Because of the name Amanda, the system is also referred to as “she.” |
| **caller** | Someone who calls into Amanda. A caller often obtains information, leaves a message for someone, and/or provides information. Because Amanda is referred to as “she,” callers and users are referred to as “he.” |
| **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 information that you must type and messages from Amanda in fixed-space type. |

# Contents


Copyright, Trademark, and Other Notices . . . . . ii
Limited Warranty on Software . . . . . ii
Fraudulent Usage Advisory . . . . . iii
Conventions . . . . . iii

**Chapter 1:**
**Introducing Amanda . . . . . 1**
Specification . . . . . 1
Environmental Requirements . . . . . 1
Electrical Requirements . . . . . 1
Amanda@Work.Place Features . . . . . 2
KSU Support . . . . . 2
General Uses . . . . . 3
Purpose of This Guide . . . . . 4
Customer Service and Support . . . . . 4
End User Support . . . . . 4
System Administration Support . . . . . 5
Installation Support . . . . . 5
Application Support . . . . . 5

**Chapter 2:**
**Installing Your Amanda System . . . . . 7**
Installation Checklist . . . . . 7
Connecting the Ports . . . . . 8
Attaching a Remote Computer . . . . . 9
Using a UPS . . . . . 10

**Chapter 3:**
**Programming Your KSU . . . . . 11**
Selecting a KSU . . . . . 11
Setting Up the KSU . . . . . 11
Starting and Ending Programming . . . . . 13
Using the Templates . . . . . 14
Using the Programming Tables . . . . . 16

**Chapter 4:**
**Defining Tone Patterns . . . . . 35**
Using Tone Files . . . . . 35
Defining Tones . . . . . 35
Reasons for Multiple Results . . . . . 42

**Chapter 5:**
**Defining Integration Patterns . . . . . 43**
Selecting a PBX File . . . . . 43
Using Character Codes . . . . . 44

**Chapter 6:**
**Configuring Amanda. . . . . 47**
Using This Chapter. . . . . 47
Configuring Amanda for Your KSU . . . . . 47
Using the Questionnaire . . . . . 47
Running Setup . . . . . 55
Configuring a New Installation . . . . . 56
Using Notification . . . . . 58
Using Default and Recommended Mailboxes . . . . . 58
Creating Mailboxes . . . . . 60
Selecting a Transfer Method . . . . . 60
Sharing Amanda . . . . . 61
Using the box_grt Configuration Option . . . . . 64

**Chapter 7:**
**Faxing . . . . . 65**
Using This Chapter. . . . . 65
Using a Fax Modem . . . . . 65
Suggested Settings. . . . . 68
Detecting a Fax Machine Automatically . . . . . 69
Modifying the PCPM Tone Table. . . . . 69
Creating the Hot Box Mailbox . . . . . 70
Setting the Hot Box Options . . . . . 70
Sending Faxes. . . . . 71

**Chapter 8:**
**Accessing Amanda Remotely . . . . . 73**
Accessing Amanda from Another Computer . . . . . 73
Using the Host Program . . . . . 74
Using the Remote Program . . . . . 75
Connecting by Null Modem Cable . . . . . 75
Connecting by Modem . . . . . 76

**Chapter 9:**
**Programming Amanda . . . . . 77**
Using Tokens . . . . . 77
Mailbox Settings . . . . . 78
Success and Failure . . . . . 78
Tracing Token Execution . . . . . 79
Kinds of Tokens . . . . . 79
Literals. . . . . 79
Variables . . . . . 80
Assignment. . . . . 80
Commands. . . . . 81
Parameters . . . . . 82
Syntax. . . . . 82
Files and Directories. . . . . 84
Flow of Control: Branching and Looping . . . . . 85
Examples . . . . . 86
Customizing the Employee Directory. . . . . 86
Application. . . . . 86
Translating to Amanda's Tokens. . . . . 87
Token Reference. . . . . 89
Troubleshooting . . . . . 124

**Chapter 10:**
**Programming Examples . . . . . 127**
System Paging of a User for Special Callers . . . . . 127
Application . . . . . 127
Translating to Amanda's Tokens . . . . . 127
Result. . . . . 128
Switching and Maintaining Languages . . . . . 128
Application . . . . . 128
Using Amanda's Tokens . . . . . 129
Another Consideration . . . . . 130
Using Amanda's Tokens . . . . . 130
Order Shipment Information . . . . . 131
Application . . . . . 131
Translating to Amanda's Tokens: . . . . . 132
Summary . . . . . 132
One-call and Two-call Faxbacks . . . . . 133
Sending Faxes to Amanda. . . . . 133
One-call Faxback. . . . . 133
Two-call Faxback . . . . . 134
IVR and Voice Form Applications. . . . . 137
Making the User Comfortable. . . . . 137
Using Greetings. . . . . 138
Using Menus . . . . . 138
Making Requests . . . . . 138
Providing Information and Feedback. . . . . 139
Using the Telephone Keypad . . . . . 140
Choosing Tokens. . . . . 140
Using Tokens. . . . . 141
Gathering Testing Information. . . . . 142

**Appendix A:**
**Troubleshooting Amanda . . . . . 145**
New Problems . . . . . 145
Resetting a Port from the Main Screen. . . . . 145
What to Do When… . . . . . 145
Amanda Does Not Transfer the Call . . . . . 146
Ports Do Not Work . . . . . 146
Caller Doesn't Hear the Busy Message or RNA Greeting . . . . . 146
Notification Does Not Work Correctly . . . . . 147
Host/Remote Programs Do Not Work . . . . . 148
System Halts . . . . . 148
Miscellaneous . . . . . 148

**Appendix B:**
**Installing Amanda Company Boards. . . . . 151**
Using an Amanda Company Board with a KSU and Amanda . . . . . 151
Installation Checklist . . . . . 151
Background Information . . . . . 152
Configuring the Boards . . . . . 153
A Two-board Arrangement . . . . . 153
Installing the Boards. . . . . 154
Connecting the Ports. . . . . 155
Connecting the Cables . . . . . 156

**Appendix C:**
**Configuration Reference . . . . . 157**
General Options . . . . . 157
Fax Options . . . . . 175
Hot Box Options . . . . . 178
Outdial Options . . . . . 179
Per Port Options . . . . . 179
Serial Port Options . . . . . 180
SMDI Options . . . . . 181

**Index . . . . . 183**

# Chapter 1:
# Introducing Amanda

## Specification

The PC on which your Amanda system is installed has:

- MS-DOS version 6.22 in the directory C:\DOS.
- An ELAN486 processor running at 33MHz.
- 4MB of RAM.
- A 1.2GB IDE hard disk drive with an appropriate IDE controller.
- One or two Amanda Company voice boards.
- COM1, using IRQ 4, and COM2, using IRQ 3, which are available for fax modems or SMDI integration.
- Modem for remote access using the Host/Remote programs.

### 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 or mount the system on a wall.
- Locate Amanda within 5 feet (1.5 meters) of the host telephone switching system.
- Locate Amanda within 5 feet (1.5 meters) of a properly grounded electrical outlet which is not controlled by a switch.
- Ensure that the operating temperature is 32 to 95 degrees Fahrenheit (0 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

The electrical requirements are:

- 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.

# Amanda@Work.Place Features

Amanda@Work.Place supports:

- 4 ports with one voice board; 6 or 8 ports with two boards (by adding a 2-port or 4-port board)
- 2 serial ports
- 99,999 mailboxes, each of which have:
  - 3 personal greetings
  - 3 personal mailing lists
  - 4 notification records
  - 10 scheduling records
  - 128 messages
- Support for SMDI (a serial interface to your KSU)
- Support for sending and receiving faxes
- Host and remote programs for communicating remotely with the computer running Amanda
- 66 hours of voice storage
- The Token Programming Language

# norstar™ KSU Support

Amanda works with the following KSUs:

- 616 DR5 DS
- 824 DR5 DS
- CICS DR1
- MICS R1

Named Norstar Sets are fully supported on the 616, 824, Compact Integrated Communications System (CICS), and Modular Integrated Communications System (MICS or 032) Norstar systems. Other models of Norstar (in particular those available outside the US Domestic market) may or may not be supported.

The 616 and 824 require DR5 system software. The CICS and MICS require DR1 software. Norstar “Centrex” and “Centrex Plus” DRs are **not** supported at this time. Centrex lines **are** compatible with Amanda and enhance operations in some applications. Standard DR5 software supports this service.

Disconnect Supervision (DS) hardware is required. The Amanda Company cannot guarantee the correct operation of Amanda on non-DS Norstar system cabinets. DS hardware provides a “handshake” between the CO and the Norstar KSU that allows Amanda to use ports more efficiently. This requirement probably applies to all Norstar proprietary and all third-party voice messaging systems.

DS hardware is standard on CICS and MICS 032 systems. DS versions of the 616 and 824 shipped near the end of these products' lives. 616 and 824 cabinets must be clearly labeled “DS.” On the 616, DS appears under the cover on the label. On the 824, DS appears in the upper right hand corner of the KSU. Please contact the Amanda Company product manager about any T1, DID, 0x32R1XL, or custom networking applications.

Two-call faxback applications can be created with Amanda fax ports connected directly to Central Office telephone lines. One-call faxback and fax mail applications, on the other hand, will require that the fax ports be connected through the Norstar using Analog Terminal Adapter (ATA) equipment.

An ATA can connect a digital Meridian Norstar telephone port to either of the following:

- A data communication device, such as a modem or fax machine
- A standard analog voice device, such as a single-line telephone

Contact your Norstar representative about pricing and installation information.

# General Uses

Amanda@Work.Place is an automated attendant and voice processing system designed especially for ease of use and flexibility. As a PC-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 KSU 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.Place for the first time. It 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 now 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:
# Installing Your Amanda System

## 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. Program the telephone switching system for voice mail integration.

2. Connect the line cords from the voice board to the telephone switching system. (Make sure that all the extensions are connected to the board BEFORE starting Amanda.)

3. Connect Amanda's computer.

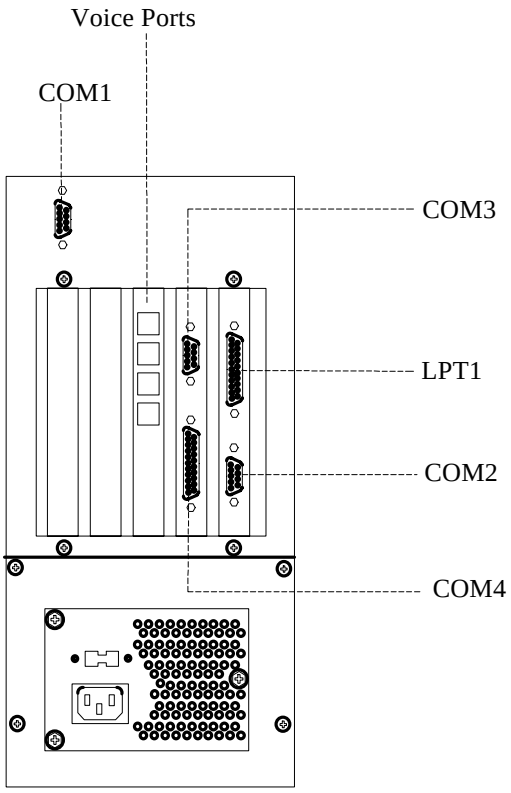
4. Run Setup to define Amanda system configuration options.

5. Test each voice board port for answering.

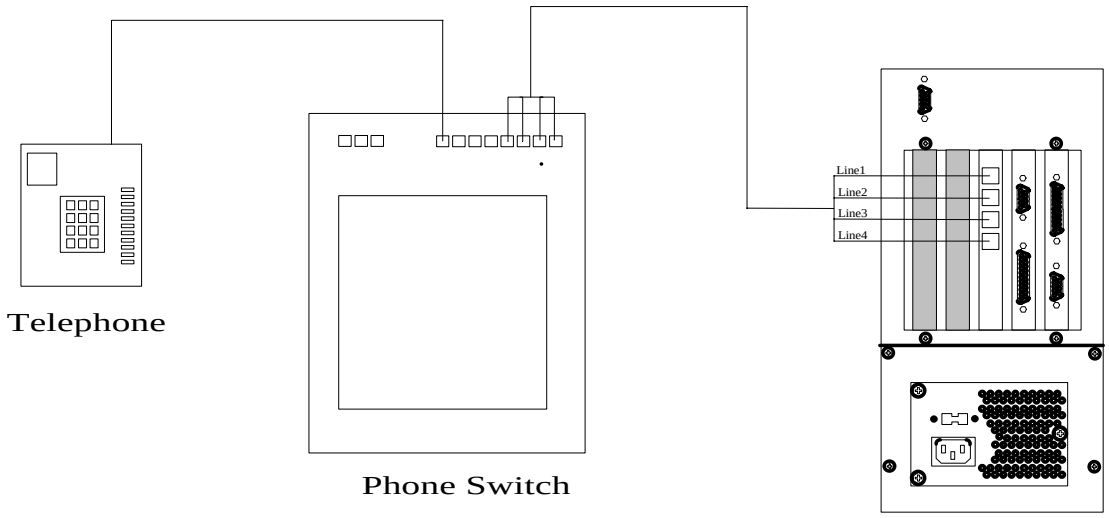
6. Amanda's tone files are preconfigured to work with Norstar KSUs. If your system does not work well or requires additional tones, run Setup (and SmartCall) to identify the tone patterns.

# Connecting the Ports

The next figure shows you the back of the computer for a four-port system that uses one four-port voice board. Each board has four RJ-11 connectors providing connection to four loop-start trunks or station line interfaces.



The next figure shows how to connect the telephone switching system to the voice ports on the computer.




# Attaching a Remote Computer

To control and configure Amanda@Work.Place, you must have:

- A null modem cable and the Amanda Remote Software disk. You supply another computer, such as a laptop or notebook. You connect the other computer, referred to as the remote computer, whenever you need to control Amanda.

To control Amanda from the remote computer, do the following:

1. Connect the two computers with a null modem cable.
2. Run the Remote program (either REMOTE.COM from your Amanda Remote Software disk or WINREM.EXE, a new product from The Amanda Company that is sold separately) on the remote computer.

   The Host program HOST.COM is already running on Amanda's computer.

For more details, see "Chapter 8: Accessing Amanda Remotely" on page 73.

# 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.”

# Chapter 3: Programming Your norstar™ KSU

## Selecting a norstar™ KSU

Amanda works with the following KSUs:

- 616 DR5 DS
- 824 DR5 DS
- CICS DR1
- MICS R1

For more details, see “KSU Support” on page 2.

## Setting Up the KSU

Later in this chapter, you will find tables for each KSU type. Each table lists the programming menu options on the left and the settings to be used with Amanda on the right. This section explains why The Amanda Company requires some of the settings that appear in the tables. Read this section as a general overview; then configure the KSU using the tables.

For additional information on programming your Norstar KSU, refer to your Norstar *Installer Guide* or *System Coordinator Guide* or contact the installer of your Norstar telephone system.

**Startup Templates**

Upon Startup, your Norstar KSU has four templates available:  Square, Centrex, Hybrid, and PBX. If you plan to have Amanda access outside lines for paging, notification, fax, or other applications, setup will be simpler if you choose the Hybrid or PBX template.

**Ports**

When you install Amanda you must select which Norstar station ports to connect to the ports on the voice processing boards in your Amanda system. You should **not** connect your Norstar system’s Prime Telephone port (usually DN 221) to Amanda because Amanda will not know how to process calls sent to this telephone port by the Norstar system itself. As a standard practice, many installers choose the last group of 4, 8, 12, or 16 station ports on the Norstar for the Amanda system.

You must configure all of the incoming lines that are to be answered by Amanda to ring at the first of the Norstar station ports connected to Amanda. The remaining ports connected to Amanda must not have ringing enabled for any lines. Each Norstar port must forward busy calls to the next port, forming a hunt group. On ring-no-answer, calls should be forwarded to the operator.

Each port must have:

- One intercom key
- Intercom as its prime line
- No paging features enabled

Each Norstar port connected to Amanda should have a name (such as AMANDA) which will allow station set users to recognize calls from Amanda.

**Lines**

Each incoming line (usually from the CO) to the Norstar KSU can have a name. For example, on the 824, the default name for Line 1 is Line001. None of the incoming lines can have the same name as any of the following:

- Another line. Line names must be unique.
- Any of the sets/telephones. The set names are copied into the mailbox Set Name fields by Autocreate. They can also be entered manually.
- A mailbox. A mailbox's "name" is its number, which ranges from 0 to 99,999,999.

If you are using tenant services, read "Sharing Amanda" on page 61 for more information about the line names used with tenant services.

**Hands Free**

For integration between the Norstar system and the Amanda system to work properly, all of the station sets on the Norstar must be configured with Hands Free Answerback set to Yes. This allows the Norstar to report correctly to Amanda whether the call was actually answered by the intended party. In addition, each of the station sets on the Norstar must be identified with a unique set name.

**Set Relocation**

The Set Relocation feature must be disabled. This seemingly harmless feature can cause unpredictable results for Amanda when it is enabled.

**Dialing Filters**

After Amanda is up and running, use the Norstar system's Dialing filters to restrict the station ports used by Amanda as tightly as possible. This restriction (consistent with your call processing applications) prevents possible long distance toll fraud.

**DNs and the Hunt Group**

Be aware that:

- All DNs connected to Amanda must be in consecutive order (for example, 41, 42, 43, and 44).
- Norstar must circular hunt for all DNs **except** the last one connected to Amanda, which is dedicated to the Message Waiting Indicator (MWI) and outcalling activity.
- The last port connected to Amanda should forward on busy to the first port connected to Amanda.

**Extensions**

The KSU extensions that are connected to the Amanda Company board for Norstar ports should be set up to receive the rings and not to receive the indicator messages for external calls. This setting can be changed from the system configuration menu of the KSU.

For extensions that will receive calls from external lines, you should select Line Access and set Line Assignment to Ring Only. Each extension requires that this setup be done for all external lines. When this setup is not done, the voice mail application receives a loop drop event when the operator makes a supervised transfer to the voice mail system.

**NOTE**: Do not connect the first Norstar extension (usually extension 221 or 21—depending on your KSU) to voice mail. This extension is the control set and, by default, handles certain holds, parks, and so forth which may be more appropriately handled by a live attendant.

**Ensuring Consistent Integration**

Amanda must know the DNs of the extensions connecting her to the Norstar system. If Amanda and Norstar are not set up in a consistent manner, integration failures can result under light to moderate call traffic.

The tables instruct you to use the following approach: Amanda's ports are named on the Norstar KSU, for example, AMANDA1, AMANDA2, and so on. Then you must create an Amanda mailbox for each of the DNs using its proper Set Name.

Integration works because Amanda does both of the following:

- Looks up the Set Name to get the mailbox number
- Determines whether the DN is one of her own ports by checking the configuration option smdi_base_port and the number of ports

This paragraph explains an alternative approach: Amanda's ports are **numbers** on the Norstar KSU. Amanda's own ports are **not included** as mailboxes. This is the simpler approach, but it is not in the tables because installers commonly name voice mail ports on Norstar KSUs. When Autocreate runs on a properly configured Amanda, mailboxes are not created for Amanda's own ports. Integration works because the calls arrive with the required numeric identification. Using this approach means that you do not follow the tables exactly in the section on Names.

**CAUTION:**Mixing and matching from the two approaches does not result in a working system.

# Starting and Ending Programming

This document is designed to make programming a Norstar KSU for use with Amanda@Work.Place as easy as possible. This section explains how to start and stop a programming session, what templates to use, and what settings to select. Use the key to understand why some settings are underlined and italicized.

**To start programming a Norstar KSU:**

1. Press Rls, press Feature, dial **CONFIG (266344).

2. Dial the password. The default is CONFIG (266344). (The Norstar installer may have changed it.)

3. The templates below show the soft key layout for various telephone sets.

   Use Heading or Left Arrow to move up the hierarchy of heading and subheadings.

   Use Show or Right Arrow to do either of the following:

   - Move down the hierarchy of headings or subheadings
   - Begin programming for a heading or subheading.

   Use Next (Down Arrow) or Back (Up Arrow) to move to the next or previous heading, subheading, or setting.

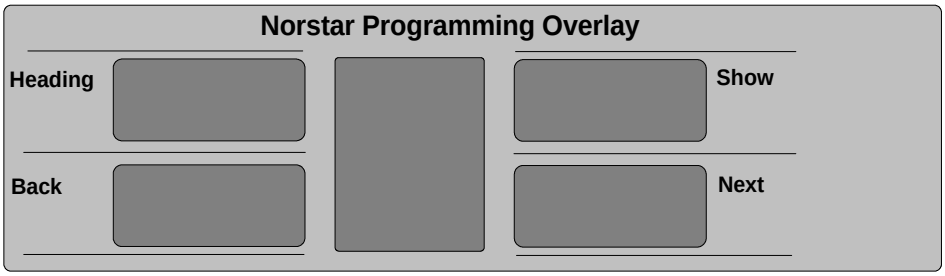
**To end a programming session:**

- Press Rls to end the session.

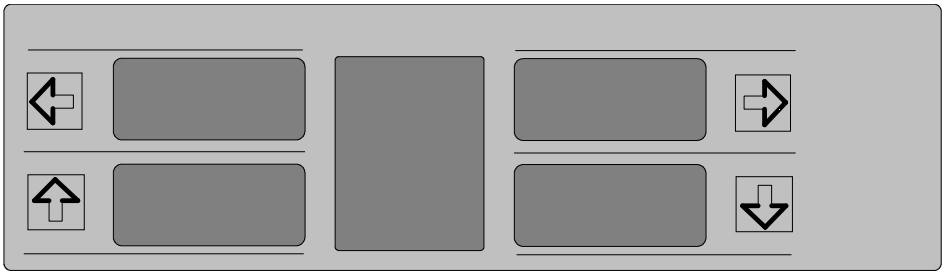
# Using the Templates

These templates show you what buttons on the 7310 and 7208 telephone sets to use while programming the MICS, CICS, 616, and 824.

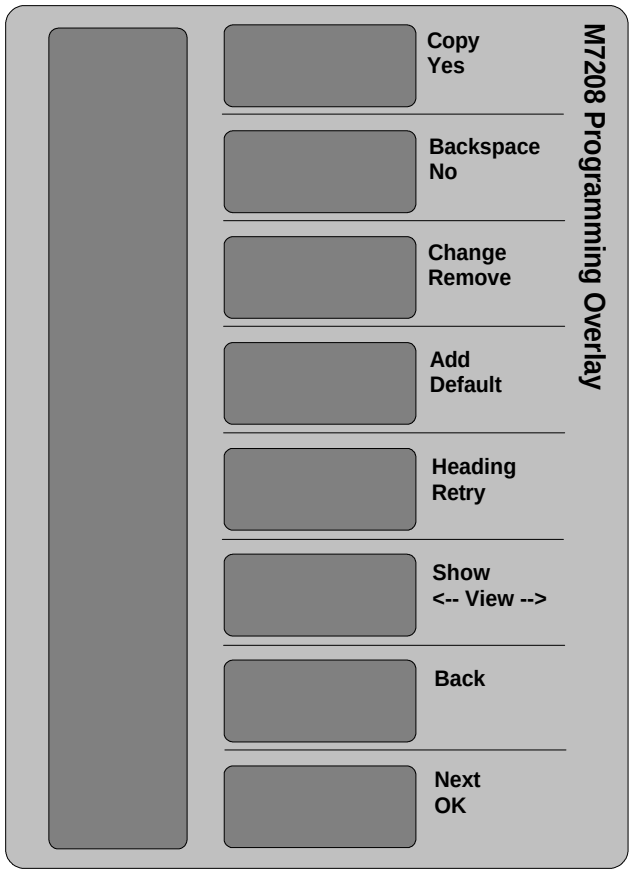
### 7310 Template: Program the 616, 824, or MICS




### 7310 Template: Program the CICS



## 7208 Template: Program the 616



# Using the Programming Tables

This section contains a table for each of the Norstar KSUs that are compatible with Amanda. Each table shows the programming menu for a KSU and the settings required or suggested for efficient call management.

These settings are intended to be adjusted **after** the switch has been completely configured and installed! They are intended for Full, Auto Attendant configurations which include Out Calling Notification.

Use the following key to understand what settings are required, suggested, or irrelevant to Amanda—according to current information.

## Key to Settings

| | |
|---|---|
| Underlined Text | Settings that are critical for proper Amanda operation. Enter them exactly as they appear (except for the underlining). |
| Plain Text | Settings that are recommended for proper Amanda operation. |
| *Italicized Text* | Example settings that you might enter or a line of the menu that might appear because of a setting you entered. For example, you might be using *241-244* or *33-36* as the ports of a four-port system. You might name a line pool *PoolA*, or you might name a line *001* or *01*. |
| | Indicates that the setting requires your attention. |
| | Where no setting is given, the setting is not important to Amanda. Set it according to the needs of your users or other system requirements. |

Norstar switch programming changes may take as long as three minutes to take effect. Please be patient!

# Modular ICS (MICS) Settings

| MICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| **A. Configuration** | | | | |
| . 1. Trk/Line Data | | | | |
| . . TCs on KSU | | | | |
| . . . TC1 on KSU | | | | |
| . . . TC2 on KSU | | | | |
| . . Show line:_[1] (*001*, *002*, *003*, etc.) | | | | |
| . . . Trunk Data | | | | |
| . . . . Line001 | | | | |
| . . . . Trunk mode | Super | | | |
| . . . . Ans mode | | | | |
| . . . . Dial mode | Tone | | | |
| . . . . Full AutoHold | | | | |
| . . . . LossPkg | | | | |
| . . . Line Data | | | | |
| . . . . Line type | *Pool A*[2] | | | |
| . . . . Line grp | | | | |
| . . . . PrimeSet | | | | |
| . . . . Aux. Ringer | | | | |
| . . . . Auto privacy | | | | |

[1] Do this for each line to be accessed by Amanda.

[2] A Line Pool must be built and assigned to Amanda. Use a letter from A-O.

# Modular ICS (MICS) Settings (continued)

| MICS Programming Menu | Settings for Amanda: General | 1st Port | Mid Ports | Last Port |
|---|---|---|---|---|
| . 2. Line Access | | | | |
| . . Show set:_ | | *241*[1] | *242-243*[2] | *244*[3] |
| . . . Line Assignment | | | | |
| . . . . Show line:_[4] | | | | |
| . . . . *Line001* | | Ring Only | Not assignd | Not assignd |
| . . . . *Line002* | | Ring Only | Not assignd | Not assignd |
| . . . . *Line003*, etc. | | Ring Only | Not assignd | Not assignd |
| . . . ILG assignment | | | | |
| . . . Answer DNs | | | | |
| . . . LinePool access | | | | |
| . . . . *Line Pool A* | | N | N | Y |
| . . . Intercom keys | | 1 | 1 | 1 |
| . . . Prime Line | | I/C | I/C | I/C |
| . 3. Routing | | | | |
| . 4. Call Handling | | | | |
| . . Held reminder | | | | |
| . . Remind delay | | | | |
| . . DRT to prime | N[5] | | | |
| . . DRT delay | x[6] | | | |
| . . Trnsfr callbk | x[7] | | | |
| . . Park prefix | | | | |
| . . Park timeout | | | | |
| . . Camp timeout | | | | |
| . . Directd pickup | | | | |
| . . On hold | | | | |

1 This is the typical DN value for the first port of a 4-port Amanda.

2 These are the typical DN values associated with Amanda's middle (second through next-to-last) ports.

3 This is the typical DN value associated with Amanda's last port (i.e. notification port).

4 Do this for each line to be answered by Amanda.

5 DRT to prime calls are not compatible with Amanda if the lines have names other than the Norstar default names. Check with The Amanda Company for more details if you need to set DRT to prime to Y.

6 This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

7 This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

# Modular ICS (MICS) Settings (continued)

| MICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| . 5. Miscellaneous | | | | |
| . . Backgrnd music | | | | |
| . . Direct-dial # | | | | |
| . . DISA DN | | | | |
| . . Auto DN | | | | |
| . . Alarm set | | | | |
| . . CAP Assignment | | | | |
| . . Link time | | | | |
| . . Set relocation | N | | | |
| . . Host delay | | | | |
| . . Receiver volume | | | | |
| . . External code | 9 | | | |
| . . Line pool codes (typically 9, 8, or 7) | | | | |
| . . . *Line Pool A* | 9 | | | |
| . . Installer pswd | | | | |
| . 6. System Data | | | | |
| **B. General admin** | | | | |
| . 1. Sys speed dial | | | | |
| . 2. Names | | | | |
| . . Set names | | | | |
| . . . Show set:_ | | *241*[1] | *242-243*[2] | *244*[3] |
| . . . . Name | | AMANDA1[4] | AMANDnn | AMANDnn |
| . . Line names | | | | |
| . 3. Time and Date | | | | |
| . 4. Direct-Dial | | | | |

[1] This is the recommended DN value for the first port of a 4-port Amanda.

[2] These are the recommended DN values associated with Amanda's middle (second through next-to-last) ports.

[3] This is the recommended DN value associated with Amanda's last port (i.e. notification port).

[4] Be sure to add a mailbox in Amanda for each Amanda port, using this name as the Set Name.

# Modular ICS (MICS) Settings (continued)

| MICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| . 5. Capabilities | | | | |
| . . Dialing filters | | | | |
| . . Rem access pkgs | | | | |
| . . Set abilities | | | | |
| . . . Show set:_ | | *241* | *242-243* | *244* |
| . . . . Set filters | | | | |
| . . . . Line/set filters | | | | |
| . . . . Set lock | | | | |
| . . . . Full handsfree | | Y | Y | Y |
| . . . . Auto handsfree | | Y | Y | Y |
| . . . . HF answerback | | | | |
| . . . . Pickup group | | | | |
| . . . . Paging | | | | |
| . . . . Page zone | | | | |
| . . . . Aux. Ringer | | | | |
| . . . . Direct-dial | | | | |
| . . . . Fwd on busy | | | | |
| . . . . . Forward to | | Next (*242*) | Next[1] | First (*241*) |
| . . . . Fwd no answer | | | | |
| . . . . . Forward to | | Prime[2] (*221*) | Prime (*221*) | Prime (*221*) |
| . . . . . Forward delay | | | | |
| . . . . Allow redirect | | | | |
| . . . . Redirect ring | | | | |
| . . . . Hotline | | | | |
| . . . . Priority call | | | | |
| . . Line abilities | | | | |
| . . . Line filters | | | | |
| . . . Remote filters | | | | |
| . . . Remote pkg | | | | |
| . . COS passwords | | | | |

[1] The next-to-the-last port should NOT forward to the last (notification) port.

[2] The Amanda Company recommends sending these calls to the Norstar Prime Set (live attendant) in the event of a Norstar or Amanda port malfunction.

# Modular ICS (MICS) Settings (continued)

| MICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | General | 1st Port | Mid Ports | Last Port |
| . 6. Service Modes | | | | |
| . 7. Passwords | | | | |
| . 8. Log Defaults | | | | |
| . 9. Call Services | | | | |
| **C. Set Copy** | | | | |
| **D. Maintenance** | | | | |

# Compact ICS (CICS)

| CICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | General | 1st Port | Mid Ports | Last Port |
| **Terminals&Sets** | | | | |
| . Show set:_ | | *33*[1] | *34-35*[2] | *36*[3] |
| . . Line Access | | | | |
| . . . Line Assignment | | | | |
| . . . . Show line:_[4] | | | | |
| . . . . *Line001* | | Ring Only | Unassigned | Unassigned |
| . . . . *Line002* | | Ring Only | Unassigned | Unassigned |
| . . . . *Line003*, etc. | | Ring Only | Unassigned | Unassigned |
| . . . LinePool access | | | | |
| . . . . *Line Pool A* | | N | N | Y |
| . . . Prime Line | | I/C | I/C | I/C |
| . . . Intercom keys | | 1 | 1 | 1 |
| . . . Answer DNs | | | | |
| . . . ILG assignment | | | | |

[1] This is the typical DN value for the first port of a 4-port Amanda.

[2] These are the typical DN values associated with Amanda's middle (second through next-to-last) ports.

[3] This is the typical DN value associated with Amanda's last port (i.e. notification port).

[4] Do this for each line to be accessed by Amanda.

# Compact ICS (CICS) (continued)

| CICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | General | 1st Port | Mid Ports | Last Port |
| . . Capabilities | | | | |
| . . . Fwd no answer | | | | |
| . . . . Fwd to | | Prime[1] | Prime | Prime |
| . . . . Forward delay | | | | |
| . . . Fwd on busy | | | | |
| . . . . Fwd to | | Next | Next[2] | First |
| . . . DND on Busy | | N | N | N |
| . . . Handsfree | | Auto | Auto | Auto |
| . . . HF answerback | | | | |
| . . . Pickup grp | | | | |
| . . . Page zone | | | | |
| . . . Paging | | | | |
| . . . D-Dial | | | | |
| . . . Priority call | | | | |
| . . . Hotline | | | | |
| . . . Set lock | | | | |
| . . . Aux. Ringer | | | | |
| . . . Allow redirect | | | | |
| . . . Redirect ring | | | | |
| . . . ATA ans timer | | | | |
| . . Name | | AMANDA1[3] | AMANDnn | AMANDnn |
| . . User preferences | | | | |
| . . Restrictions | | | | |
| . . Telco features | | | | |
| . . . CLASS assignmnt | | | | |
| . . . . Show line:_ [4] | | | | |
| . . . . . Caller ID set | N | | | |
| . . . . . Call log set | | | | |
| . . . . . Extl VMsg set | | | | |
| . . . 1stDisplay | | | | |
| . . . Log space | | | | |

1 The Amanda Company recommends sending these calls to the Norstar Prime Set (live attendant) in the event of a Norstar or Amanda port malfunction.

2 The next-to-the-last port should NOT forward to the last (notification) port.

3 Be sure to add a mailbox in Amanda for each Amanda port, using this name as the Set Name.

4 Do this for each line to be accessed by Amanda.

# Compact ICS (CICS) (continued)

| CICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| **Lines** | | | | |
| . Show line:_ [1] | | | | |
| . . Trunk/Line Data | | | | |
| . . . Trunk type | | | | |
| . . . Line type | *PoolA* | | | |
| . . . Dial mode | Tone | | | |
| . . . PrimeSet | | | | |
| . . . Auto privacy | | | | |
| . . . Trunk mode | Super | | | |
| . . . Ans mode | | | | |
| . . . Line grp | | | | |
| . . . Aux. Ringer | | | | |
| . . . Full AutoHold | | | | |
| . . . LossPkg | | | | |
| . . Name | | | | |
| . . Restrictions | | | | |
| . . Telco features | | | | |
| **Services** | | | | |
| **Sys speed dial** | | | | |
| **Passwords** | | | | |
| **Time&Date** | | | | |
| **System prgrming** | | | | |
| . Change DNs | | | | |

[1] Do this for each line to be accessed by Amanda.

# Compact ICS (CICS) (continued)

| CICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | General | 1st Port | Mid Ports | Last Port |
| . Featr settings | | | | |
| . . Backgrnd music | | | | |
| . . On hold | | | | |
| . . Receiver volume | | | | |
| . . Camp timeout | | | | |
| . . Park timeout | | | | |
| . . Trnsfr callbk | x[1] | | | |
| . . DRT to prime | N[2] | | | |
| . . DRT delay | x[3] | | | |
| . . Held reminder | | | | |
| . . Directd pickup | | | | |
| . . Page tone | | | | |
| . . Page Timeout | | | | |
| . . Daylight time | | | | |
| . . Call log space | | | | |
| . . Host delay | | | | |
| . . Link time | | | | |

[1] This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

[2] DRT to prime calls are not compatible with Amanda if the lines have names other than the Norstar default names. Check with The Amanda Company for more details if you need to set DRT to prime to Y.

[3] This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

# Compact ICS (CICS) (continued)

| CICS Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| . . AlarmSet | | | | |
| . . Set relocation | N | | | |
| . Direct-dial | | | | |
| . CAP assignment | | | | |
| . Access codes | | | | |
| . . Line pool codes (typically 9, 8, or 7) | | | | |
| . . . *Line pool A* (letter from A-O) | 9 | | | |
| . . Park prefix | | | | |
| . . Extrnl code | 9 | | | |
| . . Direct-dial | | | | |
| . . Auto DN | | | | |
| . . DISA DN | | | | |
| . Auto Attendant | OFF | | | |
| . Remote access | | | | |
| . Rec'd # length | | | | |
| . DN length | | | | |
| **Telco features** | | | | |
| **Software Keys** | | | | |
| **Hardware** | | | | |
| **Maintenance** | | | | |

# Modular DR5 (824)

| Modular DR5 (824) Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| **A. Configuration** | | | | |
| . 1. Trk/Line Data | | | | |
| . . Show line:_[1] | | | | |
| . . . . *Line001* | | | | |
| . . . . *Line002* | | | | |
| . . . . *Line003*, etc. | | | | |
| . . . Trunk Data | | | | |
| . . . . *Line001* | | | | |
| . . . . Trunk mode | Super | | | |
| . . . . Ans mode | | | | |
| . . . . Dial mode | Tone | | | |
| . . . . Full AutoHold | | | | |
| . . . Line Data | | | | |
| . . . . Line type | *PoolA*[2] | | | |
| . . . . Prime set | | | | |
| . . . . Aux. Ringer | | | | |
| . . . . Auto privacy | | | | |
| . 2. Line Access | | | | |
| . . Show set:_ | | *241*[3] | *242-243*[4] | *244*[5] |
| . . . Line Assignment | | All[6] | None | None |
| . . . Answer DNs | | | | |
| . . . Ringing | | Ring | No Ring | No Ring |
| . . . Line pool access | | | | |
| . . . . *Line Pool A* | | N | N | Y |
| . . . Intercom keys | | 1 | 1 | 1 |
| . . . Prime Line | | I/C | I/C | I/C |

[1] Do this for each line to be accessed by Amanda.

[2] A Line Pool must be built and assigned to Amanda. Use a letter from A-O.

[3] This is the typical DN value for the first port of a 4-port Amanda.

[4] These are the typical DN values associated with Amanda's middle (second through next-to-last) ports.

[5] This is the typical DN value associated with Amanda's last port (i.e. notification port).

[6] ADD all lines to be answered by Amanda.

# Modular DR5 (824) (continued)

| Modular DR5 (824) Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | General | 1st Port | Mid Ports | Last Port |
| . 3. Call Handling | | | | |
| . . Held reminder | | | | |
| . . DRT to prime | N[1] | | | |
| . . DRT delay | x[2] | | | |
| . . Trnsfr callbk | x[3] | | | |
| . . Park prefix | | | | |
| . . Park timeout | | | | |
| . . Camp timeout | | | | |
| . . Directd pickup | | | | |
| . . On hold | | | | |
| . 4. Miscellaneous | | | | |
| . . Backgrnd music | | | | |
| . . Direct-dial # | | | | |
| . . DISA DN | | | | |
| . . Auto DN | | | | |
| . . Alarm set | | | | |
| . . CAP Assignment | | | | |
| . . Link time | | | | |
| . . Set relocation | N | | | |
| . . Host delay | | | | |
| . . Supervision | | | | |
| . . External code | 9 | | | |
| . . Line pool codes | | | | |
| . . . *Line pool A* | 9 | | | |
| . . Installer pswd | | | | |
| . 5. System Data | | | | |

[1] DRT to prime calls are not compatible with Amanda if the lines have names other than the Norstar default names. Check with The Amanda Company for more details if you need to set DRT to prime to Y.

[2] This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

[3] This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

# Modular DR5 (824) (continued)

| Modular DR5 (824) Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| **B. General admin** | | | | |
| . 1. Sys speed dial | | | | |
| . 2. Names | | | | |
| . . Set names | | | | |
| . . . Show set:_ | | *241*[1] | *242-243*[2] | *244*[3] |
| . . . . *241, 242, 243*, etc. | | AMANDA1[4] | AMANDnn | AMANDnn |
| . . Line names | | | | |
| . 3. Time and date | | | | |
| . 4. Direct-Dial | | | | |
| . 5. Capabilities | | | | |
| . . Dialing filters | | | | |
| . . Rem access pkgs | | | | |
| . . Set abilities | | | | |
| . . . Show set:_ | | *241* | *242-243* | *244* |
| . . . . Set filters | | | | |
| . . . . Line/set filters | | | | |
| . . . . Set lock | | | | |
| . . . . Full handsfree | | | | |
| . . . . Auto handsfree | | Y | Y | Y |
| . . . . HF answerback | | | | |
| . . . . Pickup group | | | | |

[1] This is the typical DN value for the first port of a 4-port Amanda.

[2] These are the typical DN values associated with Amanda's middle (second through next-to-last) ports.

[3] This is the typical DN value associated with Amanda's last port (i.e. notification port).

[4] Be sure to add a mailbox in Amanda for each Amanda port, using this name as the Set Name.

# Modular DR5 (824) (continued)

| Modular DR5 (824) Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| . . . . Paging | | | | |
| . . . . Page zone | | | | |
| . . . . Aux. Ringer | | | | |
| . . . . Direct-dial | | | | |
| . . . . Forward on busy | | | | |
| . . . . . Forward to | | Next *(242)* | Next[1] | *241* |
| . . . . Forward no answer | | | | |
| . . . . . Forward to | | Prime *(221)*[2] | Prime *(221)* | Prime *(221)* |
| . . . . . Forward delay | | | | |
| . . . . Allow redirect | | | | |
| . . . . Redirect ring | | | | |
| . . . . Hotline | | | | |
| . . . . Priority call | | | | |
| . . Line abilities | | | | |
| . . COS passwords | | | | |
| . 6. Service Modes | | | | |
| . 7. Passwords | | | | |
| . 8. Log Defaults | | | | |
| . 9. Call Services | | | | |
| **C. Set Copy** | | | | |
| **D. Maintenance** | | | | |

[1] The next-to-the-last port should NOT forward to the last (notification) port.

[2] The Amanda Company recommends sending these calls to the Norstar Prime Set (live attendant) in the event of a Norstar or Amanda port malfunction.

# Compact DR5 (616)

| Compact DR5 (616) Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | General | 1st Port | Mid Ports | Last Port |
| **A. Configuration** | | | | |
| . 1. Trk/Line Data | | | | |
| . . Show line:_[1] | | | | |
| . . . Trunk Data | | | | |
| . . . . Trunk mode | | | | |
| . . . . Dial mode | Tone | | | |
| . . . . Full AutoHold | | | | |
| . . . Line Data | | | | |
| . . . . Line type | *PoolA*[2] | | | |
| . . . . Prime set | | | | |
| . . . . Aux. Ringer | | | | |
| . . . . Auto privacy | | | | |
| . 2. Line Access | | | | |
| . . Show set:_ | | *33*[3] | *34-35*[4] | *36*[5] |
| . . . Line Assignment | | All[6] | None | None |
| . . . Answer DNs | | | | |
| . . . Ringing | | | | |
| . . . . *Line01*[7] | | Ring | No Ring | No Ring |
| . . . . *Line02*, etc. | | Ring | No Ring | No Ring |
| . . . Line pool access | | | | |
| . . . . *Line Pool A* | | N | N | Y |
| . . . Intercom keys | | 1 | 1 | 1 |
| . . . Prime line | | I/C | I/C | I/C |

1 Do this for each line to be accessed by Amanda.

2 A Line Pool must be built and assigned to Amanda. Use a letter from A-C.

3 This is a typical value for a 4-port Amanda and a Norstar with no expansion cartridge. If you have an expanded CICS, the last four ports are 41 through 44.

4 These are the typical DN values associated with Amanda's middle (second through next-to-last) ports.

5 This is the typical DN value associated with Amanda's last port (i.e. notification port).

6 ADD all lines to be answered by Amanda.

7 For a tenant service, Amanda's integration patterns require three digits in the name for each line. For example, Line01 might be renamed Line001 or Line888, with mailbox 1 or mailbox 888 as the Company Greeting mailbox for that line. For more information see "Sharing Amanda" on page 61.

# Compact DR5 (616) (continued)

| Compact DR5 (616) Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | General | 1st Port | Mid Ports | Last Port |
| . 3. Call Handling | | | | |
| . . Held reminder | | | | |
| . . DRT to prime | N[1] | | | |
| . . DRT delay | x[2] | | | |
| . . Trnsfr callbk | x[3] | | | |
| . . Park prefix | | | | |
| . . Park timeout | | | | |
| . . Camp timeout | | | | |
| . . Directd pickup | | | | |
| . . On hold | | | | |
| . 4. Miscellaneous | | | | |
| . . Backgrnd music | | | | |
| . . Direct-dial # | | | | |
| . . Link time | | | | |
| . . Set relocation | N | | | |
| . . Host delay | | | | |
| . . Supervision | | | | |
| . . External code | 9 | | | |
| . . Line pool codes | | | | |
| . . . Line Pool A | 9 | | | |
| . . Installer pswd | | | | |

[1] DRT to prime calls are not compatible with Amanda if the lines have names other than the Norstar default names. Check with The Amanda Company for more details if you need to set DRT to prime to Y.

[2] This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

[3] This value must be higher than the number of rings Amanda waits for answer (forward delay) while supervising a call transfer.

# Compact DR5 (616) (continued)

| Compact DR5 (616) Programming Menu | Settings for Amanda: General | 1st Port | Mid Ports | Last Port |
|---|---|---|---|---|
| . 5. System Data | | | | |
| . . Individual DNs | | | | |
| . . . Old DN | *21* | | | |
| . . . New DN | *36*[1] | | | |
| **B. General admin** | | | | |
| . 1. Sys speed dial | | | | |
| . 2. Names | | | | |
| . . Set names | | | | |
| . . . Show set:_ | | *33* | *34-35* | *36* |
| . . . . *33*, *34*, *35*, etc. | | AMANDA1[2] | AMANDnn | AMANDnn |
| . . Line names[3] | | | | |
| . 3. Time and date | | | | |
| . 4. Direct-Dial | | | | |
| . 5. Capabilities | | | | |
| . . Dialing filters | | | | |
| . . Set abilities | | | | |
| . . . Show set:_ | | *33* | *34-35* | *36* |
| . . . . Set filter | | | | |
| . . . . Line/set filters | | | | |
| . . . . Set lock | | | | |

[1] This is Amanda's notification port.

[2] Be sure to add a mailbox in Amanda for each Amanda port, using this name as the Set Name.

[3] For a tenant service (in which different lines are answered by different companies or departments, each of which has its own Company Greeting), use this feature to change line names such as Line01 to something like Line001 or Line888. For a tenant service, Amanda's integration patterns require three digits in the name for each line. For example, If Line01 is renamed Line888, then mailbox 888 must be the Company Greeting mailbox for the corresponding company or department. For more information, see "Sharing Amanda" on page 61.

# Compact DR5 (616) (continued)

| Compact DR5 (616) Programming Menu | Settings for Amanda | | | |
|---|---|---|---|---|
| | **General** | **1st Port** | **Mid Ports** | **Last Port** |
| . . . . Full handsfree | | | | |
| . . . . Auto handsfree | | Y | Y | Y |
| . . . . HF answerback | | | | |
| . . . . Pickup group | | | | |
| . . . . Paging | | | | |
| . . . . Page zone | | | | |
| . . . . Aux. ringer | | | | |
| . . . . Direct-dial | | | | |
| . . . . Forward on busy | | | | |
| . . . . . Forward to | | Next (*34*) | Next[1] | First (*33*) |
| . . . . Forward no answer | | | | |
| . . . . . Forward to | | Prime (*21*)[2] | Prime | Prime |
| . . . . . Forward delay | | | | |
| . . . . Allow redirect | | | | |
| . . . . Redirect ring | | | | |
| . . . . Receive tones | | | | |
| . . . . Hotline | | | | |
| . . . . Priority call | | | | |
| . . Line abilities | | | | |
| . . . Line filters | | | | |
| . . COS passwords | | | | |
| . 6. Service Modes | | | | |
| . 7. Passwords | | | | |
| . 8. Log Defaults | | | | |
| . 9. Call Services | | | | |
| **C. Set Copy** | | | | |
| **D. System Version** | | | | |

[1] The next-to-the-last port should NOT forward to the last (notification) port.

[2] The Amanda Company recommends sending these calls to the Norstar Prime Set (live attendant) in the event of a Norstar or Amanda port malfunction.

# Chapter 4:
# Defining Tone Patterns

## Using Tone Files

To work in a variety of telephone environments, Amanda must detect the tones that indicate line conditions, such as busy, reorder, or hang-up. Having fixed configurations for all possible environments would be impossible. So, the voice board must be programmed to detect the tones for your system.

This chapter explains how to program an Amanda Company voice board to understand those tones **only** if your system is not working correctly. Use the KSU with Amanda to find out. Use Setup (and SmartCall, the utility for defining tones) only if necessary.

Amanda Company voice boards for Norstar require two files, one for the Global Tone Detection (GTD) tones and one for Call Progress Monitoring (CPM) tones. These files must be named 1001.GTD and 1001.CPM.

GTD tones let Amanda know that a caller has hung up after an inbound call. A central office (CO) line usually returns a dial tone, and a PBX or KSU usually returns a reorder (or fast busy) tone. If you program these tones as GTD tones, the hang-up can easily be detected.

Call Progress Monitoring (CPM) tones let Amanda know the status of the outbound calls that she monitors. Amanda monitors their progress to determine their outcome. You usually program several CPM tones. For example, the line might be busy, the operator might intercept the call, or a fax tone might be generated.

In general, GTD tones are detected while messages are being played or recorded and during the collection of DTMF digits. CPM tones are detected only during the progress analysis of an outbound call.

## Defining Tones

The Setup utility runs another utility, named Diag, to “learn” the tone patterns for ringing, busy, hang-up, and reorder (also called fast busy). However, Diag provides a lot more functionality that just tone definitions. The only part of Diag in which you are currently interested is the Scan Ctrl option on the SmartCall menu.

Before running the Diag utility, you should satisfy the following requirements:

- Verify that the extension to which that port is connected is *not* in any hunt group, and does *not* have any call forwarding programmed.
- Define a non-Amanda extension that has a telephone connected, is not forwarded, and will *not* be answered. This becomes your Ring No Answer (RNA) test station.

**To run Setup and Diag:**

1. If Amanda is running, shut down the Amanda system:
   a. Press Alt+S (if Amanda is running as a standalone) or s (if Amanda is running as a voice server).
   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).

2. Change to the AMANDA directory—unless you are there already. At the DOS prompt, type:

   ```
   CD C:\AMANDA
   ```

   Then press Enter.

3. Now that the DOS prompt reads C:\AMANDA, type:

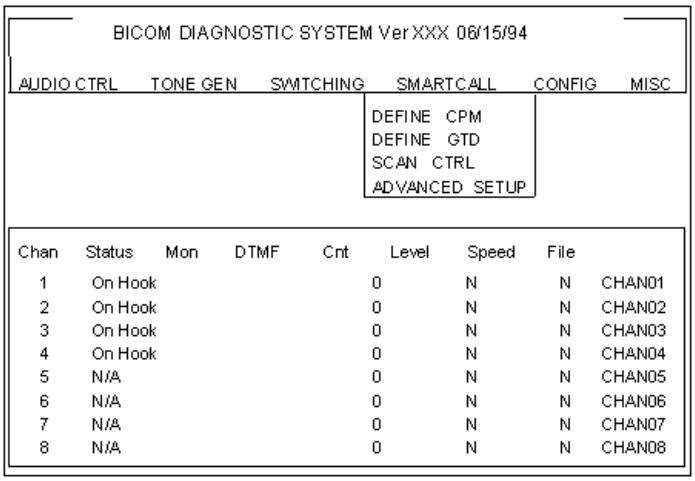
   ```
   SETUP
   ```

   Then press Enter.

   The Amanda Configuration Utility menu appears.

4. From the Configuration Utility menu, press 2 to select Telephone System Tone Patterns.

   The Diag main screen appears.

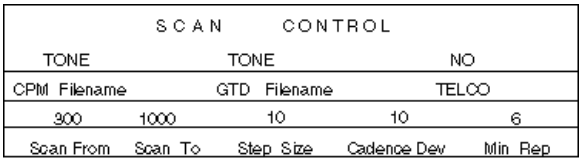



***Diag Main Screen with SmartCall Menu Selected***

5. Press Right Arrow three times to select the SmartCall menu.

6. Press Down Arrow twice to select Scan Ctrl from the menu. Then press Enter.

The Scan Control screen appears.




***Scan Control Screen***

**To provide the CPM and GTD file names and set options that control how the tones are learned:**

1. Replace the CPM filename (TONE) with 1001 then press Enter.

2. Replace the GTD filename (TONE again) with 1001 then press Enter.

3. You might want to reset some of the other options:

   **TELCO Rounding** — Controls whether tone frequencies are rounded.

   Use NO to use the actual tone frequencies found during the SmartCall scan.

   Use YES to round the frequencies to the nearest TELCO frequency boundary.

   If there might be a large variation or error in the frequency being learned, perhaps due to an unregulated CO environment, use YES. Otherwise, always use NO.

   **Scan To and Scan From** — Control the frequency range over which SmartCall monitors for tones. The frequency range of the telephone port is 300Hz to 3300Hz. To scan this range would take several seconds. However, most CPM and GTD tones are in the range 300Hz - 1000Hz, the default range, which takes much less time to scan. Expand the range if:

   - The frequency of the tone is known to be or suspected to be greater than 1000Hz
   - The scan produces no tone frequency

   **Step Size** — Determines the size of the frequency step SmartCall uses when scanning the defined range. Currently fixed at 10Hz to provide a high resolution of frequencies.

   **Cadence Dev** — Defines the percent of deviation to be used for the parameters, such as 1st On Time Deviation and 1st Off Time Deviation, when SmartCall creates the tone definition for the tone being learned.

   **Min Rep** — Sets the number of repetitions of a tone's cadence to be detected before the SmartCall learn process can terminate. Specifying a higher number of repetitions gives greater accuracy in determining On and Off times, but it requires a much longer learn time.

4. After setting all the necessary options, press F2 to save your choices.

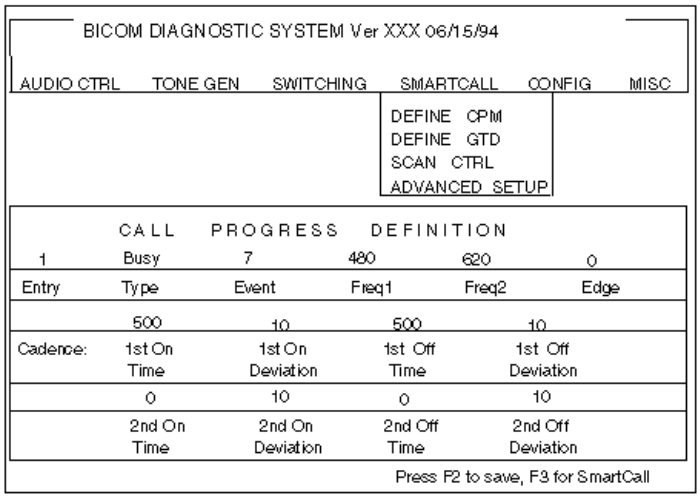
5. Press Esc to return to the Diag main screen.

**NOTE:** Amanda will not run properly without the 1001.CPM and 1001.GTD files. These files must be in the C:\AMANDA\PBX.DB directory. If you run Diag from C:\PLATFORM, instead of from the Setup utility, it cannot find the 1001.CPM or 1001.GTD files and creates new ones in C:\PLATFORM. It is best to always run Diag from Setup.

**To learn CPM or GTD tones:**

1. From the SmartCall menu, select Define CPM or Define GTD. Then press Enter.

   The Call Progress Definition or the Global Tone Definition screen appears.

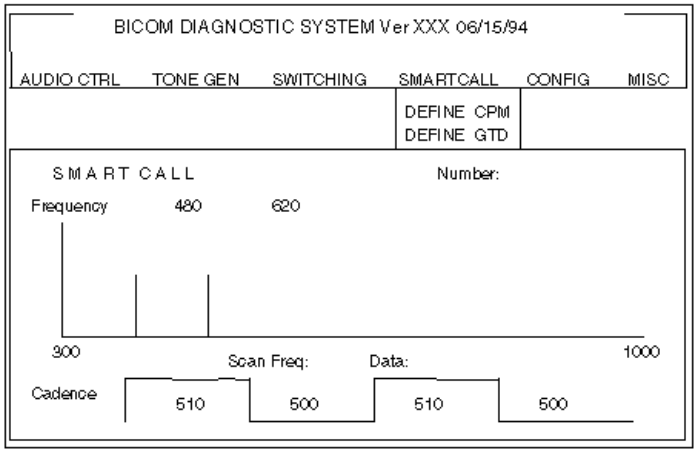



***Call Progress Definition Screen***

2. Press Page Down or Page Up until you locate a page for the tone.

3. Press F3 to learn the tone.

   The SmartCall frequency and cadence screen appears on top of the main screen.




***SmartCall Screen***

4. Depending on the type of tone, you will either:

   - Just press Enter.
   - Type a telephone number in the Number field in the upper right corner of the SmartCall screen then press Enter.

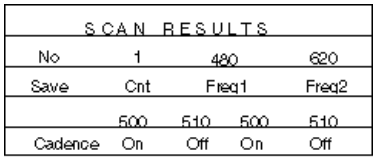
   | | |
   |---|---|
   | outdial code | Type the outside line access and telephone numbers for a connection to test for tone patterns (such as the time or weather number). For example:<br>9,5551111<br>Then press Enter. |
   | reorder code | Type any dial code that generates a reorder tone pattern on the telephone switching system. Typically, invalid extension numbers work well, for example, 555 generally works. If not, try 444 or 777 or any number that generates a fast busy tone pattern.<br>Then press Enter. |
   | RNA station number | Type a non-Amanda extension that has a telephone connected and is *not* answered. If voice-announce or call-announce is enabled, remember to enter the extension plus the additional digit or digits that force the extension to ring. For example, if the RNA test station is 112, type:<br>1121-<br>Then press Enter |

   The scan starts and SmartCall updates the frequency bar graph and the cadence squarewave at the bottom of the SmartCall screen. The current scan frequency value appears in the Scan Freq field and the energy magnitude detected at this frequency appears in the Data field.

   **NOTE:** The data value is a relative energy indicator. Do not use it as an actual signal strength measurement.

   When SmartCall detects a tone, it beeps as long as the tone is present (On Time). This might give you a “feeling” for the cadence and approximate durations and help you select the best result when the scan produces more than one result.

   As the scan terminates, the Scan Results screen displays the first result.




***Scan Results Screen***

5. Press Page Down (and Page Up) to check for additional results. An End-of-File message appears when you reach the last result.

   For the reasons why you might find more than one result, see “Reasons for Multiple Results” on page 42.

6. Select the best result—if there is more than one. Use the following rules:
   - The first result permits the fastest detection of the tone. If the Cnt field for the first result is greater than 1, use it.
   - If the Cnt field for a result is 1, the result was observed only once and might be suspect.
   - Sometimes a result transitions from one pattern to another. In this case, it is a good idea to ignore the transition result and take the last result.
   - If listening to the beeps during the scan gives you a "feeling" for the overall cadence, use this information to help you select a result.

7. While the selected result appears in the Scan Results screen, toggle the Save field to YES by pressing the spacebar.

8. Press F2.

   The Call Progress Definition or the Global Tone Definition screen reappears.

9. Fill in the Type and Event fields using the following information. (The rest of the fields should have been filled in automatically. However, they are described at the end of this section in case you need to adjust them at some point in time.)

   Type — Press the spacebar until the type of tone to be learned appears on the screen. Be careful using this screen—and especially this field. There is no way to lock a definition so you can accidentally change the contents of the current definition and not remember what its previous value was.

   For CPM: Defines the general type of CPM tone:

   1 = Dial tone(line is available)
   2 = Busy(line unavailable)
   3 = Reorder(line unavailable)
   4 = Ring No Answer(telephone is ringing)

   When the CPM tone type is a ringback tone, the learning process terminates after the number of rings for a Ring No Answer.

   For GTD: Not Used.

   Event — Type a tone ID number.

   For CPM: Use one of the following PCPM numbers:

   For busy/reorder tones:7

   For no answer:8

   For no response:9

   For connected:10

   For operator intercept tones:11

   (Don't use 12 for fax tones; Amanda expects to find the fax tone in the GTD file.)

   For GTD: A PCPM number from 13 to 36.

10. Press F2 to copy the selected result to the 1001.CPM or 1001.GTD file.

11. Repeat these procedures for additional tones.

**To exit Diag:**

1. From the Misc menu, select Sign Off then press Enter.
   (Use the arrow keys to move to the Misc menu.)

   A confirmation box appears.

2. Press Down Arrow to select YES then press Enter.

**NOTE:** If your PBX or KSU user's manual lists tone information, you can type it directly into the fields in the Call Progress Definition and the Global Tone Definition screens.

## Tone Definition Fields

| Definition Field | Explanation |
|---|---|
| Type | For CPM: Defines the general type of CPM tone:<br>1 = Dial tone(line is available)<br>2 = Busy(line unavailable)<br>3 = Reorder(line unavailable)<br>4 = Ringback(telephone is ringing)<br>When the CPM tone type is a ringback tone, the learning process terminates after the number of rings for a Ring No Answer.<br>For GTD: Not Used.<br>**CAUTION:** Be careful using this screen—and especially this field. There is no way to lock a definition so you can accidentally change the contents of the current definition and not remember what its previous value was. |
| Event | The tone ID number for the event being learned.<br>For CPM: Use one of the following PCPM numbers:<br>For busy/reorder tones:7<br>For no answer:8<br>For no response:9<br>For connected:10<br>For operator intercept tones:11<br>(Don't use 12 for fax tones; Amanda expects to find the fax tone in the GTD file.)<br>For GTD: A PCPM tone number from 13 to 36. |
| Freq1 | The first frequency of a dual frequency tone or the only frequency in a single frequency tone.<br>**NOTE:** When set to zero, the tone's frequency is ignored during the detection process. (Only its cadence is considered.) |
| Freq2 | The second frequency of a dual frequency tone; zero otherwise. |
| Edge | For CPM: Not used.<br>For GTD: Specifies whether the GTD event is queued at the beginning of the tone (leading edge) or after the tone has ended (trailing edge). |
| 1st On Time | The number of milliseconds that tone energy is on the line for the first cadence period. |

## Tone Definition Fields (continued)

| Definition Field | Explanation |
|---|---|
| 1st On Deviation | The percentage of deviation allowed in the 1st On Time when measured by the voice board. 10% is a good working value. |
| 1st Off Time | The number of milliseconds that the line is silent after the 1st On Time. |
| 1st Off Deviation | The percentage of deviation allowed in the 1st Off Time when measured by the voice board. 10% is a good working value. |
| 2nd On Time | The number of milliseconds that tone energy is on the line after the first cadence period. |
| 2nd On Deviation | The percentage of deviation allowed in the 2nd On Time when measured by the voice board. 10% is a good working value. |
| 2nd Off Time | The number of milliseconds that the line is silent after the 2nd On time. |
| 2nd Off Deviation | The percentage of deviation allowed in the 2nd Off Time when measured by the voice board. 10% is a good working value. |
| Repetition Count | For CPM: Not used.<br>For GTD: Specifies the number of times a GTD cadence is to be detected on the line before queuing the GTD digit or event. |

**NOTE:** Set all of the 2nd On and 2nd Off options to zero unless the tone is a dual cadence tone.

## Reasons for Multiple Results

The common reasons for multiple results using any PBX or KSU are:

- Different PBXs can have one cadence period different from all the others. A good example of this is the Panasonic PBX busy tone which has the timing: 500ms on, 500ms off, 500ms on, 750ms off, 500ms on, 500ms off. The 750ms Off Time only occurs once in an otherwise standard busy signal cadence.
- Some tones may have a shortened 1st On Time before the normal cadence stabilizes, for example: 120ms on, 250ms off, 250ms on, 250ms off, for a reorder tone.
- Sometimes a tone is on the line for less time than the duration of the scan. Several PBXs use dial tone only for a few seconds while waiting for DTMF digits. If no digits arrive, then another tone (usually reorder) informs the user to hang-up since the time for dialing has expired.
- Some noise on the line (especially with CO lines) can cause a false cadence measurement since the voice board is analyzing energy transitions from silence to sound and vice-versa.

# Chapter 5:
# Defining Integration Patterns

## Selecting a PBX File

The 1001.PBX file installed on your Amanda system by this installation program is good for 2-digit and 3-digit extensions. The Amanda Company provides some additional PBX files. If you need the information contained in one of them, you can copy it as 1001.PBX. (Amanda uses only 1001.PBX for integration purposes.)

| PBX File | Contains Integration Information For: |
|---|---|
| 1002.PBX | 2-digit extensions only |
| 1012.PBX | 2-digit extensions and tenant service |
| 1003.PBX | 3-digit extensions only |
| 1013.PBX | 3-digit extensions and tenant service |
| 1004.PBX | 4-digit extensions only |
| 1014.PBX | 4-digit extensions and tenant service |
| 1007.PBX | 7-digit extensions only |
| 1017.PBX | 7-digit extensions and tenant service |

For a tenant service (in which different lines are answered by different companies, departments or even IVR applications), you must do the following:

- Copy the appropriate PBX file (1012.PBX, 1013.PBX, 1014.PBX, or 1017.PBX) as C:\AMANDA\PBX.DB\1001.PBX.
- Make sure that the Norstar KSU's line name ends with three digits. For example, Line001 or Line888.
- Create a mailbox with the same number as that in the name of the line.

  Do one of the following:

  - Use that mailbox as the Company Greeting mailbox for that line. For example, if the line is Line888, then mailbox 888 can be the Company Greeting mailbox for the company or department that will answer that line.

- Cause Amanda to go from that mailbox to the correct Company Greeting mailbox. For example, if lines 1 and 2 support two companies that share an Amanda system, mailboxes 1 and 2, corresponding to Line001 and Line002, can have @G(990) in their Extension fields—causing Amanda to play one company's greeting. Mailboxes 3 and 4, corresponding to Line003 and Line004, can have @G(880) in their Extension fields—causing Amanda to play the other company's greeting.

  For more about Company Greeting mailboxes, see *Administering Amanda@Work.Place*.

For more information about tenant service, see "Sharing Amanda" on page 61.

**To copy a PBX file as 1001.PBX:**

1. If Amanda is running, shut down the Amanda system:
   a. Press Alt+S (if Amanda is running as a standalone) or s (if Amanda is running as a voice server).
   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).
2. At the DOS prompt, type:

   ```
   CD C:\AMANDA\PBX.DB
   ```

   You will see a new DOS prompt, something like:
   `C:\AMANDA\PBX.DB>`
3. At the DOS prompt, type:

   ```
   COPY 1001.PBX 1001.BAK
   ```
4. At the DOS prompt, type:

   ```
   COPY 10xx.PBX 1001.PBX
   ```

   where 10*xx* represents the name of the .PBX file that meets your needs.

# Using Character Codes

To modify the DTMF patterns in the 1001.PBX file, you need to know that 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 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 (with examples for 2-digit and 3-digit extensions):

| Code | Definition |
|---|---|
| b | Busy call state<br>When bb (or bbb) appears in the integration pattern, Amanda checks the Busy Chain. If the Busy Chain is blank, she plays the custom busy message for mailbox bb (or bbb) or the system busy message. |
| c | ANI or Caller ID digits<br>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. |
| e | Direct dial call state (used to access a mailbox directly by Amanda asking for a security code)<br>When ee (or eee) appears in the integration pattern, Amanda assumes the caller wants to log in to mailbox ee (or eee) and asks for the security code. |
| i | Immediate record call state (plays the record tone and starts recording a message)<br>When ii (or iii) appears in the integration pattern, Amanda begins recording a message for mailbox ii (or iii) without playing a prompt first. |
| r | Ring-no-answer call state that indicates who the call was for and that it was not answered<br>When rr (or rrr) appears in the integration pattern, Amanda checks the Ring No Answer (RNA) Chain. If the RNA Chain is blank, she plays the current greeting for mailbox rr (or rrr) or the system greeting.<br>See the configuration option "integration_greeting" on page 163 for information about how the system greeting can be played when an integrated call has both the rr and ss (or rrr and sss) fields set. |
| s | Information regarding where the call came from (for handling message replies)<br>If ss (or sss) is found in the integration pattern along with b's or r's, Amanda recognizes mailbox ss as the sender of the message—if one is left.<br>**TIP:** When using s's, the integration requires mailboxes for all telephones, even those in the file room and lobby. |
| t | Trunk call or CO line ID; this can also be used for dynamic port allocation<br>When tt (or ttt) appears in the integration pattern, Amanda processes mailbox tt (or ttt) 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, mailboxes 1–10 can have @G(990) in their Extension fields—causing Amanda to play one company's greeting. mailboxes 11–20 can have @G(880) in their Extension fields—causing Amanda to play the other company's greeting.<br>**Special case:**"Tttt" matches lines with the name LINE (upper or lowercase) followed by three-digits. Amanda processes mailbox ttt as above. |
| x | Wild card that matches anything (use this carefully)<br>For example 6xxxx would match every inband signaling string that had a 6 followed by four other characters. |

# Chapter 6:
# 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 options need no change whatsoever.

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

## Configuring Amanda for Your KSU

To configure Amanda to work with your KSU, the following configuration options must be set correctly:

- **smdi_base_port** must be the number of the lowest DN connected to Amanda. The default is 241, which might not be appropriate for your KSU.
- **cfg_port** should be the DN with least incoming traffic (The default is 3—assuming that it has the least traffic on a 4-port system which uses port 4 for notification.)
- **n_ochan** must be 0 (which is the default).
- **notify_restriction** must be the highest number port connected to Norstar. (The default is 4—assuming a 4-port system.) This port should forward to the first port which forwards the rest of the ports. However, no port should forward to the notify_restriction port.

## 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 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 Column**

You will use the Location and Action columns to implement these features on Amanda. The Location column uses this symbol → to separate the choices you must make at each menu level to select the feature from the correct Amanda screen. For example, "In the Setup utility, select System Configuration Options→General Configuration→Incoming Calls" means "In the Setup utility, first select Configuration Options, then select General Configuration, then select Incoming Calls."

The Location column includes the name of the configuration option (called a parameter) for each feature. The options and their current settings are stored in C:\AMANDA\INSTALL.CFG. You can review them using the Setup utility. From Setup, select System Configuration Options→Advanced Configuration→General.

# First Use Questionnaire

| Question | Circle Response | Location and Amanda Parameter | Action |
|---|---|---|---|
| 1) Amanda normally says "Please hold while I try that extension" as she transfers a call. This feature can be turned off.<br>Do you want Amanda to say "Please hold….?" | YES | In the Setup utility, select System Configuration Options→General Configuration→ Incoming Calls.<br>Amanda parameter is `please_hold` | Set the Amanda Says "Please Hold While…" check box to T for True, which is the default. |
| | NO | | Set the Amanda Says "Please Hold While…" check box to F for False<br>You can also bypass this message for individual mailboxes using the Token Programming Language (although only blind transfers are supported). |
| 2) Do you want Amanda to verify that a caller is still on the telephone before transferring the call to an operator?<br>(Amanda asks the caller to "Say yes at the tone" before transferring the call.) | YES | In the Setup utility, select System Configuration Options→General Configuration→ Incoming Calls.<br>Amanda parameter is `dtmf_gate` | Set the Amanda Says "Please Say 'Yes'…" check box to T for True. |
| | NO | | Set the Amanda Says "Please Say 'Yes'…" check box to F for False, which is the default. |
| 3) Do you want callers to be able to hold for busy extensions? | YES | In the Setup utility, select System Configuration Options→General Configuration→ Incoming Calls.<br>Amanda parameter is `cancel_busy_hold` | 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. |
| 4) If YES to 3, do you want active or inactive hold?<br>On active hold, the caller is prompted to press * to remain on hold.<br>On inactive hold, the caller takes no action to stay on hold.<br>(800 numbers benefit from using active hold, because the caller cannot leave the telephone unattended.) | ACTIVE | In the Setup utility, select System Configuration Options→General Configuration→ Incoming Calls.<br>Amanda parameter is `active_hold` | Set the Active Hold check box to T for True, which is the default. |
| | INACTIVE | | Set the Active Hold check box to F for False. |

# First Use Questionnaire (Continued)

| Question | Circle Response | Location and Amanda Parameter | Action |
|---|---|---|---|
| 5) Do you want direct messages to play the Name/Extension recording instead of the mailbox's greeting?<br>(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 | In the Setup utility, select System Configuration Options→General Configuration→ Incoming Calls.<br>Amanda parameter is `short_direct_send` | Select the Play User's Name and Extension Recording option. |
| | NO | | Select the Play User's Greeting option (which is the default). |
| 6) 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?<br>(This decision can vary from port to port.) | ALL CALLS | In the Setup utility, select System Configuration Options→Advanced Configuration→ Per Port.<br>Amanda parameter is `n_rings` | Set N_RINGS to 1 for each port.<br>This is a per port setting. The default is one ring on each port.<br>(Amanda is being set up as a primary attendant.) |
| | AFTER *x* RINGS<br>What is *x*? | | Set N_RINGS to x for each port, where *x* in the number of rings. This is a per port setting.<br>(Amanda is being set up as a secondary attendant.) |
| 7) Do you want callers who use the company directory (411) to press * to transfer to the mailbox being described? | YES | Global settings parameter is `tmo_dir_transfer`. | Set tmo_dir_transfer a number greater than 0. The default is 2. |
| | NO | | Set tmo_dir_transfer to 0. |
| 8a) Do you want users and callers to be able to listen to, rerecord, or cancel messages and greetings that they create? | YES | In the Setup utility, select System Configuration Options→General Configuration→ Messages.<br>Amanda parameters are `end_rec_menu` `record_menu` | Set the Allow Listening To… check box to T for True, which is the default. |
| | NO | | Set the Allow Listening To… check box to F for False. |
| 8b) Do you want users and callers to hear a prompt before they start recording or just the beep?<br>The prompt is "Begin recording at the tone. Finish by pressing # or hanging up." | PROMPT and BEEP | In the Setup utility, select System Configuration Options→Advanced Configuration→ General.<br>Amanda parameters are `begin_rec_prompt` `record_menu` | Set `begin_rec_prompt` to T for True, which is the default. Set `record_menu` to T for True, which is the default. |
| | BEEP ONLY | | Set `begin_rec_prompt` to F for False. Set `record_menu` to T for True, which is the default. |
| 9) When users listen to messages, Amanda normally plays the messages in chronological order.<br>Do you want users to hear urgent messages first? | YES | In the Setup utility, select System Configuration Options→General Configuration→ Messages.<br>Amanda parameter is `urgent_to_front` | Set the Urgent Messages First check box to T for True, which is the default. |
| | NO | | Set the Urgent Messages First check box to F for False. |
| 10) 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 | In the Setup utility, select System Configuration Options→General Configuration→ Messages.<br>Amanda parameter is `play_new_first` | Set the Play Next New Message check box to T for True. |
| | FIRST MESSAGE IN LIST | | Set the Play Next New Message check box to F for False, which is the default. |

# First Use Questionnaire (Continued)

| Question | Circle Response | Location and Amanda Parameter | Action |
|---|---|---|---|
| 11) What time stamp should a forwarded message have? You can use the time the message was recorded or the time the message was forwarded.<br>(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 | In the Setup utility, select System Configuration Options→General Configuration→ Messages.<br>Amanda parameter is `timestamp_ forwards` | Select the Time Originally Recorded option, which is the default. |
| | TIME FORWARDED | | Select the Time Forwarded option. |
| 12) Do you want Amanda to tell the user the date and time a message was recorded before playing the message?<br>This option can be modified for each user. | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set the D/T option to YES. |
| | NO | | Set the D/T option to NO.<br>**NOTE:** A user can always get the message date/time by pressing 74 during the message even if this option is set to NO. |
| 13) If YES to 12, do you want Amanda to say 'today' and 'yesterday' instead of the exact date? This option is set for all users. | YES | In the Setup utility, select System Configuration Options→General Configuration→ Messages.<br>Amanda parameter is `abbreviate_dates` | Select the Amanda Says "Today" And "Yesterday" For Dates option, (which is the default). |
| | NO | | Select the Amanda Always Says Full Date option. |
| 14) How many times should the telephone ring before Amanda decides the user is unavailable?<br>(After these rings, Amanda takes a message, reroutes the call, or does whatever she is configured to do for Ring No Answer.) | 1 2 3<br>4 5 6<br>7 8 9 | In Amanda, select Users menu, then enter 997 in mailbox. | Set the Set Maximum Rings value to the circled number. The current default is 0, which means 4 rings.<br>**CAUTION:** If you are using the U token in Extension fields (to perform a partially supervised transfer), Maximum Rings must be set to 1. |
| 15) Do you want users to be able to turn Do Not Disturb on and off? | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set Do Not Disturb's Lock to OFF. |
| | NO | | Set Do Not Disturb's Lock to ON. |
| 16) Do you want Do Not Disturb initially ON or initially OFF? | ON | In Amanda, select Users menu, then enter 997 in mailbox. | Set Do Not Disturb to ON. |
| | OFF | | Set Do Not Disturb to OFF. |
| 17) Do you want users to be able to turn call screening on and off?<br>(Call screening allows users to accept or reject calls based on who is calling.) | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set Screen Calls' Lock to OFF. |
| | NO | | Set Screen Calls' Lock to ON. |
| 18) Do you want call screening initially ON or initially OFF? | ON | In Amanda, select Users menu, then enter 997 in mailbox. | Set Screen Calls to ON. |
| | OFF | | Set Screen Calls to OFF. |

# First Use Questionnaire (Continued)

| Question | Circle Response | Location and Amanda Parameter | Action |
|---|---|---|---|
| 19) Do you want callers to leave messages for the users they call? | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set Store Messages to YES.<br>Set Store Messages's Max to a number of seconds for each message. |
| | NO | | Set Store Messages to NO;<br>make sure Copy Messages To is blank. |
| 20) Do you want everyone to use the same greeting (and in the same voice) when the telephone is not answered?<br>(NO allows each user to create his own greeting.) | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set Current Greeting's Max to 0. |
| | NO | | Set Current Greeting to 0;<br>set Current Greeting's Max to a number of seconds for each user's recording.<br>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.Place provides 7 greetings per mailbox.) |
| 21) If YES to 20, do you want to use Amanda's system greeting or a company-wide custom greeting when a telephone is not answered?<br>(The system greeting is "Please leave a message for" followed by the system or custom Name/Extension recording.) | SYSTEM | In Amanda, select Users menu, then enter 997 in mailbox. | Set Current Greeting to 0, which is the default. |
| | CUSTOM | | Set Current Greeting to 1. Record a greeting for some mailbox (e.g., 445), then use DOS 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:<br>`COPY` *`custom_grt`*<br>`C:\VMB.DB\?\2??\GRT1.VOX`<br>For 4-digit extensions that end with 5, use:<br>`COPY` *`custom_grt`*<br>`C:\VMB.DB\?\4???\GRT1.VOX`<br>(Here, *custom_grt* is `C:\VMB.DB\5\445\GRT1.VOX`.)<br>Update the mailbox template (997) before you create the other mailboxes. Use the COPY command shown above after the IDs have been created. |
| 22) 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)?<br>(NO allows each user to create his own busy greeting.) | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set Busy Message's Max to 0. |
| | NO | | Set Busy Message's Max to a number greater than zero, such as 45.<br>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. |

# First Use Questionnaire (Continued)

| Question | Circle Response | Location and Amanda Parameter | Action |
|---|---|---|---|
| 23) If YES to 22, do you want to use Amanda's system busy greeting or a custom busy greeting?<br>(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 | In Amanda, select Users menu, then enter 997 in mailbox. | Set Busy Message to SYS. |
| | CUSTOM | | Set Busy Message to CUS. Record the busy message for a mailbox (e.g., 445), then use DOS 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:<br>`COPY` *`custom_bsy`*<br>`C:\VMB.DB\?\2??\BUSY.VOX`<br>For 4-digit extensions that end with 5, use:<br>`COPY` *`custom_bsy`*<br>`C:\VMB.DB\?\4???\BUSY.VOX`<br>(Here, *custom_bsy* is `C:\VMB.DB\5\445\BUSY.VOX`.)<br>Update the mailbox template (997) before you create the other mailboxes. Use the COPY command shown above after the IDs have been created. |
| 24) Do you want Amanda to let the user know who the call is for?<br>(This is primarily for people who answer calls for more than one person or share a telephone.) | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set ID Call? to YES. |
| | NO | | Set ID Call? to NO. |
| 25) If YES to 24, do you want Amanda to let the user accept or reject the call based on who it is for? | YES | In Amanda, select Users menu, then enter 997 in mailbox. | Set Screen Calls to ON and ID Call? to YES. |
| | NO | | Use the settings already specified for Screen Calls and ID Call? in questions 17, 18, and 24. |
| 26) If YES to 25, do you want users to hear:<br>• Both who is calling and who the call is for.<br>• Only who the call is for. | BOTH | In the Setup utility, select System Configuration Options→Advanced Configuration→ General (Settings).<br>Amanda parameter is `modified_call_screening` | Set `modified_call_screening` to `F` for False. |
| | ONLY WHO CALL IS FOR | | Set `modified_call_screening` to `T` for True. |
| 27) Do you want to use a system or custom Name/Extension recording?<br>(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.")<br>**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 | In Amanda, select Users menu, then enter 997 in mailbox. | Set Name/Ext to NO. The users cannot make recordings. |
| | CUSTOM | | Set Name/Ext. to YES. Each user should make a recording. Until a user makes his recording, the system recording is used. |

# First Use Questionnaire (Continued)

| Question | Circle Response | Location and Amanda Parameter | Action |
|---|---|---|---|
| 28) Do you want to log information about messages? If YES, the MSG.LOG file will store:<br>• The date and time every message is received<br>• The date and time every mailbox is checked for messages along with the DTMF the user entered | YES | In the Setup utility, select System Configuration Options→General Configuration→ Messages.<br>The Amanda parameter is `msg_log` | Set the Log Info About Messages check box to T for True. |
| | NO | | Set the Log Info About Messages check box to F for False, which is the default. |
| 29) 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 | In the Setup utility, select System Configuration Options→General Configuration→ Messages.<br>The Amanda parameter is `user_log` | Set the Log Info About User Access check box to T for True. |
| | NO | | Set the Log Info About User Access check box to F for False, which is the default. |
| 30) What password does the administrator want to use for Amanda?<br>(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. | In the Setup utility, select System Configuration Options→General Configuration→ Password.<br>Amanda parameter is `password` | Enter a password which contains no more than eight letters. Passwords are case-sensitive. |
| 31) What language should Amanda use for prompts, such as “Please hold…?”<br>(You can offer information in more than one language, ask for details.) | ENGLISH<br>SPANISH | In the Setup utility, select System Configuration Options→General Configuration→ General Defaults.<br>Amanda parameter is `prompt_file` | Press F2 and select a language from the drop down list in the Language list box. ENGLISH is the default. If you do not select English, you must also install the prompts for the language. |
| 32) Will Amanda be connected to a printer so that you can print reports? | YES | In the Setup utility, select System Configuration Options→General Configuration→ General Defaults.<br>Amanda parameter is `lpt_port` | Set the Printer Attached To LPT value to 1. |
| | NO | | Set the Printer Attached To LPT value to 0, which is the default. |
| 33) Do you want to shut down Amanda for disk maintenance and/or tape backups? | YES | In the Setup utility, select System Configuration Options→General Configuration→ General Defaults.<br>Amanda parameter is `shutdown` | Set the Shutdown For Maintenance And Backups check box to T for True. |
| | NO | | Set the Shutdown For Maintenance And Backups check box to F for False. |
| 34) If YES to 33), do you want Amanda to shutdown once a week or everyday? | WEEKLY Write a day and a time. | In the Setup utility, select System Configuration Options→General Configuration→ General Defaults.<br>Amanda parameter is `shutdown` | Select the Once A Week On [TUE] At [01:30] option. The default is Tuesday at 1:30 A.M You can specify a different day from the TUE drop down list box. You can enter a different time in the 01:30 text box. Time value uses the 24-hour format (HHMM). |
| | DAILY Write down the time. | | Select the Everyday at <HHMM> option and enter the time at HHMM, using the 24-hour format. |

# First Use Questionnaire (Continued)

| Question | Circle Response | Location and Amanda Parameter | Action |
|---|---|---|---|
| 35) What words do you want the screen saver to display on the Amanda computer?<br>(Write the words. The default is "Buy more Amandas.") | Write a phrase. | In the Setup utility, select System Configuration Options→General Configuration→ General Defaults.<br>Amanda parameter is `advertising` | At the Screen Saver Phrase text box, enter the phrase. Recommended length is up to 30 characters, but maximum length is 80. |
| 36) 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?<br>Be aware that deleted messages are gone forever. | YES | In the Setup utility, select System Configuration Options→Advanced Configuration→ General (Settings).<br>Amanda parameter is `purge` | See Action for Question 36. |
| | NO | | Set Amanda parameter `purge` to `0`, which is the default. |
| 37) If YES to 36, 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). | In the Setup utility, select System Configuration Options→Advanced Configuration→ General (Settings).<br>Amanda parameter is `purge` | Set `purge` to `x`, where x is the number of days (1-90) after being heard that a message is purged. |
| 38) 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** | | There is no config option or mailbox field for this.<br>To rerecord HOLD.VOX:<br>1. Shut down Amanda.<br>2. At the DOS prompt (C:\AMANDA), type: `COPY HOLD.VOX MUSIC.VOX` so you can use this file later. If you already have a MUSIC.VOX file, use another name.<br>3. Restart Amanda.<br>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.<br>5. Make your recording. It becomes the file C:\AMANDA\HOLD.VOX and is played by Amanda to callers on hold.<br>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 HOLD*x*.VOX with a DOS command: `COPY HOLD.VOX HOLDx.VOX` Do the recording for the real HOLD.VOX (the first music/message the caller hears) last. |

# Running Setup

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

You run Setup only to set tone patterns and Amanda's system configuration options.

**To run Setup:**

1. If Amanda is running, shut down the Amanda system:
   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).

2. Change to the AMANDA directory—unless you are there already. At the DOS prompt, type:

   ```
   CD C:\AMANDA
   ```

   Then press Enter.

3. Now that the DOS prompt reads C:\AMANDA, type:

   ```
   SETUP
   ```

   Then press Enter.

   The Amanda Configuration Utility menu appears.

4. From this menu, you define the following for your telephone switching system and Amanda. Each is described in one of the next few chapters:
   - Telephone System Tone Patterns
   - System Configuration Options

The System Configuration Options are divided into two sections:

| | |
|---|---|
| General Configuration | Displays dialog boxes that guide you through the options that are most often changed, whether they appear in the INSTALL.CFG file or the Default Template for mailboxes (normally mailbox 997). These dialog boxes are explained in "Configuring a New Installation" on page 56. |
| Advanced Configuration | Allows you to change any configuration setting in INSTALL.CFG. The options are divided into categories to make it easier to locate the options you need to change. The options are parameter lists. Each option is explained in "Appendix C: Configuration Reference." |

# Configuring a New Installation

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

**To set a new Amanda system's general configuration options:**

1. Run Setup as explained in "Running Setup" on page 55.

   The Work.Place Configuration Utility screen appears.

2. To select System Configuration Options, press 2.

   The System Configuration menu appears.

3. To select General Configuration, press Enter.

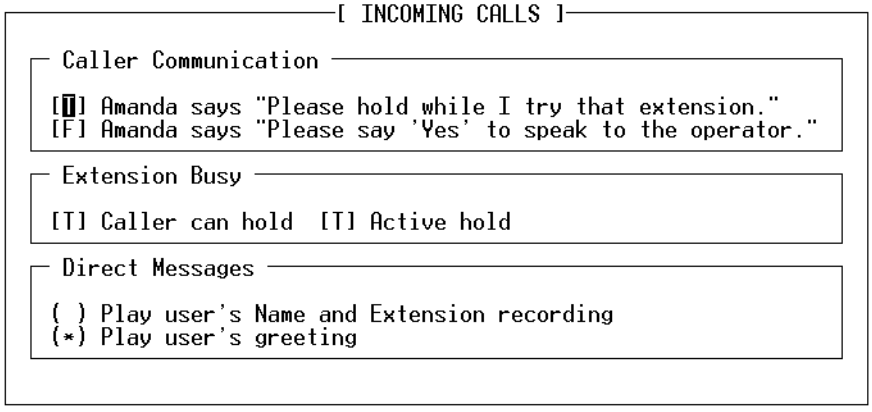
   The General Configuration menu provides easy access to the configuration options you are most likely to change.

4. Press I for Incoming Calls.

   The Incoming Calls screen appears.

   Options with bracketed settings [T] or [F] are like Windows check boxes. Using T for True is like checking a check box. Using F for False is like clearing a check box. Pressing the space bar toggles between T and F. Sometimes one check box is dependent on your selection for an earlier check box. For example, in the Incoming Calls screen, if you do not allow the caller to hold, the setting for active hold is ignored.

   Options with settings that are in parentheses (*) or ( ) are like Windows option buttons. You make a selection from the group of options by typing an asterisk in front of any one of the options. (Typing a space removes an asterisk from one option; if there are only two options, the asterisk automatically moves to the other option.)




5. For each check box, select T for True or F for False.

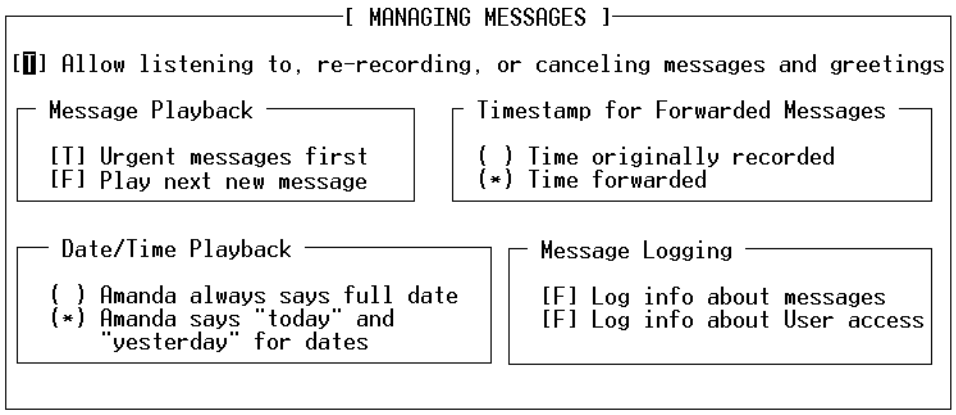
   Type an asterisk (*) to select an option button.

   (Press F1 for help with any setting you aren't sure about.)

6. Press F10 to save your settings and Esc to return to the General Configuration screen.

7. Press M for Messages.

   The Managing Messages screen appears.




8. For each check box, select T for True or F for False.

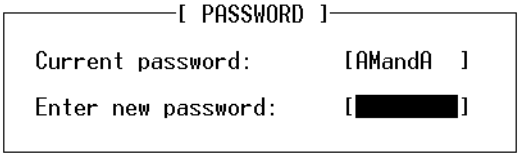
   Type an asterisk (*) to select an option button.

   (Press F1 for help with any setting you aren't sure about.)

9. Press F10 to save your settings and Esc to return to the General Configuration screen.

10. Press P for Password.

    The Password screen appears. Current Password is display-only.




11. Type the new password for Amanda in the Enter New Password text box.

12. Press F10 to save your settings and Esc to return to the General Configuration screen.

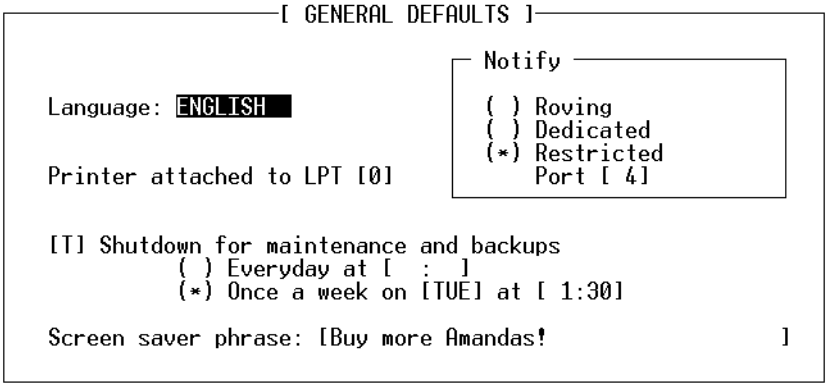
13. Press G for General Defaults.

    The General Defaults screen appears.

    Language is an example of a list. Pressing F2 displays a list of choices from which you select the language to be used.

    Sometimes options are dependent on your selection for other options. For example, in the General Defaults screen, only if you select the Restricted option button can you access the Port text box and type the number of the port to which notification is restricted. Likewise, only if you select the Shutdown For Maintenance And Backups check box is it important what days or time the shutdown occurs.

For more information about notification, see “Using Notification” on page 58.




14. For check boxes, select T for True or F for False.
    Type an asterisk (*) to select an option button.
    Select the day of the week from a list.
    Type numbers for the ports and times.
    Type a phrase for the screen saver.
    Press F1 for help with any setting you aren’t sure about.

15. Press F10 to save your settings and Esc to return to the General Configuration screen.

# Using Notification

Amanda can notify users when they have messages waiting. She can call their extensions, an outside number, page them, or turn on message waiting indicators. For Norstar KSUs, you must select restricted notification.

**With restricted notification**, only one port is used for notification. However that port can still take incoming calls. The advantage is that all your ports can be used for receiving calls. However, glare might occur. (If a caller hears DTMF and then a hangup instead of the company greeting, glare—a collision—has occurred.)

See *Administering Amanda@Work.Place* for more information on notification records.

If you are using JOVE to edit INSTALL.CFG, for restricted notification, set n_ochan to 0 and notify_restriction to a specific port number.

# 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 61.) 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. |
| 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. |
| 994 | hot_box | Mailbox for use with PCPM codes. For example, you can set up a hot_box to detect calls from modems. *The mailbox 994 is recommended but has not been created for you.* 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.<br>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.<br>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.<br>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.<br>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.<br>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.<br>You cannot separate these for companies or departments that share Amanda. |

## Default and Recommended Mailboxes (Continued)

| Mailbox | Configuration Option | Purpose |
|---|---|---|
| 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.** |

# Creating Mailboxes

The predefined notification records that turn the Message Waiting Indicators (MWIs) on and off are attached to the default mailbox Template, which is mailbox 997.

These notification records turn the Message Waiting Indicator (MWI) on and off whether the message was retrieved from:

- The user's station directly
- Another station set or an external telephone

The records use the following tokens. For more information about these tokens, see *Administering Amanda@Work.Place*.

| | |
|---|---|
| LIGHT ON | @K*(%U,1) |
| LIGHT OFF | @K*(%U,0) |

Therefore, The Amanda Company recommends that you create only personal mailboxes (those that call the extensions of users) from the default mailbox template (997). For other mailboxes (such as informational mailboxes or mailboxes that are part of token programs), copy a mailbox that has no notification records.

If you do use mailbox 997 for informational mailboxes and so on, then you must delete the notification records from the new mailboxes.

**NOTE:** For personal mailboxes, each user's mailbox number must be identical to his telephone extension number. The Amanda Company always recommends this practice, but it is mandatory with the Norstar KSU's digital integration.

## Selecting a Transfer Method

Both Amanda-controlled or Norstar-controlled transfer methods are available to you on a per-mailbox (per station) basis. Because of the advantages of digital integration and the amount of call information given to Amanda, supervised transfers are not necessary unless a user requires Amanda call screening.

**If you use Amanda-controlled call transfers:**

- Users can take advantage of Amanda call screening
- Norstar will provide silence, its hold conformation tone, or music on hold (MOH), depending on which option is programmed for the Norstar system
- The system uses port time less efficiently for call processing
- Less information is available to callers via Norstar call progress tones

To implement this method, the Extension field in each mailbox should **not** end with the H token (for blind transfers).

**If you use Norstar-controlled call transfers:**

- User **cannot** use Amanda call screening
- Norstar will provide the ring-back tone to indicate call status to callers
- The system uses port time more efficiently for call processing

To implement this method, the Extension field in each mailbox should end with the H token (for blind transfers).

For more information about the Extension fields in mailboxes, see Administering Amanda@Work.Place.

# 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 options 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 option). For example, you can leave a message for someone that you know is out of the office or not to be disturbed.

Normally, when multiple companies share an Amanda system, they divide the ports between them by dedicating each port to a specific company greeting using the box_grt configuration option. Amanda@Work.Place for Norstar has an even easier way of performing tenant services. This feature allows multiple companies to share an Amanda system by identifying the incoming CO lines with a name that matches an Amanda mailbox.

The tenant services feature is based on dynamic port allocation, which means that *any* Amanda port can receive the calls for *any* company sharing the Amanda system. This eliminates the need for dedicating ports to each company.

**To program the trunk call / CO line ID on the Norstar KSU:**

Amanda relies on the Norstar KSU to have a specific naming convention for its CO lines. This naming convention in not just for tenant services. Amanda differentiates CO lines, Amanda ports, and stations by their names.)

- Program the CO lines on the Norstar KSU.

  Name each line that needs to have a unique company greeting in the following manner so Amanda will recognize it. For example, if you have four CO lines, they might be named:

  LINE701 for CO line 1
  LINE702 for CO line 2
  LINE703 for CO line 3
  LINE704 for CO line 4

Please see "Using the Programming Tables" on page 16 for more details about Norstar KSU settings. Always name your lines LINEttt, and if you name your Amanda ports, always create a mailbox for each with that name in its Set Name field.

**To program Amanda@Work.Place:**

1. Create mailboxes with the same number you used for the CO Line ID, for example, mailbox 701, 702, 703, etc.

2. For each of these mailboxes:

   - Under Options, Do Not Disturb must be locked OFF
   - Under Messages, Store needs to be OFF

3. Create a token string in the Extension field that will play the greeting for the company that uses that CO Line.

For example, if Company A uses LINE701 and LINE702 and its company greeting is Greeting 1 for mailbox 990 (the default Company Greeting mailbox), then both mailbox 701 and mailbox 702 should have the following in their Extension fields:

```
@G(990)
```

This token string tells Amanda to play Greeting 1 from mailbox 990 when a call comes in on LINE701 or LINE702.

Similarly, if Company B uses LINE703 and LINE704 and its company greeting is Greeting 1 for mailbox 890, then both mailbox 703 and mailbox 704 should have the following in their Extension fields:

```
@G(890)
```

**TIP:** If later Company A decides it needs only one line and Company B is happy to pay for three lines, you can switch LINE702 to Company B by changing the Extension field in mailbox 702 to:
`@G(890)`

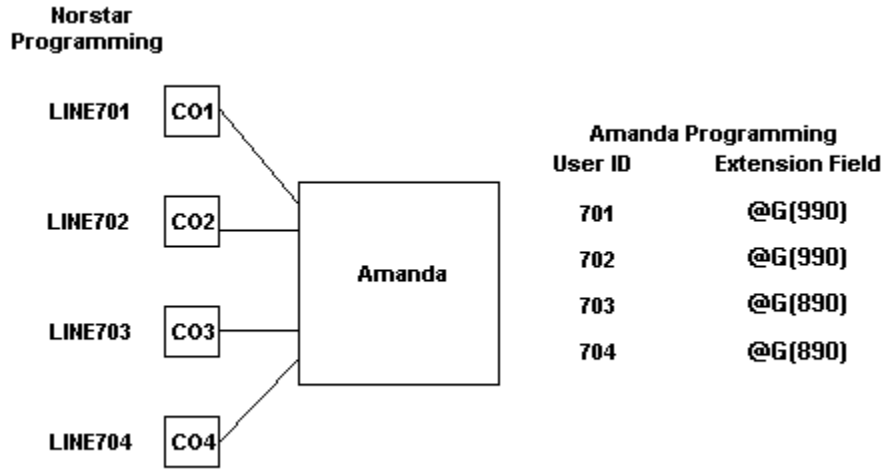
4. The Company Greeting mailboxes (990 and 890 in this example) have the following settings:

   - Under Options, Do Not Disturb must be locked ON
   - Under Messages, Store needs to be OFF
   - The Done Chain should contain the number of the Caller Instructions mailbox (whose greeting is "Press 1 for technical support; press 2 for ....")

     For example, if Company A uses the default Company Greeting mailbox (990) and the default Caller Instructions mailbox (991), mailbox 990 should look like the mailbox in Figure 2, below.

5. Record Greeting 1 for each company using your telephone or Amanda Messenger.

The diagram below shows the flow of the calls and the programming steps:




**To have different employee directories:**

- In the Per Port section of Advanced Configuration, 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_idx for ports 3 and 4 might be set to mailbox 311.

**To use different mailboxes for direct messaging:**

- In the Per Port section of Advanced Configuration, 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_snd for ports 3 and 4 might be set to mailbox 888.

For information about the 1001.PBX file to be used with tenant services, see “Selecting a PBX File” on page 43.

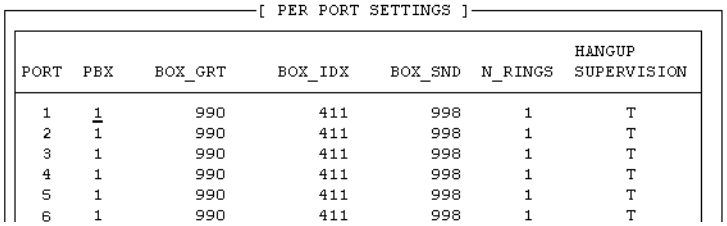
# Using the box_grt Configuration Option

If for some reason you cannot name your lines as explained above, you might prefer to dedicating each port to a specific company greeting using the box_grt configuration option.

**To use the box_grt:**

- In the Per Port section of Advanced Configuration, change the mailbox for the company greeting on a per port basis.

  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 ]

| PORT | PBX | BOX_GRT | BOX_IDX | BOX_SND | N_RINGS | HANGUP SUPERVISION |
|---|---|---|---|---|---|---|
| 1 | 1 | 990 | 411 | 998 | 1 | T |
| 2 | 1 | 990 | 411 | 998 | 1 | T |
| 3 | 1 | 990 | 411 | 998 | 1 | T |
| 4 | 1 | 990 | 411 | 998 | 1 | T |
| 5 | 1 | 990 | 411 | 998 | 1 | T |
| 6 | 1 | 990 | 411 | 998 | 1 | T |

# Chapter 7:
# Faxing

## Using This Chapter

This chapter:

- Explains how to set up a fax modem for use with Amanda.
- Explains how to detect a fax machine automatically.

## Using a Fax Modem

The fax modem used in Amanda@Work.Place must be external. It must be Class 2 or Class 2.0 compliant. (Be aware that Class 2 is different from Class 2.0.)

**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.

We recommend using COM3 and/or COM4 for fax modems since COM1 and COM2 may only be used by the null modem and data modem respectively. The selected COM port must be dedicated to the fax modem.

**To configure a fax modem for Amanda:**

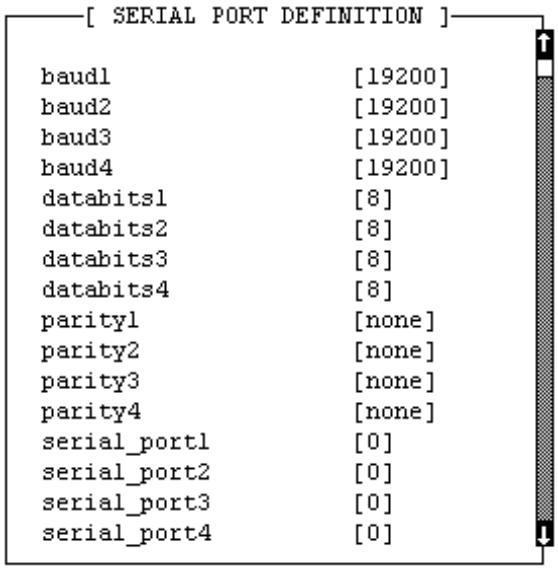
1. Run the Setup utility.

2. From the Work.Place Configuration Utility menu, select System Configuration Options or press 2.

3. From the System Configuration menu, press A for Advanced Configuration.

4. From the Advanced Configuration menu, press S for Serial.

   The Serial Port Definition dialog box appears.
   (If you type a space, the Setup utility interprets it as a zero.)




5. Change:

   `serial_port`***n*** `0`

   To:

   `serial_port`***n y***

   The option maps Amanda's logical port to a physical port on the PC.

   The ***n*** is the number of the logical serial port and the ***y*** is the physical serial port (for example, COM3). It is best to make ***n*** and ***y*** the same number. For example, map logical port 3 to COM3.

6. Modify the `baud`***n***, `databits`***n***, `stopbits`***n***, and `parity`***n*** to match the correct values for the serial integration link you are receiving.

   The ***n*** is the number you used for ***n*** in step 5.

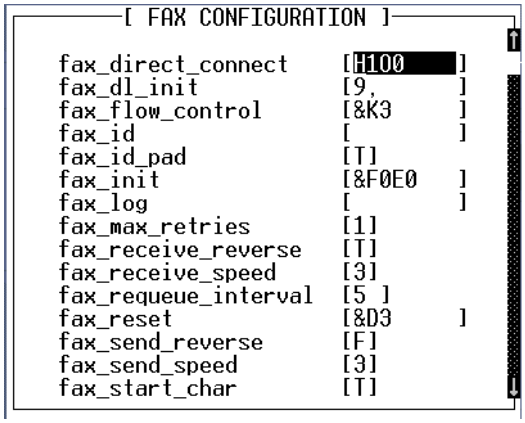
7. Press F10 to save your changes.

   The Save All Data? dialog box appears.

8. Press Y for Yes.

9. From the Advanced Configuration menu, press F for Fax.

The Fax Configuration screen appears.
(If you type a space, the Setup utility interprets it as a zero.)




10. (Skip this step if you dial 9 to access an outside line.) In the Fax section on Advanced Configuration, change:

    `fax_dl_init 9,`

    To:

    `fax_dl_init` ***n***

    replace ***n*** with the outside access code for the telephone switching system. (Adding a comma causes a 2-second pause.)

11. (Skip this step if you have a Zoom modem.) Change:

    `fax_flow_control &K3`

    For Aceex modems, use:

    `fax_flow_control \Q3 X3 &K3`

    For Practical Peripherals modems, use:

    `fax_flow_control X3 &K3`

    This option has the Class 2 command for the type of flow control used by your fax modem.

12. Change:

    `fax_id`

    To:

    `fax_id` *`fax`*

    where *`fax`* is a number or a name used to identify your fax modem (for example, 'FAXA')

13. 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, change:

    ```
    fax_id_pad T
    ```

    To:

    ```
    fax_id_pad F
    ```

14. Change:

    ```
    faxn
    ```

    To:

    ```
    faxn ext
    ```

    where ***n*** is the number for the logical serial port and *ext* is the extension number where the fax modem is connected on the telephone switching system (this must be a single line extension).

15. This defines the maximum number of digits for a local extension. This is used when the “72” Fax retrieve command is selected so that *fax_dl_init* (usually ‘9,’) will be applied only for outside calls.

    Change:

    ```
    max_local_extension 6
    ```

    To:

    ```
    max_local_extension n
    ```

    where ***n*** is the maximum number of digits in a telephone extension on your telephone switching system.

**NOTE:** You don’t need to change the default values for the other serial port and fax configuration options.
To use the fax modem effectively, you must also use tokens to program the Extension fields for one or more mailbox. See the sections on one and two-call faxbacks in *Administering Amanda@Work.Place* for more information.

# 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 manufactures produce a variety of models and change their firmware from time to time. However, you may want to try them.

**Zoom Modems**
fax_flow_control &K3
fax_dl_init -

**Aceex Modems**
fax_flow_control \Q3 &K3

**Practical Peripherals Modems**
fax_flow_control X3 &K3

**SmartOne 1442 Faxmodems**

| | |
|---|---|
| fax_flow_control | &K4 |
| fax_direct_connect | H1O0 |
| fax_receive_reverse | T |
| fax_reset | &D3 |
| fax_send_reverse | F |

**Boca modem M144EW**

| | |
|---|---|
| fax_flow_control | &K3 |

# 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.GTD.

  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 13-36.
- A mailbox (usually 994) must be set up to process faxes. To learn how to create and program that mailbox, see *Administering Amanda@Work.Place*.
- That mailbox must be specified in the hot_box configuration option.

## Modifying the PCPM Tone Table

The file 1001.GTD is predefined to use PCPM Tone 13 for fax purposes. SmartCall, one of the utilities available from the Diag utility creates and/or changes settings in .GTD files. You should not need to modify the tone table for the voice board. However, the following procedure is provided—just in case.

**To modify the tone table for the voice board:**

1. Run DIAG.

   For more information about Diag, see “Chapter 4: Defining Tone Patterns.”

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

   | | |
   |---|---|
   | NAME: | FAX CNG TONE |
   | TYPE: | OTHER |
   | TERMINATING: | YES |
   | CADENCE: | NO |
   | FREQ1: | 1100 |
   | FREQ2: | NONE |
   | PCPMCODE: | 13 (13 through 36 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 screen to create the mailbox that will process the PCPM tone. See *Administering Amanda@Work.Place* for information about creating mailboxes.

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

# 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 2.

   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

Faxes that you send to customers from Amanda must be stored on Amanda in fax format. You create the documents, then fax them to Amanda using the J() token to receive them. For more details, see “Sending Faxes to Amanda” on page 133.

# Chapter 8:
# Accessing Amanda Remotely

## Accessing Amanda from Another Computer

You control and configure Amanda@Work.Place remotely from another computer (for example, a notebook) using the Host and Remote programs. Host runs on Amanda and Remote runs on the computer that accesses Amanda remotely. You also need either a null modem cable to connect the computers or a data modem on each computer.

These programs allow the remote computer's monitor and keyboard to take over Amanda. For example, you can run Setup and other programs on Amanda's computer using the remote computer's keyboard and monitor.

There are two versions of the Host program: HOST.COM 2.0 and HOST.COM 3.0. The Host programs are both DOS programs. Your new Amanda@Work.Place system comes with HOST.COM 3.0.

There are also two versions of the Remote program: REMOTE.COM, a DOS program which can be sent to you on a floppy disk, and WINREM.EXE, a 32-bit application sold separately by The Amanda Company.

REMOTE.COM is a DOS program. It can be run from Windows when Windows is in DOS mode. (REMOTE.COM does not run in a DOS box.)

WINREM.EXE runs in either Windows 95 or Windows NT. It has many more features than REMOTE.COM. For example, it allows you to copy files from the host computer to the remote computer and vice versa. It also lets you store the modem telephone numbers that you use with it.

WinRem is **not** shipped with Amanda@Work.Place. It works with Amanda@Work.Group, Amanda@Work.Place, and, minus the file transfer capability,

with Amanda@SOHO. Contact your sales representative for more information.

| Host Program | Remote Program | Compatibility Issues |
|---|---|---|
| HOST.COM (Host 2.0—found on older systems) | REMOTE.COM (also called Remote 2.0) | Designed to be used together. You cannot transfer files with this combination. |
| | WINREM.EXE (also called WinRem 1.0) | Compatible, **but** HOST.COM does not support the file transfer feature of WINREM.EXE |
| HOST.COM (Host 3.0—found on Amanda@Work.Place systems starting with version 2.15) The file name is the same for both Host 2.0 and 3.0. | REMOTE.COM (also called Remote 2.0) | Compatible, **but** REMOTE.COM does not offer a file transfer feature |
| | WINREM.EXE (also called WinRem 1.0) | Designed to be used together. You can transfer files with this combination. |

**NOTE:** DOS programs that use graphics and pop-up decision windows may not be controllable or appear correctly on the screen while you are using either Remote program. Examples are Edit, MSD, Scandisk, and Defrag (when run in interactive, rather than batch, mode).
Never use Edit remotely. When you press Alt+X to close the file, you become disconnected. Use JOVE instead.

# Using the Host Program

The Host program runs automatically whenever Amanda's computer starts. The AUTOEXEC.BAT file contains the following line:

```
LH HOST /1 /f /n >>%LOGN%
```

This can be explained as follows:

| | |
|---|---|
| LH HOST | Tells the computer to load this program in high memory. |
| /*x* where *x* is the number of the COM port | Indicates the number of the serial (COM) port used by either the null modem cable or modem. For example, /1 represents COM1, the port to which you attach the null modem cable. COM2, the port to which you attach a modem, is /2. |
| /f | Indicates that the modem is faster than 2400 bps. |
| /n | Indicates that a null modem cable will be connected to both computers. |
| >>%LOGN% | Sends information about loading the Host program to either the C:\BOOTLOG file or to the screen, depending whether your AUTOEXEC.BAT file contains the line SET LOGN=C:\BOOTLOG or the line SET LOGN=CON: |

**The line for the modem is:**

```
LH HOST /2 >>%LOGN%
```

Use the list above (for the null modem) to understand each part of this line.

# Using the Remote Program

The remote computer must have a copy of one of the Remote programs. It can be sent to you on a floppy disk. You can copy it from the disk to the remote computer.

## Connecting by Null Modem Cable

**To connect over a null modem cable:**

1. Attach one end of the null modem cable to Amanda's COM1 and to a serial port on the remote computer.

2. Turn on both computers. Amanda's computer should start running HOST.COM automatically.

3. From the remote computer, use the following command to start the Remote program.

   `remote /x /n /f`

   where ***x*** is 1 or 2, depending on what COM port the cable is connected to on the remote computer.

   You execute the command from the directory in which the Remote program is stored or you add the path name to the command. For example, if the program is stored on your hard drive in the UTIL directory on your C: drive, C:\UTIL\REMOTE would replace REMOTE in the command.

   If the computer runs a version of Windows, run the command while the computer is in DOS mode.

4. Press Enter.

   The following appears on the screen:

   `Remote Version 2.0`

   You can run Setup and other programs on Amanda's computer while sitting at the remote computer. (If the screen is blank because of Amanda's screen saver, press the spacebar to exit the screen saver.)

5. To end the Remote session, press Alt+X.

   The program asks you to confirm your decision to exit by typing Y.

   The remote computer disconnects from Amanda.

# Connecting by Modem

To connect via data modem, both Amanda's computer and the computer that will be accessing Amanda remotely must be running and have a modem that is connected to both a serial port and a telephone line. The data modem must be connected to either a dedicated telephone number (this works best) or its own telephone system station. Amanda's modem must be connected to COM2.

REMOTE.COM works only with COM1 or COM2, with industry standard IRQ and I/O port addressing. Usually that is one of the following:

- COM1 with IRQ4 and not other devices on COM1 or using IRQ4
- COM2 with IRQ3 and not other devices on COM2 or using IRQ3

**To control Amanda via modem:**

1. Use the following command to start the Remote program:

   `remote /x`

   where ***x*** is 1 or 2, depending on what COM port the modem is connected to on the remote computer.

   You execute the command from the directory in which the Remote program is stored or you add the path name to the command. For example, if the program is stored on your hard drive in the UTIL directory on your C: drive, C:\UTIL\REMOTE would replace REMOTE in the command.

   If the computer runs a version of Windows, run the command while the computer is in DOS mode.

2. Press Enter.

   The following appears on the screen:

   ```
   Remote Version 2.0
   Enter phone number:
   ```

3. Type the telephone number for Amanda, then press Enter.

   For example, if both modems are on the station side of the telephone switching system, you might use 9,17147530414,,,,,102 where the commas are two-second pauses and the 102 is for mailbox 102. In this example, the Extension field for mailbox 102 would have to be 102H to achieve a blind transfer to extension 102.

   `Enter password:` appears on the screen.

4. Type `JENNIFER` in uppercase letters, then press Enter.

   You can run Setup and other programs on Amanda's computer while sitting at the remote computer. (If the screen is blank because of Amanda's screen saver, press the spacebar to exit the screen saver.)

5. When you have finished, type Alt+X to end the connection.

   The program asks you to confirm your decision to exit by typing Y.

   The remote computer disconnects from Amanda.

# Chapter 9:
# 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 the Users screen) and/or in Method fields (defined per mailbox using the Notify Screen). 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, she 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, she 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 Installing Amanda@Work.Place*, 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 85 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, she 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, she 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, she processes the Done Chain field for the mailbox associated with the current port because she 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 she 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:**

1. Press Ctrl+Home.

2. Press Alt+T.

Pressing any key stops the display. On-screen traces are stored by default in C:\AMANDA\SCREEN.OUT. To change the name of this file, use the Setup utility to change the setting for the configuration option screen_save.

# 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)'.

# 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 (+).

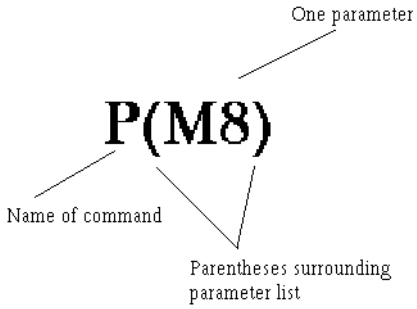
For example, =(%S1,24) puts the number 24 in the variable named %S1.
+(%S1,15) adds 15 to the 24 in %S1 and then stores the sum 39 in %S1.
+(%S1,-10) subtracts 10 from the 39 in %S1 and then stores the difference 29 in %S1.

# Commands

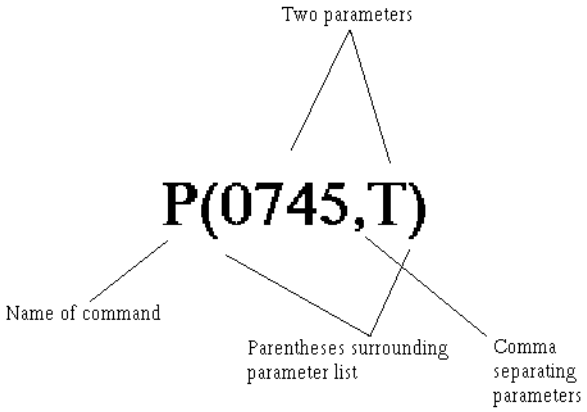
Commands are more complex than literals and variables. Commands perform actions. For example, a command may tell Amanda to play a particular message or go to another mailbox.

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 she 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. |
| *italics* | Italics are used for characters that you must replace with real strings, numbers, variables, or other commands. |

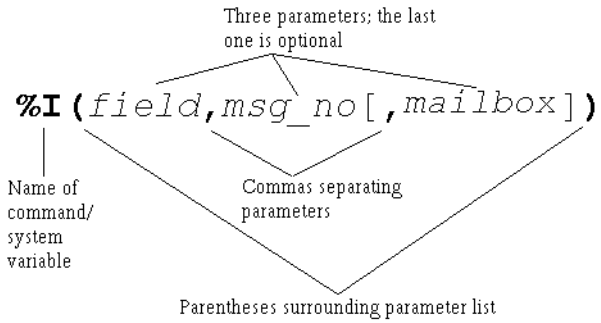
| | |
|---|---|
| [ ] | The syntax inside the brackets is optional. If you don't use this syntax, its default is used. |
| { } | The syntax inside braces can be repeated. |

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

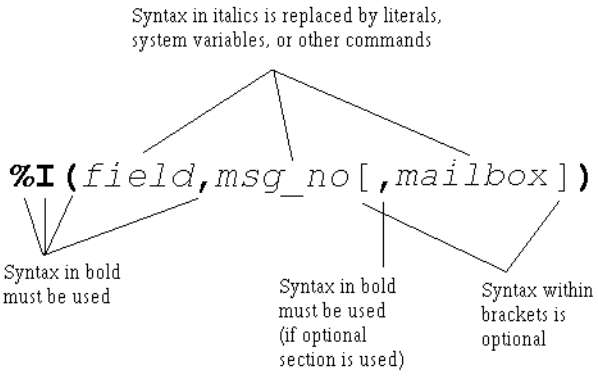
Syntax:

**%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

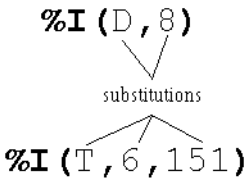
T for the Time field

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 she 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, she deletes any spaces at the end of the data as she 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 where she is.

  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.

# 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<br>783 | Forest<br>367 | Mailbox 105 |
   | JoAnn<br>562 | Johnson<br>564 | Mailbox 106 |
   | Bob<br>262 | Knapp<br>562 | Mailbox 107 |
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**[*repetition*]**(***number*,**N)** |
| Add | **+(***variable*[,*value*]**)** |
| ANI (Automatic Number Identification) | **%H** |
| Append, file | **\|(***file***)** |
| Assignment | **=(***variable*,*value*[,*start*,*end*]**)** |
| Boards, serial numbers | **%B1 %B2 %B3**<br>**%B4 %B5 %B6** |
| Caller hang-up | **H(***mailbox***)** |
| Caller ID | **%H** |
| Comment | **%F(***field*[,*mailbox*]**)** |
| Condition | **I(***value*,*operator*,*value*,*mailbox***)** |
| Conference call | *ext_no***KM** |
| Creating message notification file | **X**[**(***file***)**] |
| Currency | **P**[*repetition*]**(***amount*,*currency***)** |
| Current connect time | **%T** |

## Quick Token Reference (Continued)

| Function/Purpose of Token | Syntax |
|---|---|
| Current date in American format | **%Y** |
| Current port number | **%C** |
| Current time | **%Z** |
| Current mailbox | **P**[*repetition*] **(U**[**,***mailbox*]**)** |
| | **%U** |
| Current mailbox's Extension field | **%E** |
| Date | **%I(***field***,***msg_no*[**,***mailbox*]**)** |
| | **P**[*repetition*]**(***date***,D)** |
| | **%Y** |
| Days of week | **%W** |
| Deleting file | **Y**[**(***file***)**] |
| Deleting, message | **KD(***msg_no*[**,***mailbox*]**)** |
| Dial (pulse dial) | **~** |
| Dial codes | **F** |
| dial tone | **%X** |
| dial tone, wait for | **W(***n***,T**[**,***mailbox*]**)** |
| Directory Name field | **%F(***field*[**,***mailbox*]**)** |
| Disk space | **%D** |
| | **P**[*repetition*]**(D)** |
| Dollars | **P**[*repetition*]**(***amount***,***currency***)** |
| DTMF digits | **P**[*repetition*]**(***DTMF***)** |
| | **P**[*repetition*]**(R)** |
| | **0 1 2 3**<br>**4 5 6 7**<br>**8 9 A B**<br>**C D * #** |
| DTMF for relay paging | **P**[*repetition*] **(R)** |
| | **%R** |
| DTMF, save caller's entry | **R(***greeting*[*#mailbox*]**,***variable*[**,***timeout*]**)** |
| Exit for caller hang up | **H(***mailbox***)** |
| Exit for mailbox | [*ext_no*]**H** |

## Quick Token Reference (Continued)

| Function/Purpose of Token | Syntax |
|---|---|
| Extension field | *ext_no* |
| | @ |
| | **%E** |
| *Extensions, partially supervised transfer | **U-***ext_no* |
| Fax, incremental | **<(***phone_no***)** |
| | **>(***file***)** |
| Fax, initialization | **%A** |
| Fax, receive | **J(***file_or_box***,***phone_no***[,***tokens***])** |
| Fax, send | **T(***file***,***phone_no***[,***tokens***])** |
| Feature codes for Norstar | **KF(***feature***)** |
| 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***})** |
| | **[(***file***)** |
| | **N(***file***,***field***,***value***{,***field***,***variable***})** |
| Files, search | **?(***line***,***file***,***mailbox***)** |
| Files, voice | **P[***repetition***](X,***file***)** |

## Quick Token Reference (Continued)

| Function/Purpose of Token | Syntax |
|---|---|
| Files, write | **](***file***)** |
| | **N(***file***,***field***,***value***{,***field***,***variable***})** |
| Francs | **P**[*repetition*]**(***amount***,***currency***)** |
| Free disk space | **P**[*repetition*] **(D)** |
| | **%D** |
| Frequency | **KB(***frequency***,***msecs***)** |
| From | **%I(***field***,***msg_no*[**,***mailbox*]**)** |
| Goto | **G(***mailbox***)** |
| Greeting | **P**[*repetition*]**(***greeting*[**,***mailbox*]**)** |
| Hang-up | [*ext_no*]**H** |
| | **O(***time***)** |
| Hang-up, cleanup | **H(***mailbox***)** |
| Hang-up, partially supervised | **U-***ext_no* |
| Hookflash | **F** |
| | **O(***time***)** |
| If | **I(***value***,***operator***,***value***,***mailbox***)** |
| Import, file | **{***file***}** |
| Information mailboxes | **M(***greeting*[*#mailbox*]**,***repetition***,***delay***)** |
| IVR | **%I(***field***,***msg_no* [**,***mailbox*]**)** |
| Languages, change | **L(***file***)** |
| Length | **LEN[***string***]** |
| Letters and spaces | **P**[*repetition*]**(A,***string***)** |
| LIGHT.ON | **X**[**(***file***)**] |
| | **Y**[**(***file***)**] |
| | **Z**[**(***file***)**] |
| Menu | **M(***greeting*[*#mailbox*]**,***repetition***,***delay***)** |
| Message lights, notification records (Amanda Company voice boards for Norstar only) | **K*(***ext***,***on_off***)** |
| Messages | **%I(***field***,***msg_no*[**,***mailbox*]**)** |
| Messages, by number | **P**[*repetition*]**(M***n*[**,***mailbox*]**)** |

## Quick Token Reference (Continued)

| Function/Purpose of Token | Syntax |
|---|---|
| Messages, delete | **KD(***msg_no*[**,***mailbox*]**)** |
| Messages, from recordings | **KR(***file_or_box*[**,***recording_info*]**)** |
| Messages, number | **%M**[**(***mailbox***)**] |
| Messages, number of new | **%N** |
| Messages, record and send to mailing list | **KJ(***mailbox***,***list_number*[**,***sender*]**)** |
| Messages, total | **P**[*repetition*]**(M**[**,***mailbox*]**)** |
| Message count, total for mailbox | **%M**[**(***mailbox***)**] |
| | **P**[*repetition*] **(M**[**,***mailbox*]**)** |
| Message count, new for current user | **%N** |
| Message light, creating | **X**[**(***file***)**] |
| Message light, deleting | **Y**[**(***file***)**] |
| Message light, testing for | **Z**[**(***file***)**] |
| Money | **P**[*repetition*]**(***amount***,***currency***)** |
| Name and extension | **P**[*repetition*]**(U**[**,***mailbox*]**)** |
| | **P**[*repetition*]**(N**[**,***mailbox*]**)** |
| Norstar feature codes | **KF(***feature***)** |
| Notification record, Method field | @ |
| Notification record, Variable field | **P**[*repetition*] **(V)** |
| | **%V** |
| Notify, message lights (Amanda Company voice boards for Norstar only) | **K*(***ext***,***on_off***)** |
| Notify, relay paging | **P**[*repetition*] **(R)** |
| | **%R** |
| Number | **P**[*repetition*] **(***number***,N)** |
| | **P**[*repetition*] **(V)** |
| On-hook | **O(***time***)** |
| Pager | **P**[*repetition*] **(R)** |
| | **%R** |
| | **%V** |
| Pager, wait for | **W(***n***,P**[**,***mailbox*]**)** |

## Quick Token Reference (Continued)

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

# Quick Token Reference (Continued)

| Function/Purpose of Token | Syntax |
|---|---|
| Previous mailbox | **%P** |
| Prompt | **P**[*repetition*] **(***prompt_no*,**V)** |
| | **L(***file***)** |
| Pulse dial | **~** |
| Questions and answers | **Q(**{*greeting*[*#mailbox*][,**E**]}**)** |
| Read, file | **{***file***}** |
| | **N(***file*,*field*,*value*{,*field*,*variable*}**)** |
| | **V(***file*,*field*,*value*{,*field*,*variable*}**)** |
| Recordings, stored as messages or files | **KR(***file_or_box*[,*recording_info*]**)** |
| Records, delete | **KV(***file*,*field*,*value***)** |
| Remote computers | **S(***port*,[*string*,[*variable*],[*termination*], [*length*],[*timeout*]**)** |
| Rings, wait for number of | **W(***n*,*event* [,*mailbox*]**)** |
| Search, file | **?(***line*,*file*,*mailbox***)** |
| | **N(***file*,*field*,*value*{,*field*,*variable*}**)** |
| | **V(***file*,*field*,*value*{,*field*,*variable*}**)** |
| | **KV(***file*,*field*,*value***)** |
| Search, string | **KI(***target*,*source*,*variable***)** |
| Security code | **KC(***mailbox*,*variable***)** |
| | **KL(***mailbox*,*security_code***)** |
| | **KP(***mailbox*,*security_code***)** |
| Serial port access | **S(***port*,[*string*,[*variable*],[*termination*], [*length*],[*timeout*]**)** |
| Set Name | **%F(***field*[,*mailbox*]**)** |
| Shutdown | **KS**[**(***errorlevel***)**] |
| Sound volume, change | **^(***volume_change***)** |
| Space | **%D** |
| | **P**[*repetition*]**(D)** |
| Spell | **P**[*repetition*]**(A,***string***)** |
| String, search | **KI(***target*,*source*,*variable***)** |
| Strings, length | **LEN[***string***]** |

## Quick Token Reference (Continued)

| Function/Purpose of Token | Syntax |
|---|---|
| Subtract | **+(***variable*[**,***value*]**)** |
| Testing for message notification file | **Z**[**(***file***)**] |
| Time | **%I(***field***,***msg_no*[**,***mailbox*]**)** |
| | **P**[*repetition*]**(***time***,T)** |
| Time, connect time | **%T** |
| Time, current | **%Z** |
| Timed break recall | **~** |
| Tokens, processing | @ |
| Tones | **0 1 2 3**<br>**4 5 6 7**<br>**8 9 A B**<br>**C D * #** |
| Total messages | **P**[*repetition*] **(M**[**,***mailbox*]**)** |
| Transfer code for current port | **%X** |
| Transfer, unsupervised (blind) | [*ext_no*]**H** |
| Transfer, supervised | *ext_no* |
| | *ext_no***KM** |
| 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*]**)** |
| Mailbox, previous | **%P** |
| Mailbox, total message count | **%M**[**(***mailbox***)**] |
| Mailbox, value of field | **%F(***field* [**,***mailbox*]**)** |
| Variable field | **P**[*repetition*]**(V)** |
| | **%V** |

## Quick Token Reference (Continued)

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

# Alphabetical Token Reference

| Token Syntax | Description |
|---|---|
| `-` | Literal that pauses processing for .5 (one-half) second. |
| `,` | Literal that pauses for 2 seconds. Used when dialing an extension or to introduce a pause before processing the next token.<br>**NOTE:** Be careful not to confuse this comma with the separator found in commands and records. |
| `?(`*`line`*`,`*`file`*`,`<br>*`mailbox`*`)` | 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.<br>*line* The string or variable to be matched as a line in the file. No line in the file should exceed 143 characters.<br>*file* 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.<br>*mailbox* A valid mailbox or a variable containing a mailbox.<br>**Example:**<br>`?(%S9,C:\\AMANDA\\FOOBAR.TXT,247)`<br>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.<br>**Failure:** Invalid mailbox |
| `@` | Literal that causes Amanda to process the Extension or Notify Method field as a set of tokens instead of processing the field normally.<br>**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 Installing Amanda@Work.Place*, 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.<br>**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. |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **[(***file***)** | 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.<br>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.<br>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.<br>If the file does not exist, Amanda just goes on to the next token.<br>*file* 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.<br>**Example:**<br>`[(C:\\AMANDA\\FOOBAR.TXT)`<br>places the following line in FOOBAR.TXT<br>`,,,10,,,,5,9,555`<br>In this case %S0, %S1, %S2, %S4, %S5, and %S6 were empty strings.<br>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.<br>`[(C:\\AMANDA\\FOOBAR.TXT)+(%S4)]`<br>`(C:\\AMANDA\\FOOBAR.TXT)`<br>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.<br>**Failure:** Does not fail |
| \\ | Backslash, the actual "\" character. Can be used in strings.<br>**Failure:** Does not fail |
| **\A** | Attention, which is a bell sound (Ctrl+G). Can be used in strings.<br>**Failure:** Does not fail |
| **\B** | Ctrl+B. Can be used in strings.<br>**Failure:** Does not fail |
| **\N** | Newline (Ctrl+J). Can be used in strings.<br>**Failure:** Does not fail |
| **\R** | Return (Ctrl+M). Can be used in strings.<br>**Failure:** Does not fail |
| **\T** | TAB (Ctrl+I). Can be used in strings.<br>**Failure:** Does not fail |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **](***file***)** | 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.<br>*file* A string or variable containing a valid DOS file name for the text file to be written to. Use the complete path to the file unless the file is in C:\AMANDA.<br>**Example:**<br>See the [() command.<br>**Failure:** The file is read-only<br>Insufficient disk space to save file |
| **^(***volume_change***)** | Command that changes the volume of the current port.<br>*volume_change* 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.<br>The volume ranges from 1 (the softest) to 9 (the loudest). Initially, the volume is set to 5, but that is not necessarily its current value. If the volume is 5, and you apply a change of 4, the volume goes to 9. If you apply a change of 6, the volume goes to 9 and Amanda ignores the fact that you asked for more volume than was available.<br>**Example:**<br>`^(8)`<br>raises the volume of the port to its loudest.<br>**Failure:** Does not fail |
| **{***file***}** | 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.<br>*file* 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.<br>**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.)<br>**Example:**<br>`{C:\\AMANDA\\RELAY.TXT}`<br>causes Amanda to process the tokens in RELAY.TXT.<br>**Failure:** Does not fail<br>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. |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **|(***file***)** | 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.<br>*file* 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.<br>**Example:**<br>`|(C:\\AMANDA\\PORTVARS.TXT)`<br>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.<br>**Failure:** The file is read-only<br>Insufficient disk space to save file |
| **~** | Literal that pulse dials the digit 1 to effect a timed break recall. |
| **+(***variable*<br>**[,***value***])** | 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.<br>*variable* One of port or global variables.<br>*value* Optional. A number or variable. The default is 1.<br>**Example:**<br>`+(%S7,-1)`<br>subtracts 1 from the value stored in %S7.<br>`+(%G6)`<br>adds 1 to the value stored in %G6.<br>**Failure:** Does not fail |
| **<(***phone_no***)** | 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.<br>*phone_no* String, number, or variable containing the DTMF digits to be dialed.<br>This command is used only in Extension fields.<br>**Example:**<br>`<(9,7144525570)>(C:\\AMANDA\\PRICES.TXT)>`<br>`(C:\\AMANDA\\OPTIONS.TXT)>(C:\\AMANDA\\OPTIONS.TXT)`<br>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.<br>**Failure:** Does not fail |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **=(***variable,value* **[,***start,end***])** | Command that gives the specified variable the specified value. Use *start* and *end* to assign only part of the string (a substring) to the variable.<br>*variable* One of the port or global variables.<br>*value* A string, number, or variable.<br>*start* Optional. The starting character position to copy from *value*. The default is to copy the entire string.<br>*end* Optional, but must be used if *start* is used. The last character position to copy from *value*.<br>**Examples:**<br>`=(%S1,"FRENCH")`<br>Gives %S1 the value of "FRENCH"<br>`=(%S1,"FRENCH",3,4)`<br>Gives %S1 the value of "EN".<br>If %S2 is the telephone number 7530414,<br>`=(%S1,%S2,1,3)`<br>extracts the prefix 753 from %S2 and assigns it to %S1<br>If %S3 is 1 and S4 is 1,<br>`=(%S1,"MARY",%S3,%S4)`<br>%S1 is assigned "M". |
| **>(***file***)** | 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.<br>*file* 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.<br>This command is used only in Extension fields.<br>**Example:**<br>See the <() command.<br>**Failure:** Does not fail |
| **0 1**<br>**2 3**<br>**4 5**<br>**6 7**<br>**8 9**<br>**A B**<br>**C D**<br>*** #** | Literal that plays the DTMF tone corresponding to the specified digit: 0–9, A–D, *, or # |
| **%A** | System variable containing the value of the fax_dl_init configuration setting.<br>**Example:**<br>If %A is "9,", a 9 followed by a pause is needed to access an outside telephone line. |
| **%B1 %B2**<br>**%B3 %B4**<br>**%B5 %B6** | System variable that contains the serial number of the corresponding voice board. %B1 is voice board 1, %B2 is voice board 2, etc. |
| **%C** | 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. |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **%D** | System variable that contains the percentage of free disk space. **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." |
| **%E** | 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. **Example:** P(A,%E) causes Amanda to say the characters in the Extension field. See the P() command for more information. |
| *ext_no* | 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 as shown in *Administering Amanda@Work.Place*. **Example:** 378 causes Amanda to call extension 378 and supervise the call. **Failure:** Invalid extension number |
| **%F(***field* [,*mailbox*]**)** | System variable that contains the value of the specified field for the specified mailbox. Each port has its own %F. *field* One of the following numbers or a variable containing that number: **1** for the Directory Name 1 field **2** for the Directory Name 2 field **3** for the Comment field *mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox. **Example:** %F(3,126) assigns the string from the Comment or Set Name field for mailbox 126 to %F. **Failure:** Invalid mailbox |
| **F** | 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. **Failure:** Does not fail |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **%G0 %G1**<br>**%G2 %G3**<br>**%G4 %G5**<br>**%G6 %G7**<br>**%G8 %G9** | 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.<br>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.<br>When the system is shut down, the values of %G0–%G9 are lost. They cannot be stored using the [(), ](), or \|() commands.<br>See also %S0–%S9.<br>**Example:**<br>`+(%G0)`<br>adds one to the current value of %G0.<br>`=(%G2,555)`<br>assigns the mailbox 555 to %G2.<br>`G(%G2)`<br>causes Amanda to go to the Extension field for mailbox 555.<br>**Failure:** Invalid variable name (such as %G52) |
| **G(***mailbox***)** | Command that controls processing. Amanda continues standard processing at the specified mailbox's Extension field (as shown in *Administering Amanda@Work.Place*).<br>*mailbox* A valid mailbox or a variable containing a mailbox.<br>**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 @.<br>**Example:**<br>`G(176)`<br>causes Amanda to go to the Extension field for mailbox 176.<br>**Failure:** Invalid mailbox |
| **%H** | 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.<br>**Example:**<br>If 1001.PBX contains:<br>`integration 10 'Cxxxxxxxccccccc'`<br>and the packet 'C00000007530414' arrives, %H contains the number 7530414 as long as the port that received the call is active. |
| [*ext_no*]**H** | 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.<br>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.<br>*ext_no* Series of DTMF digits that indicate an extension number.<br>**Example:**<br>151H<br>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.<br>**Failure:** Invalid extension number |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **H(***mailbox***)** | 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.)<br>*mailbox* A valid mailbox or a variable containing a mailbox.<br>This command is used only in Extension fields.<br>**Example:**<br>`H(614)`<br>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)`.<br>**Failure:** Invalid mailbox |
| **%I(***field,msg_no* **[,***mailbox***])** | 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.<br>*field* One of the following:<br>**D** for the Date field<br>**T** for the Time field<br>**F** for the From field<br>*msg_no* The number of an existing message. You cannot use a variable containing that number.<br>*mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**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.<br>**Examples:**<br>`P(%I(D,5),D)`<br>plays the date of message 5 in the current mailbox.<br>`P(%I(T,5),T)`<br>plays the time of message 5 in the current mailbox.<br>`P(%I(D,5,212),D)`<br>plays the date of message 5 of mailbox 212.<br>`P(%I(F,5,212),U)`<br>plays the Name/Extension recording of the mailbox who sent message 5 of mailbox 212.<br>See the P() command for more information.<br>**Failure:** Invalid mailbox<br>Invalid message number |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **I(***value,operator, value,mailbox***)** | 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.<br><br>*value* Any string, number, or variable.<br><br>*operator* One of the following symbols:<br>> greater than<br>< less than<br>= equal<br>! not equal<br><br>*mailbox* Any valid mailbox or a variable containing a mailbox.<br>**Examples:**<br>I("111",<,"222",1000)<br>continue processing at mailbox 1000.<br>I("111",>,"222",1000)<br>continue processing at the next token.<br>I(%S1,=,"1234",2000)<br>continue at mailbox 2000 only if %S1 contains the value 1234.<br>I(%S1,=,"SPANISH",2000)<br>continue at mailbox 2000 only if %S1contains the value "SPANISH".<br><br>**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 @.<br>**Failure:** Invalid mailbox<br>If there is a problem with a condition, it is considered false rather than a failure |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **J(***file_or_box*, *phone_no* [,*tokens*]**)** | 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.<br>Before using this command, make sure the configuration settings for the physical serial port have been defined.<br>*file_or_box* 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.<br>*phone_no* The telephone number for the fax device that sends the transmission or a variable containing that number. 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.)<br>*tokens* Optional. A string or variable that defines the actions Amanda takes to connect the call to the fax port.<br>This command is used only in Extension fields.<br>**Example:**<br>J(123,"","P(G1)%X%F-H")<br>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:<br>%X The system variable that contains the codes needed to get the transfer dial tone on the current port<br>%F The extension of the fax port being used<br>-H A hang-up (after pausing a half second to complete an unsupervised transfer)<br>J("C:\\FAXES\\FAX1","")<br>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.<br>**Failure:** Invalid mailbox<br>Fax modem not configured properly<br>Physical port not available<br>Logical port not configured properly |
| **K<(***x*[,*value*]**)** | Command that shifts the values of the %S variables to the left or right.<br>*x* 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.<br>*value* 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.<br>**Examples:**<br>K<(1)<br>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.<br>K<(-3,"JOHN DOE")<br>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.<br>K<(20,"")<br>is a quick way to clear all variables, replacing them with the empty string.<br>**Failure:** Does not fail |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **KB(***frequency*, *msecs*`)` | Command that plays a certain frequency for a certain time period (defined in milliseconds).<br>*frequency* A number of Hz.<br>*msecs* A number of milliseconds.<br>**Example:**<br>`KB(350,2000)`<br>plays the frequency 350 Hz for two seconds.<br>**Failure:** Does not fail |
| **KC(***mailbox*, *variable*`)` | 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.<br>*mailbox* Any valid mailbox or a variable containing a mailbox.<br>*variable* The port or global variable whose contents are matched against the security code of *mailbox*.<br>**Example:**<br>`R(G1,%S1)KC(212,%S1)KL(%S1)`<br>assigns the DTMF digits entered by the caller to %S1, compares %S1 with the security access code of mailbox 212, and takes the appropriate action.<br>After the caller passes the security check, the KL() command allows the caller to log on to the mailbox. See also the KL() command.<br>**Failure:** Invalid mailbox<br>Invalid security code<br>Security codes do not match |
| **KD(***msg_no* `[,`*mailbox*`]`**)** | Command that deletes a message from the specified or current mailbox. Using this command cancels any pending Notify actions for the specified message automatically.<br>*msg_no* A number or a variable containing a number.<br>*mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**Examples:**<br>`KD(5)`<br>deletes message 5 of the current mailbox.<br>`KD(10,212)`<br>deletes message 10 of mailbox 212.<br>**Failure:** Invalid mailbox<br>Invalid message number |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **KI(***target*,*source*, *variable*)** | Command that searches one string (called the source string) to see if it contains a copy of another string (called the target string).<br>*target* A string or a variable containing the string to be searched for inside the *source.*<br>*source* A string or a variable containing the string to search.<br>*variable* The port or global variable to which the KI() command assigns one of the following:<br>• Zero if the target is not found in the source.<br>• The number of the position within the *source* string at which the copy of the *target* string starts.<br>**Examples:**<br>`KI("UL","PAUL INCE",%S1)`<br>is a successful search and assigns the value 3 to %S1<br>`KI("ULL","PAUL INCE",%S1)`<br>fails and assigns the value 0 to %S1<br>`KI(%S0,%S1,%S2)`<br>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.<br>**Failure:** Does not fail |
| **KJ(***mailbox*, *list_number* [,*sender*])** | Allows a caller to record a message that, when saved, is sent to a list of users.<br>*mailbox* Any valid mailbox or a variable containing a mailbox.<br>*list_number* 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.<br>*sender* Optional. Provides a sender for the message or treats the message as though it were from outside the Amanda system.<br>When 0, the message is treated as a message from outside the Amanda system. Amanda does not identify the sender. This is the default.<br>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.<br>**Example:**<br>`KJ(128,5)`<br>causes Amanda to record a message and then send it to the users on mailing list 5 for mailbox 128.<br>**Failure:** Invalid mailbox or list number or out of disk space |
| **KL(***mailbox*, *security_code*)** | 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....").<br>*mailbox* Any valid mailbox or a variable containing a mailbox.<br>*security_code*The security code for the specified mailbox.<br>**Example:**<br>`R(G1,%S1)R(G2,%S2)P(G5)P(%S1,N)KL(%S1,%S2)`<br>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.<br>**Failure:** Invalid mailbox<br>Invalid security code |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| *ext_no***KM** | 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.<br>*ext_no* Series of DTMF digits that indicate an extension number.<br>**Example:**<br>`128KM`<br>causes Amanda to transfer the call (if she is processing a call) to extension 128, starts a conference call, and records the conference call as a message for mailbox 128.<br>**Failure:** Invalid extension number |
| **KP(***mailbox*, *security_code***)** | Command that sets the security code for the specified mailbox.<br>*mailbox* Any valid mailbox or a variable containing a mailbox.<br>*security_code* String of DTMF digits that indicate the new security code for the specified mailbox.<br>**Example:**<br>`KP(128,"5404")`<br>causes Amanda to change the security code for mailbox 128 to 5404.<br>**Failure:** Invalid mailbox<br>mailbox is locked or read-only<br>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 Set-up utility. |
| **KR(***file_or_box* [,*recording_info*]**)** | Command that makes a recording and stores it as either a file or a message for the specified mailbox.<br>*file_or_box* 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.<br>*recording_info* 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.<br>0 No beep; no post record menu.<br>1 Beep; no post record menu.<br>2 Beep; post record menu.<br>3 No beep; post record menu.<br>**Examples:**<br>`KR(212)`<br>makes the recorded response a new message for mailbox 212.<br>`KR("C:\\MSG.VOX")`<br>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.<br>**NOTE:** When using the KR() command, be sure to ask the caller to leave a message. A suggested example is:<br>`P(G1)KR(212)`<br>Greeting 1 says, "Please leave a message at the tone. Finish by pressing # or hanging up."<br>**Failure:** Invalid mailbox<br>Unable to create file |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **KS**[**(***errorlevel***)**] | Command that starts a system shutdown immediately.<br>*errorlevel* Optional. Specifies the exit code (a DOS errorlevel) at which the system exits. The default exit code (errorlevel) is zero.<br>This command is used only in Extension fields.<br>**Example:**<br>`KS(3)`<br>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.<br>**Failure:** Does not fail |
| **KV(***file***,***field***,** *value***)** | Command that finds and deletes the first record in the specified file that has the specified value in the specified field.<br>*file* 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.<br>*field* A number, string, or variable that indicates the number or name of a field.<br>*value* A string or variable that contains the data to be compared with the contents of the specified field.<br>**Example:**<br>`KV("C:\\LISTS\\PHONE.LST",4,"STEVE BRUCE")`<br>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).<br>**Failure:** The file is read-only<br>Insufficient disk space to save file<br>File is not the correct format (text file containing comma-separated fields and carriage return/linefeed separated records or .DBF file) |
| **L(***file***)** | 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.<br>*file* 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.<br>**Examples:**<br>L(ENGLISH)<br>changes the prompts to those found in ENGLISH.IDX (if your system has a Rhetorex voice board) or ENGLISH.BDX (if your system is connected to a Norstar KSU) in the C:\AMANDA directory.<br>L(SPANISH)<br>changes the prompts to those found in SPANISH.IDX (if your system has a Rhetorex voice board) or SPANISH.BDX (if your system is connected to a Norstar KSU) in the C:\AMANDA directory.<br>**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.) |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **LEN[***string***]** | Assumes the value of the total number of characters within a string or digits within a number.<br>*string* Any string, number, or variable.<br>**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.<br>**Example:**<br>LEN[7145551212]<br>assumes the value 10.<br>I(LEN[%S1],=,4,%S1)<br>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.<br>**Failure:** Does not fail |
| **%M[(***mailbox***)]** | Command that returns the total number of messages for the specified or current mailbox. Each port has its own %M.<br>*mailbox* Optional. A valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**Example:**<br>%M(321)<br>contains the number of messages stored for mailbox 321.<br>**Failure:** Invalid mailbox |
| **M(***greeting* [*#mailbox*], *repetition*,*delay***)** | When Amanda processes this command, she 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.<br>*greeting* One of the seven mailbox greetings (G1–G7). This greeting should be a menu from which the caller is to make a selection.<br>*mailbox* Optional. Any valid mailbox. The default is the current mailbox.<br>*repetition* The number of times to play the greeting.<br>*delay* The amount of time (in tenths of seconds) to wait before repeating the greeting.<br>This command is used only in Extension fields.<br>**Examples:**<br>M(G1,2,20)<br>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.<br>If the caller makes no selection at all, Amanda continues processing at the next token.<br>If the caller makes an invalid selection, Amanda restarts the M() command.<br>If the caller makes a valid selection (for example 5), Amanda immediately continues processing at the mailbox specified in the *Menu* field 5.<br>M(G1#111,2,30)<br>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.<br>**Failure:** Invalid mailbox |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **%N** | System variable that contains the number of new messages for the current mailbox. Each port has its own %N.<br>**Example:**<br>P(%N,N)<br>causes Amanda to say the number of new messages as a number. |
| **N(***file*,*field*,*value* {,*field*,*variable*}**)** | Command that searches the specified file for *all* 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.<br>*file* 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.<br>*field* A number, string, or variable that indicates the number or name of a field. The first *field* indicates what field to compare with *value*; the additional (up to 8) *field*s 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.)<br>*value* A string or variable that contains the data to be compared with the contents of the specified field.<br>*variable* One of port or global variables.<br>**Example:**<br>N("C:\\LISTS\\PHONE.LST",1,"RYAN GIGGS",3,%S1,2,%S2)<br>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.<br>**Failure:** Specified file does not exist<br>Value of field not found within the file |
| **O(***time***)** | 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.<br>*time* A number in tenths of seconds or a variable containing that number.<br>**Example:**<br>O(20)<br>causes Amanda to go on-hook for two seconds.<br>**Failure:** Does not fail |
| **%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).<br>Example:<br>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. |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **P**[*repetition*] (*date*,**D**) | Command that tells Amanda to say the specified number as a date.<br>*repetition* The number of times to repeat the date. The default is 1.<br>*date* A number in either of the following formats: MMDDYY (which assumes the year 19YY,) or MMDDYYYY. For dates after 1999, you must use MMDDYYYY.<br>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.<br>**Example:**<br>`P(06261994,D)`<br>causes Amanda to say "June twenty-sixth, nineteen ninety-four"<br>**Failure:** Does not fail |
| **P**[*repetition*] (*amount*,*currency*) | Command that tells Amanda to say the specified number as an amount of money.<br>*repetition* The number of times to repeat amount. The default is 1.<br>*amount* A number from 0 to 999 million.<br>*currency* Use one of the following:<br>**$** For dollars and cents.<br>**F** For francs and centimes.<br>**P** For pesos and centavos.<br>**Example:**<br>`P(06261994,$)`<br>cause Amanda to say "Sixty-two thousand six hundred nineteen dollars and ninety-four cents"<br>Usually when using **F** or **P**, the system language is French or Spanish. However, the monetary terms are always available, regardless of the system language.<br>**Failure:** Does not fail |
| **P**[*repetition*] (*number*,**N**) | Command that tells Amanda to say the absolute value of the number.<br>*repetition* The number of times to repeat absolute value. The default is 1.<br>*number* A number or variable representing a number from 0 to 999 million.<br>**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.<br>**Examples:**<br>Suppose that %S1 contains -1234 and G1 contains the recording “negative,” then<br>`I(%S1,>,0,1001)P(G1)P(%S1,N)`<br>causes Amanda to say “negative one thousand two hundred thirty-four”. (mailbox 1001’s Extension field would not include the greeting—just the command,<br>`P(%S1,N))`<br>`P(06261994,N)`<br>causes Amanda to say “Six million two hundred sixty-one thousand nine hundred ninety-four.”<br>**Failure:** Does not fail |
| **P**[*repetition*] (*time*,**T**) | Command that tells Amanda to say the specified number as a time of day.<br>*repetition* The number of times to repeat the contents of the port variable. The default is 1.<br>*time* 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.<br>**Example:**<br>`P(1826,T)`<br>causes Amanda to say “Six, twenty-six P.M.”<br>**Failure:** Does not fail |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **P**[*repetition*] **(A,***string***)** | Command that tells Amanda to say the characters in the specified string. For a space, Amanda says the word "space".<br>*repetition* The number of times to repeat the contents of the string. The default is 1.<br>*string* A string of letters from the alphabet and spaces.<br>**Example:**<br>`P(A,"GEORGE BEST")`<br>causes Amanda to say "G," "E," "O," "R," "G," "E," "space," "B," "E," "S," "T."<br>**Failure:** Does not fail |
| **P**[*repetition*]**(D)** | Command that tells Amanda to say the percentage of remaining disk space.<br>*repetition* The number of times to repeat the percentage of disk space. The default is 1.<br>**Examples:**<br>`P(D)`<br>causes Amanda to say "The percentage of free disk space is" followed by the percentage as a number, e.g., forty-two.<br>**Failure:** Does not fail |
| **P**[*repetition*] **(***greeting* [**,***mailbox*]**)** | Command that tells Amanda to play the specified greeting for the specified or current mailbox.<br>*repetition* The number of times to repeat the greeting. The default is 1.<br>*greeting* One of the seven mailbox greetings (G1–G7).<br>*mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**Example:**<br>`P(G1)`<br>causes Amanda to play Greeting 1 for the current mailbox.<br>**Failure:** Invalid mailbox |
| **P**[*repetition*] **(M**[**,***mailbox*]**)** | Command that tells Amanda to say the total number of messages for the specified or current mailbox.<br>Using this command cancels any pending Notify actions for the specified message automatically.<br>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.<br>*repetition* The number of times to repeat the number of messages. The default is 1.<br>*mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**Example:**<br>`P(M,212)`<br>causes Amanda to say the total number of messages for mailbox 212.<br>**Failure:** Invalid mailbox |
| **P**[*repetition*] **(M***n*[**,***mailbox*]**)** | Command that tells Amanda to play the message with the specified number for the specified or current mailbox.<br>*repetition* The number of times to repeat the message. The default is 1.<br>*n* The number of the message to be played.<br>*mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**Example:**<br>`P3(M1,212)`<br>causes Amanda to play message 1 for mailbox 212 three times.<br>**Failure:** Invalid mailbox |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **P**[*repetition*] **(N**[**,***mailbox*]**)** | 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**[*repetition*]**(U**[**,***mailbox*]**)**.<br>*repetition* The number of times to repeat the Name/Extension recording. The default is 1.<br>*mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**Example:**<br>`P(N)`<br>causes Amanda to play the Name/Extension recording for the current mailbox.<br>**Failure:** Invalid mailbox |
| **P**[*repetition*] **(***DTMF***)** | 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.<br>*repetition* The number of times to repeat the DTMF digits. The default is 1.<br>*DTMF* A number or variable containing a series of DTMF digits.<br>**Example:**<br>`P(%S5)`<br>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.<br>**Failure:** Does not fail |
| **P**[*repetition*] **(***prompt_no***,V)** | 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.<br>*repetition* The number of times to repeat the prompt. The default is 1.<br>*prompt_no* 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.)<br>**Example:**<br>`P2(15,V)`<br>causes Amanda to play prompt number 15 twice.<br>**Failure:** Does not fail |
| **P**[*repetition*]**(R)** | Command that tells Amanda to say the DTMF digits entered by a caller who requested relay paging notification. (These digits are stored in %R.)<br>This command can be used in either field, but makes the most sense when used in a Notify Method field.<br>*repetition* The number of times to repeat the DTMF digits. The default is 1.<br>**Example:**<br>`P(R)`<br>causes Amanda to say the DTMF digits stored in the system variable %R.<br>You can also use:<br>`P(%R)`<br>**Failure:** Does not fail |
| **P**[*repetition*] **(U**[**,***mailbox*]**)** | 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**[*repetition*]**(N**[**,***mailbox*]**)**.<br>*repetition* The number of times to repeat the Name/Extension recording. The default is 1.<br>*mailbox* Optional. Any valid mailbox or a variable containing a mailbox. The default is the current mailbox.<br>**Example:**<br>`P(U)`<br>causes Amanda to play the Name/Extension recording for the current mailbox. If it doesn’t exist, Amanda says the digits for the mailbox.<br>**Failure:** Invalid mailbox |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **P**[*repetition*]**(V)** | Command that tells Amanda to say the digits in the Variable field of the Notification record.<br>*repetition* The number of times to repeat the contents of the Variable field. The default is 1.<br>**Example:**<br>`P2(V)`<br>causes Amanda to say the digits in the Variable field twice. The following also works:<br>`P2(%V)`<br>**Failure:** Does not fail |
| **P**[*repetition*]**(X,***file***)** | Command that tells Amanda to play a voice file.<br>*repetition* The number of times to repeat the contents of the file. The default is 1.<br>*file* 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 *adpcm_nq* system configuration option. This option's default is 32 kilobytes.<br>**Example:**<br>`P(X,"C:\\SAMPLE.VOX")`<br>retrieves "SAMPLE VOX" from the root directory, and plays it.<br>**Failure:** Does not fail |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **Q(**{*greeting* [*#mailbox*][**,E**]}**)** | 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 *mailbox*, 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.<br>This command is used only in Extension fields.<br>*greeting* One of the seven mailbox greetings (G1–G7).<br>*mailbox* Optional. Any valid mailbox. The default is the current mailbox.<br>**E** Gives the caller the opportunity to edit (review, rerecord, append, or cancel) the previous group of answers.<br>If additional token language processing is required after the caller has hung up, use the H token as part of the token string.<br>**Examples:**<br>`Q(G1,G2,G3,G4,G5,G6,G7,G1#9000,G2#9000)`<br>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.<br>`Q(G1,G2,G3,E)`<br>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.<br>`Q(G1,G2,E,G3,G4,E)`<br>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.<br>**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.<br>**Failure:** Invalid mailbox<br>Invalid greeting |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **%R** | 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. See the notification chapter in *Administering Amanda@Work.Place*. This is primarily used to send up to 16 digits of information to a user's pager/beeper.<br>This token is used only in Notify Method fields.<br>**Example:**<br>`9,%VW(9,V)P(U)P(R)`<br>causes Amanda to call someone at home and say the telephone number and other information in the relay variable. |
| **R(***greeting* `[#`*mailbox*`],` *variable* `[,`*timeout*`])` | 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.<br>*greeting* One of the seven mailbox greetings (G1–G7).<br>*mailbox* Optional. Any valid mailbox. The default is the current mailbox.<br>*variable* One of the port or global variables.<br>*timeout* A number from 0 to 99 that represents the time in tenths of seconds to wait for a DTMF entry after playing the greeting. The default is 1.2 seconds.<br>**Example:**<br>`R(G1,%S6,20)`<br>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.<br>`R(G1#111,%S1)`<br>plays Greeting 1 of mailbox 111. The DTMF digits entered by the caller become the value of %S1.<br>**Failure:** Invalid mailbox<br>Invalid greeting |
| **%S0** **%S1**<br>**%S2** **%S3**<br>**%S4** **%S5**<br>**%S6** **%S7**<br>**%S8** **%S9**<br>**%S10** **%S11**<br>**%S12** **%S13**<br>**%S14** **%S15**<br>**%S16** **%S17**<br>**%S18** **%S19** | 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.<br>See also %G0–%G9.<br>**NOTE:** The [(), ](), and \|() 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.<br>**Example:**<br>`+(%S0,5)`<br>adds five to the current value of %S0.<br>`=(%S12,714)`<br>assigns the area code 714 to %S12.<br>`I(%S12=714,555)`<br>causes Amanda to go to the Extension field for mailbox 555 because the condition is true (%S12 does equal 714).<br>**Failure:** Invalid variable name (such as %S52) |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **S(***port*,[*string*], [*variable*], [*termination*], [*length*],[*timeout*]**)** | 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:<br>• Amanda receives the specified termination string<br>• She receives the maximum number of characters<br>• A timeout occurs<br>When sending, Amanda terminates the connection after the string is sent.<br>Before using this command, make sure the configuration settings for the physical serial port have been defined.<br>*port* 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 *serial_port1*, *serial_port2*, *serial_port3*, or *serial_port4*.<br>*string* Optional. A string or variable containing the characters to send to the specified serial port. It can contain alphanumeric characters as wells as variables and the following special characters:<br>\A Attention, which is a bell sound (Ctrl+G)<br>\N Newline (Ctrl+J)<br>\R Return (Ctrl+M)<br>\T TAB (Ctrl+I)<br>\\ Backslash, the actual "\" character.<br>The default is to send no string to the serial port.<br>*variable* Optional. The port or global variable that stores the response. The default is not to store a response.<br>*termination* 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 *string*. 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 *variable*.<br>*length* 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 *length* 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.<br>*timeout* 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 *tmo_serial*.<br>**Example:**<br>`S(2,%S3,%S4,,,50)`<br>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.<br>`S(2,%S3)`<br>only sends. The command uses COM port 2. %S3 stores the string to be sent. This command has non-standard syntax. Because *all* the parameters after the string to be sent are not being used, this command does not need the additional commas.<br>`S(2,,%S4,,,50)`<br>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.<br>**Failure:** Physical port not available<br>Logical port not configured properly<br>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. |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **%T** | 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.<br>**Examples:**<br>P(%T,N)<br>causes Amanda to say the amount of connect time as a number. See the P() command for more information. |
| **T(***file,phone_no* **[,***tokens***])** | 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.<br>Before using this command, make sure the configuration settings for the physical serial port have been defined.<br>*file* 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.<br>*phone_no* 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.<br>*tokens* 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.<br>This command is used only in Extension fields.<br>**Examples:**<br>T(C:/FAXES/NEWINFO.FAX,%G6)<br>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.<br>T(C:/FAXES/NEWINFO.FAX,"",%S5)<br>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.<br>**Failure:** Fax modem not configured properly<br>Physical port not available<br>Logical port not configured properly |
| **%U** | System variable that contains the current mailbox number. Each port has its own %U. See also %P. |
| **U-***ext_no* | Command that performs partially supervised transfers. Amanda does not transfer the call if she detects a busy signal. To use the U token, the setting for Maximum Rings for the mailbox must be set to 1.<br>*ext_no* Series of DTMF digits that indicate an extension number.<br>This command is used only in Extension fields.<br>**Example:**<br>U-144<br>causes Amanda to call extension 144 (if Amanda is processing a call). If the extension rings, she transfers the call and hangs up. If the extension is busy, Amanda lets the caller know that.<br>**Failure:** Does not fail |

# Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **%V** | System variable that contains the value of the Variable field in the current Notification record. Each port has its own %V.<br>This token is used only in Notify Method fields.<br>**Example:**<br>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.<br>`9,%VW(3,P)%U*%M*%N#`<br>causes Amanda to call the user and play the number of messages. |
| **V(***file*,*field*, *value*{,*field*, *variable*}**)** | Command that searches the specified file for the first 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.<br>*file* 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.<br>*field* A number, string, or variable that indicates the number or name of a field. The first *field* indicates what field to compare with *value*; the additional (up to 8) *field*s indicate what fields to copy into the corresponding variables. (.DBF files have field names; text files have field numbers.)<br>*value* A string or variable that contains the data to be compared with the contents of the specified field.<br>*variable* One of port or global variables.<br>**Example:**<br>`V("C:\\LISTS\\PHONE.LST",1,"JOHN",3,%S1,2,%S2)`<br>searches the file PHONE.LST for 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.<br>**Failure:**<br>If no record is found |
| **%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(***n*,[*event* [,*mailbox*]]**)** | Command that tells Amanda to:<br>• Wait a number of tenths of a second<br>• Wait for an event, such as a dial tone or another appropriate answer. If the event does *not* occur, Amanda goes to the specified mailbox.<br>*n* Without an event parameter (P, V, or T), a number of tenths of a second. For dial tone (T), the number of seconds. For pager (P) and voice (V), the number of rings to wait before continuing. If n is 0 for pager or voice, the 0 is replaced with the value of rmt_rna, a configuration option that you define using the Setup utility.<br>*event* The event that Amanda waits for:<br>**P** A pager answer<br>**V** A voice answer<br>**T** The dial tone<br>*mailbox* Any valid mailbox or a variable containing a mailbox. Specifies the mailbox to which control should be transferred if the event does not occur.<br>**Examples:**<br>`W(3)`<br>makes Amanda pause for 3 tenths of a second<br>`W(3,P)`<br>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.<br>`W(4,V,111)`<br>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.<br>**Failure:** Invalid mailbox<br>Event does not occur and no mailbox is specified |
| **%X** | 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 dl-dtwait configuration option (usually F-). |
| **X[(***file***)]** | 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.<br>*file* 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.<br>**Example:**<br>A user's message light toggles on and off. For the first message, Amanda should turn the light on. The light should be left on for the second and later messages (until they are all listened to). So you use:<br>• `Z()` to check whether the light is on or not (if LIGHT.ON exists, the light is on).<br>• `X()` to create the LIGHT.ON file when a message arrives and the light is not on.<br>• `Y()` to delete LIGHT.ON when the light is turned off because the user has listened to all the messages.<br>**Failure:** Does not fail |
| **%Y** | System variable that contains the current date in American format: MMDDYYYY.<br>**Example:**<br>`P(%Y,D)`<br>causes Amanda to say the current date (contained in %Y) as a date.<br>See the P() command for more information. |

## Alphabetical Token Reference (Continued)

| Token Syntax | Description |
|---|---|
| **Y**[(*file*)] | Command that deletes the specified file or LIGHT.ON.<br>*file* 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.<br>**Example:**<br>`Y(C:\\AMANDA\\FOOBAR.TXT)`<br>causes Amanda to delete FOOBAR.TXT.<br>See also the X() command.<br>**Failure:** Does not fail |
| **%Z** | System variable that contains the current time in 24-hour format: HHMM.<br>**Example:**<br>`P(%Z,T)`<br>causes Amanda to say the current time (contained in %Z) as a time.<br>See the P() command for more information. |
| **Z**[(*file*)] | 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.<br>*file* 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.<br>**Example:**<br>`Z()X()`<br>causes Amanda to check for LIGHT.ON. If it is *not* there, the X() command causes Amanda to create it.<br>See also the X() command.<br>**Failure:** Does not fail |

# 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 10:
# Programming Examples

## 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

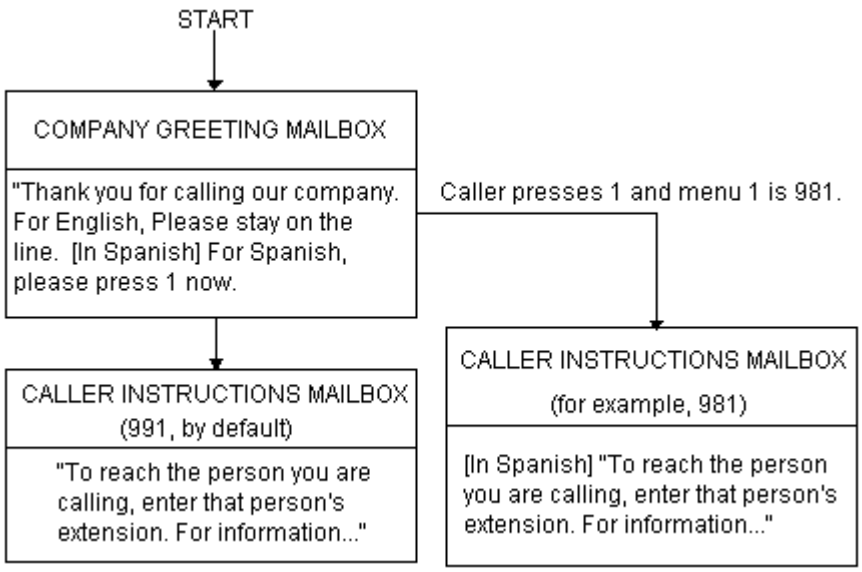
This example illustrates how you can completely over-ride Amanda’s standard processing.

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:

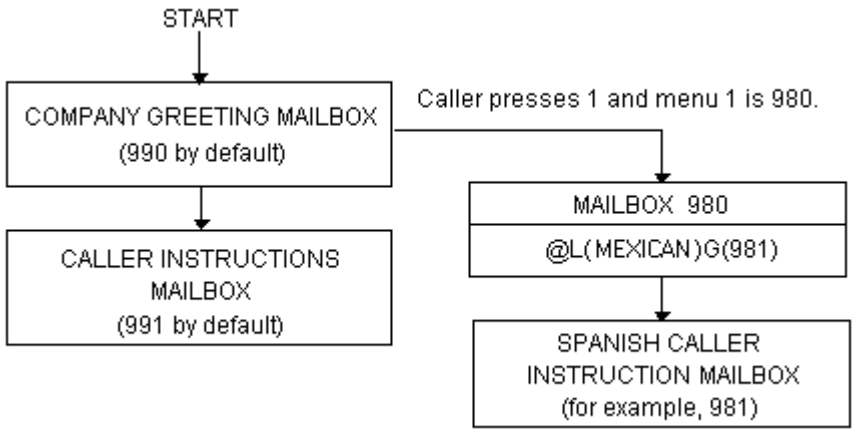


This now gives your callers the option to hear their instructions in the language of their choice (realize that you can have additional language selections as additional menu choices). However, after the caller selects Spanish by pressing 1, when they access a mailbox, Amanda still says in English, “Please 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 Spanish system prompts, use L(SPANISH) provided that the Spanish system prompts file resides in the Amanda directory and is named SPANISH.IDX (because your system has a Rhetorex voice board).

To accomplish this, we could use another mailbox that changes the system prompts to Spanish and then continues processing at the Spanish Instructions as follows:




mailbox 980’s *Extension* field contains the tokens `@L(SPANISH)G(981)` which causes Amanda to:

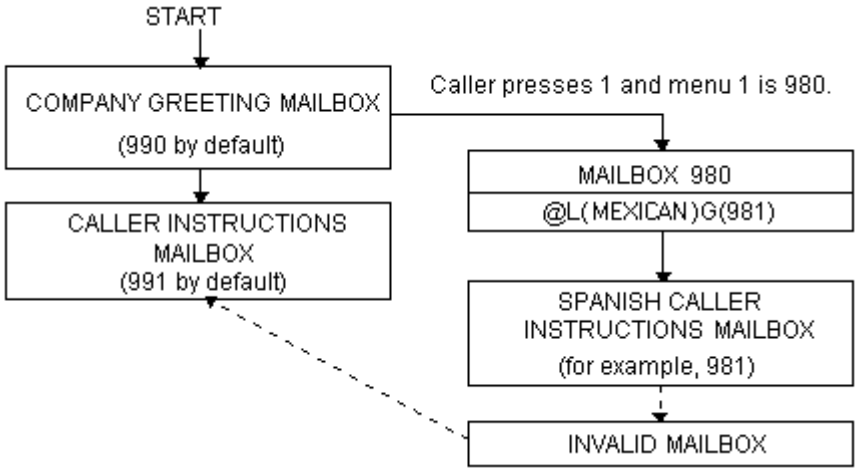
1. Not put the caller on transfer hold
2. Change the system prompts to the file "SPANISH"
3. Continue processing at mailbox 981.

**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.

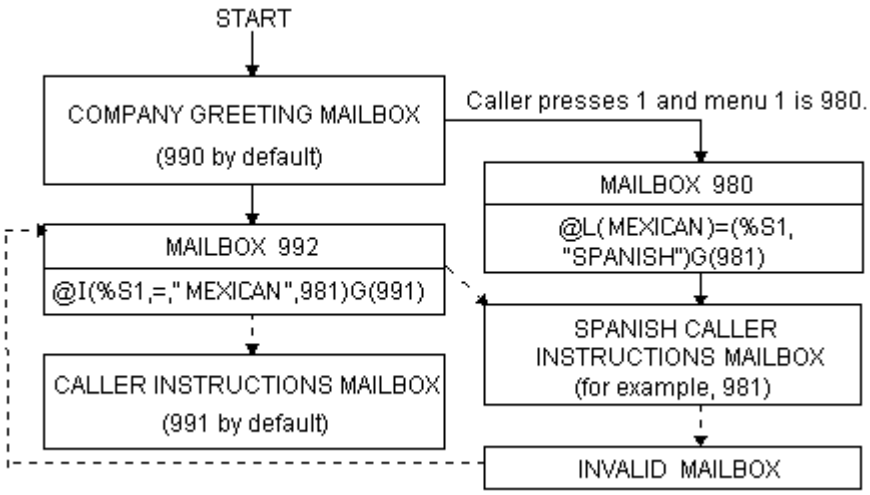
## Using Amanda's Tokens

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,"SPANISH")` stores the value "SPANISH" 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,=,"SPANISH",981)` checks the value of %S1 for "SPANISH" and if it matched, then continues processing at mailbox 981 (the Spanish Instruction 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 "SPANISH" and control is always passed on to mailbox 991 from mailbox 992.

# Order Shipment Information

This example illustrates 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, she needs to retrieve information from some source. One possible way she 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 if Amanda is connected to one). 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.*

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.*

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 |

# 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

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).

# 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.

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 has “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 that 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 89 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 142) 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 134.)
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:\\TESTERS\\TESTX.TXT)P(G1)G(999)`
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….

# Appendix A: Troubleshooting Amanda

## New Problems

Solving a problem often requires sending annotated trace files to The Amanda Company. Amanda Company 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. Submit trace files to a place accessible to everyone even if the customer service representative you have been working with is out of the office: customer.support@taa.com.

## Resetting a Port from the Main Screen

The Main screen is used primarily for information about the system. However, Amanda also allows you to reset a port from the Main screen so that the system does not have to be completely shut down. This is a hidden feature, so that people will not accidentally make a port idle. No dialog box appears on the screen.

Ports are represented by two digits. Port 1 is 01, port 5 is 05, port 13 is 13, and so forth.

**To reset a specific port (make it go IDLE), do the following:**

1. Press Ctrl+Home.
2. Press Alt+P.
3. Enter the two-digit port number.

This forces a hangup on the specified port.

**CAUTION:** Anyone using the port being reset is disconnected without warning.

## What to Do When…

This section explains what to do when:

- Amanda does not transfer the call
- Ports do not work
- The caller doesn’t hear the Busy or RNA Greeting
- Notification does not work correctly
- The Host/Remote programs do not work
- System halts
- Miscellaneous

## 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:** **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. When the Extension field starts with @, a F- or %X will not enable PCPM. Amanda does not listen for call progress tones. The W() token can be used to listen for voice.

**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.)

## Ports Do Not Work

If Amanda ports are not working properly, one of the following may be causing the problem.

**Problem:** **The port locks up.**

Solution: With the system-wide Priority Call feature enabled, a port is locked if the Priority soft key is pressed before Amanda can answer a call from a Norstar station. The port remains locked until another call is placed and the Priority soft key is pressed once more. There is little chance that this will occur because:

- The soft key is available for use only about 5-8 seconds
- There is no reason to use this key with an Amanda port

However, there is also no way to disable the Amanda port from receiving this type of call. The only fix is to disable the feature on a system-wise basis which means resetting every station.

**Problem:** **The ports do not work.**

Solution: After Amanda is up and running, if you plug and unplug digital ports to Amanda, they do not work. You must restart Amanda. The blinking LED on the Amanda Company voice board lets you know whether all, some, or none of the ports are connected to the KSU.

1 blinkAll ports connected
2 blinksSome ports connected
3 blinksNo ports connected

If you see 4 blinks, the Amanda Company voice board has not been initialized.

## 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 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 1.)

**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 1. Integration strings include:

- busy ('bbb')
- ring no answer ('rrr')

**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.

Make sure that any single line ports connected to the voice board's last port (the notification port) get dial tone when they go off-hook. Program the telephone switching system to grant the notification port outside dial tone, when a 9 or some other code is dialed.

**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 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.

## Host/Remote Programs Do Not Work

If the Host and Remote programs do not work, one of the following may be causing the problem. See “Chapter 8: Accessing Amanda Remotely.”

**Problem:** **Both modems used have a bps higher than 2400.**

Solution: Make sure you use /f on the command line if both modems are faster than 2400 bps (bits per second).

**Problem:** **Host is not loaded in the AUTOEXEC.BAT file or has not been loaded manually.**

Solution: Check your AUTOEXEC.BAT to see if “rem” is in front of LH HOST statement. Or type LH HOST /*x* with the COM port *x* at the DOS prompt (C:\). Use /1 with null modem cables and /2 with modems.

**Problem:** **Host is installed on the wrong COM port.**

Solution: Check what COM port your modem is using and change the LH HOST statement to use that port number.

Be sure that the host program is not using the same COM port as any other process, such as SMDI or your fax modem.

**Problem:** **An internal modem is being used and there is an IRQ or a COM port conflict with the computer’s controller card.**

Solution: Check your computer’s controller card and verify that your modem’s COM port is disabled on the controller card.

**Problem:** **Remote is installed on a COM port other than COM 1 or 2.**

Solution: To use the Remote program, the modem must use only COM 1 or COM 2. Verify that the modem is set for one of these ports. Then run the remote program designating the correct port.

**Problem:** **Other communications software is still running.**

Solution: Remove all other remote software from the computer’s AUTOEXEC.BAT file and do not load any other remote software manually.

## System Halts

**Problem:** **The lpt_port option is set to a non-zero number but no printer is attached.**

Solution: Run Setup as explained in See “Running Setup” on page 55. Select System Configuration Options, then General Configuration, then General Defaults. Change ***x*** in “Printer attached to LPT [***x***]” to zero if no printer is attached.

**Problem:** **The host is loaded on a non-existent COM port.**

Solution: Check to see that the internal modem has not been removed.

## Miscellaneous

**Problem:** **An outside caller hears the "Enter your security code" (EYSC) prompt.**

Solution: Each incoming line (usually from the CO) to the Norstar can have a name. For example, on the 8x24 the default name for Line 1 is 'Line001'. None of the incoming lines can have its *name* changed to either of the following:

- The *name* of any of the sets/telephones (which are copied into the mailbox Set Name fields by Autocreate or entered manually)
- The *number* of a mailbox defined in Amanda

The best way to resolve the conflict is to review (and reassign if necessary) the names assigned to the Lines in the Norstar. Callers will hear the EYSC prompt only if one of the above conditions is true AND if Amanda's first port is busy (so the CO call is forwarded in the hunt group).

**Problem:** **No Button Free Message appears.**

Solution: If you see the “No Button Free” message, eight or more lines are programmed to appear on Amanda’s emulated 7310 port. A properly programmed Norstar must have ALL lines programmed to the first set (Amanda port 1). This causes all calls to come in on the SINGLE intercom line. Call forwarding handles the distribution of these calls, and the SINGLE intercom button works effectively as a loop key.

**Problem:** **Amanda asks for a demonstration password.**

Solution: If Amanda asks you for a demonstration password, you almost certainly have an IRQ conflict. The Amanda Company voice board driver is not loaded correctly and the STATUS line in C:\BOOTLOG contains one or more 3s-instead of one or more *s (asterisks). (You should have one * for each pair of ports on the Amanda system. For example, a four-port system's boot log has the line STATUS **.)

A side-effect of this IRQ problem is that Amanda asks for a demo password.

**Problem:** **Disconnects occur during call screening or while manage waiting calls.**

Solution: To prevent disconnects during call screening and manage waiting call operations, the configuration option tmo_sound should be set to 0. Because the Norstar KSU is a digital system, this option should be disabled.

# Appendix B:
# Installing Amanda Company Boards

## Using an Amanda Company Board with a norstar™ KSU and Amanda

Amanda uses specially designed Amanda Company voice boards when connected to a Norstar KSU. These boards work with the Norstar KSU without using external Northern Telecom VMI hardware. They emulate Norstar M7310 digital telephone sets and permit a direct digital link with compatible Norstar KSUs. The Amanda Company voice board also provides more features and better performance because it is entirely digital.

Each board has four RJ-11 connectors, each of which connects to a two-wire digital Norstar KSU extension. These interfaces provide signaling, audio interface to the line, and the ability to send and receive messages.

## 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…**

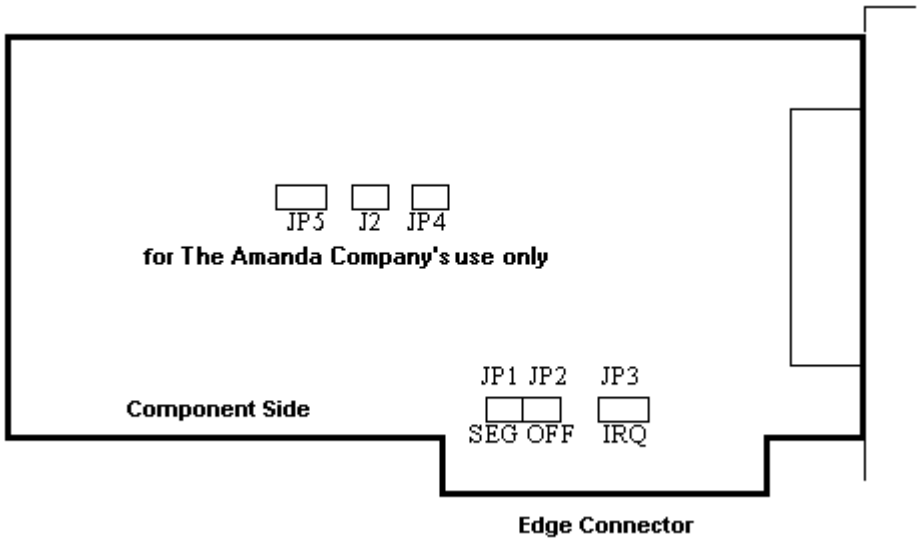
1. Program the telephone switching system for voice mail integration.
2. Turn the computer off.
3. Check the jumpering for the voice boards and then install them.
4. Connect the line cords from voice boards to the telephone switching system. (Make sure all the extensions are connected to the board **BEFORE** starting Amanda.)
5. Turn the computer back on to install the Amanda software without errors.
6. Run Setup to define Amanda system configuration options.

   Make sure smdi_base_port and cfg_port are set correctly for your system. These are Amanda's Norstar-specific configuration options.
7. Test each voice board port for answering.
8. Run Setup to obtain tone patterns for calls outside the Norstar.

# Background Information

Each Amanda Company voice board requires eight kilobytes of memory. Prior to installation, each board must be configured to use a separate memory area. See “Configuring the Boards” on page 153 for more information.

## Amanda Company Board (Designed for norstar™)




The JP1 and JP2 jumper blocks shown in the diagram above indicate the exact location in memory to be used by that board. JP1 indicates the memory segment, and JP2 indicates the offset within that memory segment.

Amanda Company voice boards are preset to D800. If you are installing more than one board, each board must have a different segment/offset location. These locations must be contiguous and eight kilobytes (2000 hex) apart. The Voice Board Advisor program lets you know how to jumper each board.

Each of the JP1 and JP2 jumper blocks has three pin positions. Each of the positions must be correctly set: closed or 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.

The combined settings for the three JP1 positions indicate a memory segment. The combined settings for the three JP2 jumper positions indicate the offset (or starting position) within the memory segment specified by the shorting jumpers on the JP1 jumper positions.

You must also set JP3, the jumper block that indicates which hardware interrupt (IRQ) the board will use to communicate with the driver. All the Amanda Company voice boards in the same PC must use the same IRQ. Amanda Company voice boards are preset to use IRQ 5. Advisor shows where to place the shorting jumper for this IRQ.

The J2, JP4, and JP5 jumper blocks (also shown in the diagram) are for board use only. Never change J2, JP4, and JP5. (Do not confuse J2, the board use only jumper block, with JP2, the offset jumper block that you do set.)

# Configuring the Boards

Before you install Amanda software or install the voice boards, run the Voice Board Advisor program. Advisor does both of the following:

- Displays the configuration needed for each board
- Stores configuration information on your hard drive that is used later by the installation program

**To configure an Amanda Company voice board:**

- Run Advisor to configure the board to use a convenient memory location and IRQ 5.

## A Two-board Arrangement

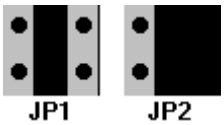
The following example shows a two-board (8-port) system. Each of the boards use the D000 memory segment, but they are located eight kilobytes away from each other (2000 in hex) because each board needs eight kilobytes of memory. The jumper positions for the corresponding memory segments and offsets are also shown in the JP1 and JP2 Jumper Settings table in “Installing the Boards” on page 154.

### Two-board Arrangement

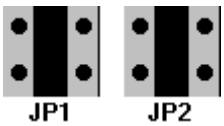
| Board | JP1 | | | JP2 | | | Segment and Offset |
|---|---|---|---|---|---|---|---|
| | Pos. 1 | Pos. 2 | Pos. 3 | Pos. 1 | Pos. 2 | Pos. 3 | |
| **1** | Open | Closed | Open | Open | Closed | Closed | D800[1] (to D9FF) |
| **2** | Open | Closed | Open | Open | Closed | Open | DA00 (to DBFF) |

[1] Segment and offset usually selected by The Amanda Company for first Amanda Company voice board for Norstar. When you buy your board from The Amanda Company, this is its default setting.

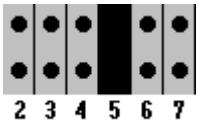
### JP1 and JP2 for First Board




### JP1 and JP2 for Second Board




### Jumper Block for IRQ (JP3) (for both boards)




Each number represents an IRQ. For example, 2 represents IRQ 2. This figure shows IRQ 5 as the selected IRQ. Be sure to select an interrupt number that is not used by another board (such as a modem or LAN card) in this PC.

## Installing the Boards

Use the following procedure to install one or more The Amanda Company voice boards in PC slots.

**To install the boards:**

1. Turn your computer off.

2. Remove the computer’s cover.

3. Select an empty slot for each Amanda Company voice board and remove the blanking brackets (cover plates) from the rear of the PC chassis, corresponding to the chosen slot.

4. Insert each board gently into a slot and make sure that it is seated properly by screwing the board bracket to the rear panel of the PC.

5. Replace the computer's cover.

6. Attach the Norstar telephone extension lines to the RJ-11 connectors.

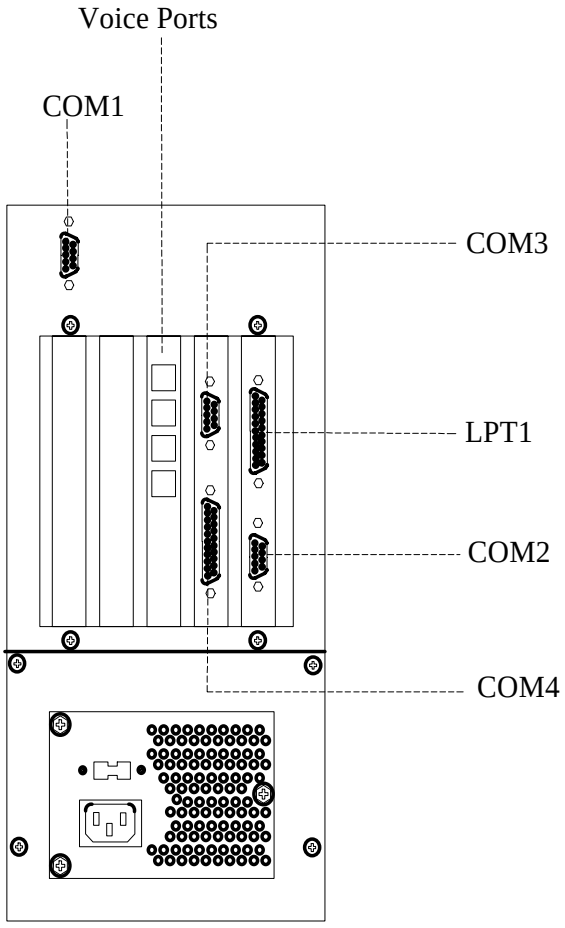
   **CAUTION:** The Amanda Company voice board is to be used **only** with Northern Telecom's Norstar telephone switching systems. You can permanently damage the board by connecting the RJ-11 connectors to any other telephone outlet.

7. Turn the computer back on.

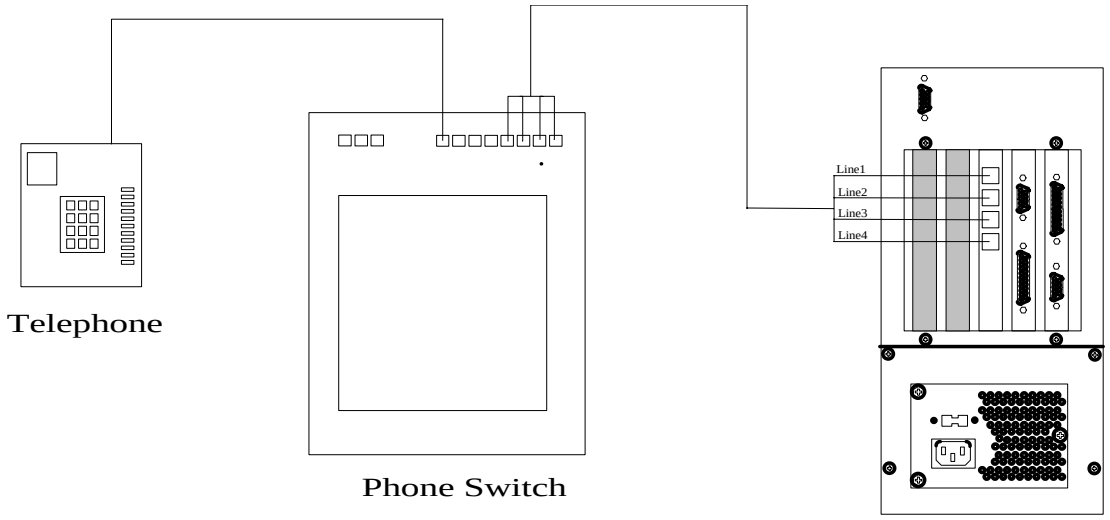
**CAUTION:** Use an electrostatic discharge-safe (ESD-safe) station while configuring and installing your board. Otherwise, static discharge may damage your board.

# Connecting the Ports

The next figure shows you the back of the computer for a four-port system that uses one four-port voice board. Each board has four RJ-11 connectors providing connection to four loop-start trunks or station line interfaces.



The next figure shows how to connect the telephone switching system to the voice ports on the computer.




# Connecting the Cables

The length of twisted pair cables connecting the telephone sets and Amanda ports to the KSU should not exceed 250 ft. Increasing the length of the cables can cause background noise.

# Appendix C: Configuration Reference

## General Options

| Configuration Option | Description |
|---|---|
| abbreviate_dates | Controls how Amanda says the date for a message dated today or yesterday.<br>True or False. The default is True.<br>When True, Amanda says "today" or "yesterday" instead of the actual date, for example, "November 27th, 1996."<br>When False, Amanda says only the actual date, such as "November 27th, 1996."<br>The default appears in install.cfg as:<br>`set abbreviate_dates true` |
| abbreviate_greeting | Allows you to shorten the system greeting.<br>True or False. The default is False.<br>When True, Amanda says, "Please leave a message at the tone." This is the shortened version of the system greeting.<br>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.<br>The default appears in install.cfg as:<br>`set abbreviate_greeting false` |
| activation_key | A number you receive from your Amanda Company sales representative to activate your system. You must set this option if one or more of your voice boards were not purchased from The Amanda Company.<br>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.<br>The default is 0, which means there is no activation key.<br>The default appears in install.cfg as:<br>`set activation_key 0` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| active_hold | When the extension is busy, the caller can hold for the called party—actively or inactively.<br>True or False. The default is True.<br>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.<br>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.<br>See also auto_queue.<br>The default appears in install.cfg as:<br>`set active_hold true` |
| adpcm_hq | Sets the sampling rate for outgoing greetings. The higher the sampling rate, the better the sound quality, but also the more disk space used.<br>24, 32, or 64. The default (and recommended value) is 64.<br>**NOTE:** If you change this on an active system, all previously recorded outgoing greetings need to be re-recorded.<br>The default appears in install.cfg as:<br>`set adpcm_hq 64` |
| adpcm_nq | Sets the sampling rate for incoming messages. The higher the sampling rate, the better the sound quality, but also the more disk space used.<br>24, 32, or 64. The default (and recommended value) is 32.<br>**NOTE:** If you change this on an active system, you should have users delete all their messages first.<br>The default appears in install.cfg as:<br>`set adpcm_nq 32` |
| adpcm_pq | Sets the sampling rate for the system prompt file. This is set to the sampling rate at which the system prompt file was recorded.<br>24, 32, or 64. Correctly set by default.<br>**NOTE:** Do not change this unless you have installed the appropriate system prompt file.<br>The default appears in install.cfg as:<br>`set adpcm_pq` *x*<br>where x is the correct setting for your prompt files. |
| advertising | Displays a text string at different locations on the Main screen after the screen saver starts up.<br>Use any text string ranging from 0 to 79 characters. The recommended length is less than 30 characters so your message is easy to read and fits on the screen at most locations. 'Buy more AMandAs!' is the default.<br>See also tmo_blank.<br>The default appears in install.cfg as:<br>`set advertising 'Buy more Amandas!'` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| auto_queue | Designed for callers with rotary telephones so that they can be put “on hold” without having to press *.<br>True or False. The default is False.<br>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.<br>The default appears in install.cfg as:<br>`set auto_queue false` |
| auto_report | 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.<br>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.<br>To use this feature, verify the following:<br>• A printer with a parallel interface must be connected to Amanda<br>• The parameter lpt_port must be set to 1, indicating the port to which the printer is attached<br>• The printer must be online and have enough paper<br>See also auto_report_time and lpt_port.<br>The default appears in install.cfg as:<br>`set auto_report ''` |
| auto_report_time | The time of day at which the report is to be printed (when auto_report is not an empty string).<br>A time of day in 24-hour MMHH format. The default is 0745 (7:45 a.m.).<br>See also auto_report and lpt_port.<br>The default appears in install.cfg as:<br>`set auto_report_time 0745` |
| begin_rec_prompt | When record_menu is True, this option controls whether the caller hears Amanda prompts or only a beep when recording a message. This option 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.<br>True or False. The default is True.<br>When True, Amanda plays, “Begin recording at the tone, finish by pressing # or hanging up” before the beep.<br>When False, the caller hears only a beep.<br>See also record_menu and end_rec_menu.<br>The default appears in install.cfg as:<br>`set begin_rec_prompt true` |
| ca_file | 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.<br>Use any filename. The default is 'SMDR.DAT'.<br>See also ca_port.<br>The default appears in install.cfg as:<br>`set ca_file 'SMDR.DAT'` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| ca_port | 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.<br>Use 0, 1, or 2. The default is 0.<br>See also ca_file.<br>The default appears in install.cfg as:<br>`set ca_port 0` |
| cancel_busy_hold | Determines whether callers can hold for a busy extension.<br>True or False. The default is False.<br>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).<br>When False, the caller can press * to hold for a busy extension.<br>The default appears in install.cfg as:<br>`set cancel_busy_hold false` |
| cfg_port | Specifies the port on which to perform configuration. Use the second to last port in the linear hunt group to prevent collisions (glare) during configuration and other port activities. This port is less likely to be receiving incoming calls than the other ports.<br>0 means that there is no port used for configuration. The default is 3.<br>The default appears in install.cfg as:<br>`set cfg_port 3` |
| clock_sync | Controls whether Amanda resynchronizes the DOS software clock with the PC hardware clock.<br>True or False. The default is True.<br>When True, Amanda resynchronizes.<br>When False, Amanda does not resynchronize. Turn this off if you have another utility that controls the PC clock.<br>The default appears in install.cfg as:<br>`set clock_sync true` |
| cmt_maxlen | 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.<br>Number of seconds. The range is from 1 to 99. The default is 10.<br>The default appears in install.cfg as:<br>`set cmt_maxlen 10` |
| connect_tone | When an answer is detected and Amanda is not identifying the called party for the current mailbox, this option determines whether Amanda plays a beep. (The mailbox's ID Call? field is set to NO.)<br>True or False. The default is True.<br>When True, Amanda plays the beep.<br>When False, there is no beep.<br>The default appears in install.cfg as:<br>`set connect_tone true` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| create_locked | 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 options. This prevents callers from logging into the mailbox template.<br>True or False. The default is False.<br>When True, new mailboxes created from the template are initially locked if the template is locked.<br>When False, new mailboxes are not locked. This means that they can be logged into via the telephone immediately after they are created.<br>The default appears in install.cfg as:<br>`set create_locked false` |
| db_locking | 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.<br>The value is 0 or 1. The default is 0.<br>When 0, Amanda does not perform record locking.<br>When 1, 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.<br>The default appears in install.cfg as:<br>`set db_locking 0` |
| defaults_box | 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).<br>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.<br>Use any valid mailbox. The default is 997.<br>See also guest_defaults.<br>The default appears in install.cfg as:<br>`set defaults_box 997` |
| diskwarn | When Amanda has only the specified percentage of disk space left, she 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.<br>Number (for a percentage). The range is from 1 to 99. The default is 20.<br>See also tmo_disk.<br>The default appears in install.cfg as:<br>`set diskwarn 20` |
| dl_pickup_on_ring | When an inbound ring is detected and Amanda goes off-hook, this option 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.<br>True or False. The default is False.<br>When True, Amanda dials the code.<br>When False, Amanda does not dial the code.<br>The default appears in install.cfg as:<br>`set dl_pickup_on_ring false` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| dtmf_dly | Controls the amount of time between DTMF tones when Amanda is dialing.<br>Number of hundredths of seconds. The value is 0 or a number from 3 to 19. The default is 0.<br>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.<br>The default appears in install.cfg as:<br>`set dtmf_dly 0` |
| dtmf_gate | 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.<br>True or False. The default is False.<br>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.<br>When False, Amanda transfers the call without verifying that the caller is still on the line.<br>The default appears in install.cfg as:<br>`set dtmf_gate false` |
| dtmf_on | Controls how long Amanda plays each DTMF tone.<br>Number in hundredths of seconds. The range is from 10 to 90. The default is 20 (.2 seconds).<br>The default appears in install.cfg as:<br>`set dtmf_on 20` |
| exit_digit | Defines one additional DTMF tone that causes Amanda to stop during recordings (whether greetings or messages) and play the post-record menu.<br>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.<br>The default appears in install.cfg as:<br>`set exit_digit '#'` |
| end_rec_menu | When record_menu is True, this option determines whether callers and users hear the post-record menu that allows them to review or re-record their messages or greetings.<br>True or False. The default is True.<br>When True, the caller or user hears the menu.<br>When False, the caller or user does not hear the menu.<br>The default appears in install.cfg as:<br>`set end_rec_menu true` |
| exit_to_0 | Allows a caller to leave a message and talk to the operator afterwards.<br>True or False. The default is True.<br>When True, the caller can press 0 after recording a message and is transferred to mailbox 0.<br>When False, Amanda records the DTMF 0 as part of the message unless 0 is defined as an exit digit (see also exit_digit).<br>**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.<br>The default appears in install.cfg as:<br>`set exit_to_0 true` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| future_delivery | Specifies the mailbox that stores messages to be delivered in the future. This mailbox must be able to store messages.<br>The default is 995, but you can use any valid mailbox. -1 means no mailbox has been assigned.<br>The default appears in install.cfg as:<br>`set future_delivery 995` |
| gain_loud | Controls the volume of the custom busy message.<br>Number. The range is from 1 to 9 and the default is 5.<br>The default appears in install.cfg as:<br>`set gain_loud 5` |
| gain_norm | The initial volume for all ports.<br>Number. The range is from 1 to 9 and the default is 5.<br>The default appears in install.cfg as:<br>`set gain_norm 5` |
| guest_defaults | The mailbox to use as a template when creating a new guest mailbox.<br>The default is 996, but you can use any valid mailbox. -1 means no mailbox has been assigned.<br>See also defaults_box which explains what fields are copied.<br>The default appears in install.cfg as:<br>`set guest_defaults 996` |
| guest_min | The starting mailbox for guest mailboxes. If this value is 90000, the first guest mailbox is 90000. The second is 90001, and so forth.<br>See also guest_max. Guest_max must be larger than guest_min.<br>Any valid mailbox. The default is 90000.<br>The default appears in install.cfg as:<br>`set guest_min 90000` |
| guest_max | 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.<br>A valid mailbox. The default is 90199.<br>The default appears in install.cfg as:<br>`set guest_max 90199` |
| integration_greeting | Determines what greeting plays for integrated calls that have both rr and ss (or rrr and sss) 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 "Chapter 5: Defining Integration Patterns" for more information.)<br>True or False. The default is True.<br>When True, Amanda plays the RNA greeting for the mailbox identified by rr.<br>When False, Amanda plays the system greeting.<br>In either case, a message is taken for rr from ss.<br>The default appears in install.cfg as:<br>`set integration_greeting true` |
| irq | The IRQ over which the voice board communicates with the Amanda system.<br>The default is 7. The range is 0-15, but do not change this setting unless instructed to by an Amanda Company employee. Most IRQs are unavailable because they are used by PC components.<br>The default appears in install.cfg as:<br>`set irq 7` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| lcoff | The minimum necessary duration of loop current off before the voice board driver recognizes that the loop current is off.<br>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.<br>When 0, the voice board's default is used. The board default is infinite.<br>When -1, there is no wait.<br>The default appears in install.cfg as:<br>`set lcoff -1` |
| lcvalid | The length of time that the voice board driver ignores loop current transition events (on, off, and drop) after starting PCPM.<br>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.<br>When 0, the voice board's default is used. The board default is 10 ms (.01 second).<br>When -1, this option is disabled and no events are ignored.<br>The default appears in install.cfg as:<br>`set lcvalid 0` |
| lcwait | The minimum time after dialing a digit string before the voice board driver decides the loop current drop is an answer.<br>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.<br>When 0, the voice board's default is used. The board default is 10 ms (.01 second).<br>When -1, this option is disabled and there is no minimum time.<br>The default appears in install.cfg as:<br>`set lcwait 0` |
| list_delay | 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.<br>Number of tenths of a second. The default is 10 (which is 1 second). The range is 0 to 255.<br>The default appears in install.cfg as:<br>`set list_delay 10` |
| lognam | 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.<br>The default filename is 'AMANDA.LOG'.<br>**NOTE:** Since this file grows (slowly), archive or delete it once or twice a year when you perform preventative maintenance.<br>The default appears in install.cfg as:<br>`set lognam 'AMANDA.LOG'` |
| lpt_port | Number of the printer port to which a printer is attached to Amanda.<br>The default is 0, which means that no printer is attached.<br>While a printer can be attached to LPT ports 1, 2, or 3, use 1 for best results and attach the printer to LPT1.<br>If you use a non-zero value, but no printer is attached, Amanda halts.<br>See also auto_report and auto_report_time.<br>The default appears in install.cfg as:<br>`set lpt_port 0` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| max_dl_inits | The number of ports that can go off-hook simultaneously and dial the telephone switching system initialization code.<br>The range is from 1 to the number of ports defined for Amanda. The default is 2.<br>The PBX file option dl_init (What to dial on each port after the system starts) works on the ports specified here.<br>The default appears in install.cfg as:<br>`set max_dl_inits 2` |
| max_ports | Number of ports in use on the Amanda system. This option 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 option to 3 to ensure that Amanda does not try to use the fourth port.<br>The default is 8. The range is 1-8. 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.<br>The default appears in install.cfg as:<br>`set max_ports 8` |
| max_prompt | The number of times Amanda repeats menu options before hanging up on a user who is logged in to a mailbox.<br>Number from 1 to 9. The default is 2.<br>The default appears in install.cfg as:<br>`set max_prompt 2` |
| minmsg | 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.<br>Number of tenths of seconds. The default is 10 (1 sec.).The range is 0 to 65535.<br>The default appears in install.cfg as:<br>`set minmsg 10` |
| minoff | Minimum amount of time necessary for an inbound ring's off period.<br>Number of tenths of seconds. The default is 7 (.7 seconds). The range is 1-655.<br>The default appears in install.cfg as:<br>`set minoff 7` |
| minring | Minimum amount of time necessary for an inbound ring's on period.<br>Number of tenths of seconds.<br>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.<br>The default appears in install.cfg as:<br>`set minring 0` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| modified_call_ screening | When a mailbox has both call screening and called party identification on, this option 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.<br>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.<br>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.<br>True or False. The default is True.<br>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."<br>When False, the person who answers hears both the caller's name and company and the called party's name and extension recording.<br>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.<br>The caller enters 111 trying to reach John.<br>Amanda rings Extension 100 and Mary answers.<br>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.<br>**NOTE:** If a user wants Amanda to announce only the caller's name and company, ID Call? should be NO. |
| msg_log | Amanda creates the specified file in the C:\AMANDA directory and logs:<br>The date and time every message is received<br>The date and time every mailbox is checked for messages along with the DTMF the user entered.<br>The default is no filename, which means no log is written to. We recommend using 'MSG.LOG'.<br>See also user_log.<br>The default appears in install.cfg as:<br>`set msg_log ''` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| n_ochan | Allows you to dedicate port 1 to notification.<br>The number 1 or 0. The default is 0.<br>When 1, port 1 is dedicated and does not answer incoming calls. When using dedicated notification, be sure to direct incoming calls to port 2 and up. Dedicated notification eliminates the notification collision (known as glare) caused when Amanda inadvertently begins a notification on a port receiving an incoming call. However, you can no longer use the port for incoming calls.<br>When 0, Amanda does either roving or restricted notification (depending on the value of notify_restriction).<br>With roving notification, Amanda starts with the last port in the hunt group and works backwards until she locates an idle port.<br>Restricted notification uses only one port, usually the last port in the hunt group. However, that port is not dedicated to notification. The port can still receive calls.<br>**NOTE:** If a caller hears DTMF and then a hangup instead of the company greeting, a collision has occurred.<br>When n_ochan is set to 1, notify_restriction is ignored.<br>When using roving or restricted notification, program the ports to be in a linear hunt group (not a circular hunt group). In a linear hunt group, the first port always rings (unless it is busy), the second port rings only if the first is busy, and the third port rings only if the first and second ports are both busy. Then when Amanda's last port rings, all the other ports must be busy.<br>The default appears in install.cfg as:<br>`set n_ochan 0` |
| nam_maxlen | 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.<br>A number of seconds. The range is from 1 to 99. The default is 5.<br>See also box_idx and modified_call_screening.<br>The default appears in install.cfg as:<br>`set nam_maxlen 5` |
| new_send | Determines whether a user can send a message to more than one user, when those users are not part of a single list.<br>True or False. The default is True.<br>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.<br>When False, the user can send a message only to one mailbox or to a previously created list of mailboxes.<br>The default appears in install.cfg as:<br>`set new_send true` |
| non_relay_ok | Determines the result of pressing # during a greeting.<br>True or False. The default is False.<br>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.<br>When False, only ## ends the greeting, regardless of whether the mailbox has relay paging.<br>The default appears in install.cfg as:<br>`set non_relay_ok false` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| notify_restriction | If you specify a port, Amanda restricts notification to that port. However, the port still takes incoming calls.<br>Use any port number or 0. 4, the default, means that restricted notification uses port 4.<br>Restricted notification does not eliminate the possibility of notification collisions (known as glare).<br>If notify_restriction is set to an invalid value, Amanda detects that during startup, resets notify_restriction to the highest port number, and logs that fact. See also n_ochan.<br>The default appears in install.cfg as:<br>`set notify_restriction 4` |
| off_dly | Amount of time after a line goes off-hook before the voice board notifies Amanda that the line is off-hook.<br>Number of hundredths of seconds. The default is 50 (.5 sec.). The range is 1-6553. The numbers 0 and -1 have special meanings.<br>When 0, Amanda uses the voice board's default (which is also 50).<br>When -1, there is no delay.<br>The default appears in install.cfg as:<br>`set off_dly 50` |
| partial_q_ok | Determines what messages are saved when the Q() command is used to get answers from a caller.<br>True or False. The default is False.<br>When True, Amanda saves a message even if the caller hangs up before answering all the questions.<br>When False, Amanda does *not* save a message using the Q() command unless all the questions have been answered.<br>The default appears in install.cfg as:<br>`set partial_q_ok false` |
| password | 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.<br>Use a text string with a maximum length is 8 characters. The default is AMandA.<br>If you use the null string (that is, no password), you must use a dealer password to operate and shut down Amanda.<br>The default appears in install.cfg as:<br>`set password 'AMandA'` |
| play_from | When playing your messages, this option controls whether Amanda identifies the Amanda user who sent (or forwarded) each message.<br>True or False. The default is False.<br>When True, Amanda indicates who sent an internal message before she plays the message. She plays the name and extension recording for the sender (if it exists). She says the mailbox number (for example, mailbox 1-4-7) when there is no recording.<br>When False, Amanda only plays the message.<br>The default appears in install.cfg as:<br>`set play_from false` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| play_new_first | Determines what message is played next when the user has logged on to his mailbox to play messages.<br>True or False. The default is False.<br>When True, pressing 1 plays the next new message and pressing 75 plays the messages in order, regardless of whether they have been heard.<br>When False, pressing 1 plays the messages in order and pressing 75 plays the next new message.<br>See also urgent_to_front which affects the order of the mailbox's message.<br>The default appears in install.cfg as:<br>`set play_new_first false` |
| play_skip | The number of seconds to rewind or skip forward during message playback when a * (rewind) or # (skip forward) is pressed.<br>The range is from 1 to 99. The default is 5.<br>The default appears in install.cfg as:<br>`set play_skip 5` |
| please_hold | Controls the use of the "Please hold" prompt.<br>True or False. The default is True.<br>When True, Amanda says "Please hold while I try that extension" before transferring a caller.<br>When False, Amanda says nothing and immediately puts the caller on transfer hold.<br>The default appears in install.cfg as:<br>`set please_hold true` |
| product_activation_key | A number you receive from your Amanda Company sales representative to activate your system.<br>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.<br>The default is 0, which means there is no product activation key.<br>The default appears in install.cfg as:<br>`set product_activation_key 0` |
| prompt_file | Specifies the language that Amanda uses when a call first comes in on a given port.<br>ENGLISH or SPANISH. The default is ENGLISH.<br>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.<br>The ENGLISH.BDX file contains the English prompts. SPANISH.BDX is also available. Please contact your Amanda Marketing Partner, Solution Provider, or sales representative for more information and pricing.<br>The default appears in install.cfg as:<br>`set prompt_file 'ENGLISH'` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| purge | Controls how long messages that have been heard are stored before they are purged.<br>Number of days. The range is from 0 to 99. The default is 0.<br>If 0, no messages are purged.<br>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 purged when they exit message mode. This number is the number of heard messages that have been stored longer than the number of days you specify here.<br>**NOTE:** Once a message is purged, there is no way to retrieve it.<br>The default appears in install.cfg as:<br>`set purge 0` |
| ramdisk | Name of the ram drive (if any) used for temporary files.<br>The default is the C drive. The range is a single uppercase character from C to Z.<br>Before you change this make sure that you have set up a ram drive using the RAMDRIVE.SYS program from DOS.<br>The default appears in install.cfg as:<br>`set ramdisk 'C:'` |
| range1<br>range2<br>range3<br>range4 | 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 your Amanda Company sales representative.<br>You set this option to the first number in the mailbox range. This number must be a multiple of 10000.<br>The default is 10000 for range1, 20000 for range2, 30000 for range3, and 40000 for range4.<br>See also range1_key, range2_key, range3_key, and range4_key.<br>The defaults appear in install.cfg as:<br>`set range1 10000`<br>`set range2 20000`<br>`set range3 30000`<br>`set range4 40000` |
| range1_key<br>range2_key<br>range3_key<br>range4_key | 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.<br>Then, to activate that application, you set one of these options to the activation key (or range key) that allows Amanda to use those mailboxes. For more information, contact your Amanda Company sales representative.<br>The default is 0, which means there is no key.<br>See also range1, range2, range3, and range4, the options that you set to the first of the mailboxes that correspond to the range key.<br>The defaults appear in install.cfg as:<br>`set range1_key 0`<br>`set range2_key 0`<br>`set range3_key 0`<br>`set range4_key 0` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| record_beep | Controls the beep that the user or caller hears as the system begins recording.<br>True or False. The default is True.<br>When True, the system beeps as it begins to record.<br>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."<br>The default appears in install.cfg as:<br>`set record_beep true` |
| record_menu | Controls Amanda's use of prompts and menus before and after recordings.<br>True or False. The default is True.<br>When True, Amanda checks the values of begin_rec_prompt and end_rec_menu to determine what to say.<br>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. She also does not play the post-record menu that allows the caller or user to review and re-record.<br>The default appears in install.cfg as:<br>`set record_menu true` |
| rmt_rna | 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 option replaces the 0 and provides the number of remote rings that Amanda must hear before she decides that there is no answer.<br>The default is 4. The range is 1 to 9.<br>The default appears in install.cfg as:<br>`set rmt_rna 4` |
| screen_save | 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.<br>The default filename is SCREEN.OUT.<br>The default appears in install.cfg as:<br>`set screen_save 'screen.out'` |
| sec_code_display | Controls whether security codes are visible from the User screen.<br>True or False. The default is False.<br>When True, the security codes are visible.<br>When False, they are replaced by asterisks.<br>The default appears in install.cfg as:<br>`set sec_code_display false` |
| security_min_length | The minimum length of a user's security code (when changed by a user over the telephone). This does not affect the length of security codes that are entered from Amanda. The administrator can use any password of 8 or fewer characters.<br>A number from 1 to 8. The default is 1.<br>The default appears in install.cfg as:<br>`set security_min_length 1` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| short_direct_send | 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.<br>This option controls how Amanda identifies the user before the message is left. This confirms that the caller entered the mailbox that he intended to.<br>True or False. The default is False.<br>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.<br>When False, the caller hears the mailbox's current greeting (which can be skipped by pressing # twice).<br>The default appears in install.cfg as:<br>`set short_direct_send false` |
| shutdown | The day and time that Amanda performs her weekly automatic shutdown for disk maintenance and/or tape backup.<br>A day of the week followed by a space and a time of day. The default is '2 130' (Tuesday, at 1:30 a.m.).<br>For the day of the week, 0 means Sunday, 1 is Monday, ..., 6 is Saturday, and -1 is everyday.<br>The time is in the 24-hour format. For example, 9:30 p.m. is 2130 without the colon (:).<br>The default appears in install.cfg as:<br>`set shutdown '2 130'` |
| tape_length | When a user selects 1, 7, 8 (for continuous play) from the top level menu, this option 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.<br>Number of minutes from 1 to 99. The default is 30.<br>The default appears in install.cfg as:<br>`set tape_length 30` |
| timestamp_forwards | Controls the date and time given to a forwarded message.<br>True or False. The default is True.<br>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.<br>When False, the date and time tell when the message was first recorded.<br>The default appears in install.cfg as:<br>`set timestamp_forwards true` |
| tmo_blank | Controls how long Amanda waits after the last keystroke before blanking the Main screen (to prevent screen burn-in). Amanda blanks the screen only if the Main screen is displayed. A value of 0 stops Amanda from ever blanking the screen.<br>Number of minutes. The range is 0 to 99. The default is 5.<br>See also advertising.<br>The default appears in install.cfg as:<br>`set tmo_blank 5` |
| tmo_disk | Controls how often Amanda checks for low disk space. Amanda also checks for low disk space when she starts up.<br>Number of minutes. The range is 0 to 255. The default is 60.<br>See also diskwarn.<br>The default appears in install.cfg as:<br>`set tmo_disk 60` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| tmo_dtmf | 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.)<br>Number of tenths of seconds (from 1 to 255). The default is 12 (1.2 seconds).<br>The default appears in install.cfg as:<br>`set tmo_dtmf 12` |
| tmo_hold | 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.<br>Number of seconds. The default is 20. The range is 0 to 255.<br>**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.<br>The default appears in install.cfg as:<br>`set tmo_hold 20` |
| tmo_idle | Number of seconds of inactivity after which Amanda decides that the port is idle.<br>The default is 0. The range is 0-999.<br>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).<br>When 0, Amanda does not go off-hook and back on-hook if a port is idle.<br>The default appears in install.cfg as:<br>`set tmo_idle 0` |
| tmo_menu | The amount of time Amanda waits before repeating a menu when no selection is made.<br>Number of tenths of seconds from 1 to 99. The default is 20 (2.0 seconds).<br>The default appears in install.cfg as:<br>`set tmo_menu 20` |
| tmo_names | Determines how long Amanda waits between requests for names/extensions during the initialization process.<br>A number of tenths of a second. The default is 40 (4 seconds).<br>The default appears in install.cfg as:<br>`set tmo_names 40` |
| tmo_pickup | The minimum amount of time Amanda waits between an on-hook and off-hook event.<br>Number of tenths of seconds from 1 to 99. The default is 20 (2.0 seconds).<br>The default appears in install.cfg as:<br>`set tmo_pickup 20` |
| tmo_serial | Number of seconds to wait for a response from a peripheral device connected to one of Amanda's serial ports.<br>When communicating with peripheral devices through a serial port, Amanda needs a timeout value so she doesn't wait forever for a response.<br>Number of seconds from 1 to 999. The default is 2.<br>The default appears in install.cfg as:<br>`set tmo_serial 2` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| tmo_silence | The maximum seconds of silence before Amanda decides that the caller or user is finished recording a message or greeting.<br>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.<br>If the number is 0, Amanda does not use silence to determine completion.<br>Number of seconds from 0 to 255. The default is 5.<br>The default appears in install.cfg as:<br>`set tmo_silence 5` |
| tmo_sound | Because the Norstar KSU is a digital system, this option should be set to 0 so that Amanda does not use sound/dial tone to determine completion.<br>Number of seconds from 0 to 255. The default is 0. Do not change this option.<br>The default appears in install.cfg as:<br>`set tmo_sound 0` |
| tokens_available | 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.<br>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.<br>The default is 'GIJLMNOPQRSTUVW<>+-?=\|[]{^@'<br>The default appears in install.cfg as:<br>`set tokens_available 'GIJLMNOPQRSTUVW<>+-?=\|[]{^@'` |
| urgent_to_front | Controls the priority of urgent messages.<br>True or False. The default is True.<br>When True, Amanda places urgent messages in front of other messages (new and old) for a mailbox. The user cannot press 4 to wrap from the first to the last message. He must listen to the urgent messages first.<br>When False, urgent messages are mixed in with other messages in the order that they were received.<br>See also play_new_first.<br>The default appears in install.cfg as:<br>`set urgent_to_front true` |

# General Options (Continued)

| Configuration Option | Description |
|---|---|
| use_tutorial | Controls whether Amanda uses the tutorial for setting up mailboxes when users use the telephone user interface for the first time.<br>True or False. The default is True.<br>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.<br>When False, Amanda does not suggest that the user use the tutorial.<br>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.<br>The default appears in install.cfg as:<br>`set use_tutorial true` |
| user_log | If you provide a file name, Amanda creates that file and logs:<br>The date, time, and mailbox when any mailbox is accessed by DTMF. For example, whenever a caller enters a mailbox, that information is logged.<br>The file can be analyzed later for call distribution and access to mailboxes by date, day, and time.<br>The default is to not log data (because no file name is provided). We recommend using 'USER.LOG'.<br>See also msg_log.<br>The default appears in install.cfg as:<br>`set user_log ''` |

# Fax Options

| Configuration Option | Description |
|---|---|
| fax_direct_ connect | The string to send (after "AT") to the fax modem to make it connect to a *ringing* telephone, play the CNG tone, and send the fax. Use a maximum of 20 characters. This option defaults to 'H1O0' which some Zoom modems require.<br>**NOTE:** The value of H1O0 contains four distinct characters: alphabetic H, numeric one, alphabetic O, and numeric zero.<br>The default appears in install.cfg as:<br>`set fax_direct_connect 'H1O0'` |
| fax_dl_init | 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 option before she 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.<br>The default appears in install.cfg as:<br>`set fax_dl_init '9,'` |

# Fax Options (Continued)

| Configuration Option | Description |
|---|---|
| fax_flow_control | 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.<br>**For** **Use**<br>Rockwell-based fax modems &K3<br>Aceex modems \Q3 X3 &K3<br>Practical Peripherals modems X3 &K3<br>Zoom modems &K3<br>Smart One 1442 modems &K4<br>Boca modem M144EW &K3<br>The default appears in install.cfg as:<br>`set fax_flow_control '&K3'` |
| fax_id | Identifies your fax modem. Use the company name or the telephone number of your fax machine. Use a maximum of 20 characters.<br>By default, no identification is provided. When two faxes connect, they exchange and then display each other's identifying strings.<br>The default appears in install.cfg as:<br>`set fax_id ''` |
| fax_id_pad | 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.<br>True or False. The default is True, but if '1111' appears on the receiving fax machine, change this option to False (so no padding characters are added).<br>The default appears in install.cfg as:<br>`set fax_id_pad true` |
| fax_init | String sent to initialize a fax modem (give it a known starting state). The default is '&F0E0'. Use a maximum of 20 characters.<br>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.<br>The default appears in install.cfg as:<br>`set fax_init '&F0E0'` |
| fax_log | Use this option to log data about files (not messages) that are faxed. Amanda creates a log file in the C:\AMANDA directory and logs:<br>• The names of the files that were faxed<br>• The telephone numbers to which the files were sent<br>By default, no filename is used and no log is written. Use a maximum of 20 characters. We recommend using 'FAX.LOG'.<br>The default appears in install.cfg as:<br>set fax_log '' |
| fax_max_retries | 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).<br>The range is 0 to 9. The default is 1.<br>The default appears in install.cfg as:<br>`set fax_max_retries 1` |

# Fax Options (Continued)

| Configuration Option | Description |
|---|---|
| fax_receive_reverse | 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.<br>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.<br>The default appears in install.cfg as:<br>`set fax_receive_reverse true` |
| fax_receive_speed | The maximum speed for receiving faxes.<br>The value can be '0', '1', '3'. Use '0' for 2400 bps, '1' for 4800 bps, and '3' for 9600 bps.<br>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.<br>The default appears in install.cfg as:<br>`set fax_receive_speed '3'` |
| fax_requeue_ interval | Defines the number of minutes to wait between retries.<br>The range is 1 to 99. The default is 5.<br>See also max_retries.<br>The default appears in install.cfg as:<br>`set fax_requeue_interval 5` |
| fax_reset | 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.<br>Possible values: See your fax modem manual. Use a maximum of 20 characters.<br>The default appears in install.cfg as:<br>`set fax_reset '&D3'` |
| fax_send_reverse | True or False, depends solely on your Class 2 or Class 2.0 fax modem. For most fax modems, this option should be False.<br>The default appears in install.cfg as:<br>`set fax_send_reverse false` |
| fax_send_speed | The maximum speed that Amanda uses to send faxes.<br>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.<br>If you experience data loss on your faxes, lower this setting.<br>The default appears in install.cfg as:<br>`set fax_send_speed '3'` |
| fax_start_char | Controls whether the system waits for the start character or not.<br>True or False. The default is False.<br>When True, Amanda waits for the character.<br>When False, Amanda does not wait.<br>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.<br>The default appears in install.cfg as:<br>`set fax_start_char false` |

# Fax Options (Continued)

| Configuration Option | Description |
|---|---|
| fax1<br>fax2 | Use these options to define the station, or extension, number to which your fax modem is connected. For example, if the first fax modem is connected to extension 101, set fax1 to '101'.<br>By default, no extension is set for a fax modem. Use a maximum of 7 digits.<br>The defaults appear in install.cfg as:<br>`set fax`***n*** `''`<br>where ***n*** is logical serial port 1 or 2. See also serial_port*n*. |
| max_local_<br>extension | The maximum number of digits that can be considered an extension number.<br>The default number is 6. The range is 1 to 6.<br>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.<br>The default appears in install.cfg as:<br>`set max_local_extension 6` |

# Hot Box Options

| Configuration Option | Description |
|---|---|
| hot_box | Defines the mailboxes to which Amanda goes when she 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.<br>In most cases, only one hot_box is defined to detect fax tones and the remainder are unused.<br>You provide a mailbox next to the corresponding PCPM code (13 to 36). 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.<br>**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."<br>The defaults appear in install.cfg as:<br>`set hot_box -1 `***n***<br>where ***n*** is the PCPM code minus 12. (For example, for PCPM code 25, you use 25-12 or 13. The range for *n* is from 1 to 24.) |

# Outdial Options

| Configuration Option | Description |
|---|---|
| box_outdial | Controls special mailbox options.<br>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.<br>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.<br>The defaults appear in install.cfg as:<br>`set box_outdial -1 x`<br>where x is a digit from 0 to 9<br>**CAUTION:** If you use box_outdial to give users an outside line, you might want to use telephone lines that are toll restricted. |

# Per Port Options[1]

| Configuration Option | Description |
|---|---|
| box_grt | 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.<br>The defaults appear in install.cfg as:<br>`set box_grt 990 n`<br>where 990 is a mailbox and<br>where n is a port number from 1 to 8. |
| box_idx | 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 Dir Name 1 and Dir Name 2 fields.<br>The default is 411 for every port.<br>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.<br>**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.<br>The default appears in install.cfg as:<br>`set box_idx 411 n`<br>`where` 411 is a mailbox and<br>where n is a port number from 1 to 8. |
| box_snd | 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.<br>The default is 998 for all ports.<br>The default appears in install.cfg as:<br>`set box_snd 998 n`<br>`where` 998 is a mailbox and<br>where n is a port number from 1 to 8. |

# Per Port Options[1] (Continued)

| Configuration Option | Description |
|---|---|
| hangup_supervision | Allows you to use hangup supervision. This is set per Amanda telephone port.<br>True or False. The default is True.<br>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.<br>Use False if you notice call transfer problems such as disconnects during three-way conferences. However, if the problems persists, return to True.<br>The default appears in install.cfg as:<br>`set hangup_supervision true n`<br>where n is a port number from 1 to 8. |
| n_rings | 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 `n_rings 2 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.<br>The rings range from 0 to 9.<br>**NOTE:** There is a side-effect. When users want to pickup their messages, they must wait the specified number of rings before Amanda answers.<br>The default appears in install.cfg as:<br>`set n_rings 1  n`<br>where 1 is the number or rings and<br>where n is a port number from 1 to 8. |

[1] For reference purposes, the per port options 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.

# Serial Port Options

| Configuration Option | Description |
|---|---|
| baud1<br>baud2 | The bps (bits per second) for the logical serial port with the same number. For example, baud1 gives the bps for serial_port1. (Serial_port1 can be mapped to any COM port.)<br>Possible values: Any valid bps rate. The default is 19200.<br>The defaults appear in install.cfg as:<br>`set baud`***n*** `19200`<br>where ***n*** is the logical serial port 1 or 2. |
| databits1<br>databits2 | The number of data bits for the logical serial port with the same number. For example, databits1 gives the number of data bits for the COM port defined as serial_port1. (Serial_port1 can be mapped to any COM port.)<br>Possible values are 7 or 8. The default is 8.<br>The defaults appear in install.cfg as:<br>`set databits`***n*** `8`<br>where ***n*** is the logical serial port 1 or 2. |
| parity1<br>parity2 | The parity for the logical serial port with the same number. For example, parity1 gives the parity for serial_port1. (Serial_port1 can be mapped to any COM port.)<br>Possible values are none, even, odd, mark, or space. The default is none.<br>The defaults appear in install.cfg as:<br>`set parity`*n* `none`<br>where ***n*** is the logical serial port 1 or 2. |

# Serial Port Options (Continued)

| Configuration Option | Description |
|---|---|
| serial_port1<br>serial_port2 | To communicate with peripheral devices connected to COM/RS232 ports, Amanda needs to know which ports are connected.<br>This option 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).<br>Possible values are 0 through 4. The default is 0, which means that the port is not connected.<br>Only after this matching can Amanda communicate with devices, such as SMDI interfaces, connected to her COM ports. For example, `serial_port1 2` matches serial_port1 (Amanda's first logical serial port) to the physical COM port 2 of the PC. However, it is less confusing to use `serial_port1 1`, matching logical and physical ports with the same number.<br>The defaults appear in install.cfg as:<br>`set serial_port`***n*** `0`<br>where ***n*** is the logical serial port 1 or 2. |
| stopbits1<br>stopbits2 | The number of stop bits for the logical serial port with the same number. For example, stopbits1 gives the number of stop bits for serial_port1. (Serial_port1 can be mapped to any COM port.)<br>Possible values are 1 and 2. The default is 1.<br>The defaults appear in install.cfg as:<br>`set stopbits`***n*** `1`<br>where ***n*** is the logical serial port 1 or 2. |

# SMDI Options

| Configuration Option | Description |
|---|---|
| smdi_base_port | Use this option to identify Amanda's first voice mail port. On Norstar KSUs, the first voice mail port is identified by the number for the extension to which the port is connected. So, if the first voice mail port is connected to extension 241, then smdi_base_port would be 241, with every successive port having a sequential extension number.<br>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.<br>The default number is 241. The range is 0 to 32000.<br>The default appears in install.cfg as:<br>`set smdi_base_port 241` |
| smdi_type | Indicates the fact that the boards are being used with a Norstar KSU.<br>The default is 'NTEL'.<br>The default appears in install.cfg as:<br>`set smdi_type 'NTEL'` |

# Index


- token 98
**Symbols**
# 167
  end of DTMF entry 173
## 167
%A token 102
%B token 102
%C token 102
%D token 103
%E token 103, 147
%F token 103
%G token 104
%H token 104
%I token 105
%M() token 112
%N token 113
%P token 113
%R token 119
%T token 121
%U token 121, 147
%V token 122, 147
%W token 122
%X token 123
%Y token 123
%Z token 124
+() token 101
, token 98
.PBX files 43
<() token 101
=() token 102
>() token 102
?() token 98
@ token 98
[() token 99
\
  backslash keystroke 99
\A
  Ctrl+G keystroke 99
\B
  Ctrl+B keystroke 99
\N
  Ctrl+J keystroke (newline) 99
\R
  return keystroke (Ctrl+M) 99
\T
  tab keystroke (Ctrl+I) 99
]() token 100
^() token 100
{ } token 100
|() token 101
~ token 101
**Numerics**
0 59
1001.CPM 35
1001.GTD 35
1st Off Deviation
  tone definition fields 42
1st Off Time
  tone definition fields 42
1st On Deviation
  tone definition fields 42
1st On Time
  tone definition fields 41
2-digit extensions 43
2nd Off Deviation
  tone definition fields 42
2nd Off Time
  tone definition fields 42
2nd On Deviation
  tone definition fields 42
2nd On Time
  tone definition fields 42
3-digit extensions 43
411 59, 179
4-digit extensions 43
7-digit extensions 43
8 59
990 59
991 59
994 59
995 59
996 59
997 59
998 60
998 shortcut
  mailbox 59
999 60
**A**
abbreviate_dates 157
abbreviate_greeting 157
abbreviating
  dates 157
  system greeting 157
absolute value
  P() token 114
accessing
  Amanda remotely 73
  external lines 13
  mailboxes 109
activating
  Amanda 157, 169
  mailboxes 170
activation_key 157
active_hold 158
addressing
  Amanda Company voice boards for Norstar 153
adpcm_hq 158
adpcm_nq 158
adpcm_pq 158
advertising 158
alphabetical
  token list 98
Amanda
  accessed from another computer 73
  configuring 56
  protecting 10
  shutdown 55, 172
  shutting down 111
Amanda Company boards for Norstar
  IRQ 153
Amanda Company voice boards for Norstar
  accessing external lines 13
  addressing 153
  Analog Terminal Adapter 3
  background information 152
  cables 156
  configuring 153
  installation checklist 151
  installing 154
  IRQ 154

using with Norstar KSU and Amanda 151
Amanda Company voice boards for Norstar typical 4-board arrangement 153
Analog Terminal Adapter 3
ANI 104
character code 45
answering
beeps 160
answers
storing 118
applications
using mailboxes and tokens 170
asking
questions 118
assigning
variables 80, 102
ATA 3
attendant
automated 3
off-duty 3
primary 3
secondary 3
auto_queue 159
auto_report 159
auto_report_time 159
AUTOEXEC.BAT
load Host program 148
automated attendant 3
Automatic Number Identification 104

**B**

b
character code 45
baudn 180
beeps
connection 160
for recording 159
recording 171
begin_rec_prompt 159
blind transfers 146
boards
voice 101, 102
box_grt 59, 179
box_idx 59, 179
box_outdial 179
box_snd 60, 63, 179
bps 180
bps rates
modem 148
Brooktrout
voice board 175
busy
active hold 158
character code 45
no holding 160
time between transfer attempts 173
treated as Ring No Answer 160
Busy chain 147
busy extensions 159
busy message 146
volume 163
bypassing
security codes 109

**C**

c
character code 45
ca_file 159
ca_port 160
cables
Amanda Company voice boards for Norstar 156
connecting computers 75
call accounting 159, 160
call screening 166
disconnects 149
caller
character code 45
Caller ID 104
caller ID
character code 45
caller instructions
mailboxes 59
callers
still on line 162
calling
operator after message 162
calls
conferencing 110
not transferred 146
cancel_busy_hold 160
center
voice messaging 3
cfg_port 160
changing
records in files 113
volume 100
character codes
integration patterns 44
checking
disk space 172
clock_sync 160
clocks
synchronizing 160
cmt_maxlen 160
codes
character 44
PCPM 59, 164, 178
COM port
conflict 148
commands 81
Comment field 103
communications software 148
companies
sharing Amanda 61
company greetings
mailboxes 59
per port 64
comparing
mailbox security codes 108
values with tokens 106
conference calls 110
configuration
defining tone patterns 35
configuring
Amanda 56
Amanda Company voice boards for Norstar 153
incoming calls 56
language 57
messages 57
notification 57
passwords 57
printers 57
screen saver 57
shutdown 57
connect_tone 160
connecting
beeps 160
computers by cable 75
computers by modem 76
conventions iii
copyright ii
CPM 35
create_locked 161
creating
mailboxes 161
messages 110
Ctrl+B
\B token 99
Ctrl+G
\A token 99
Ctrl+I
\T token 99
Ctrl+J
\N token 99
Ctrl+M
\R token 99
custom busy message
volume 163
customer support 4

**D**

database records
locking 161
databitsn 180

date
forwarded messages 172
dates
%W token 122
%Y token 123
abbreviated 157
P() token 114
playing 114
said by Amanda 157
days of week
%W token 122
db_locking 161
dealer sales 4
defaults
guest mailboxes 163
mailboxes 58, 161
defaults_box 59, 161
defining
tone patterns 35
delay
after DTMF entry 173
between disk space checks 172
between DTMF tones 162
between menu repetitions 173
between messages when delivering list 164
between on-hook and off-hook events 173
end of recording detected 174
hold between transfer attempts 173
screen saver starts 172
waiting for peripheral 173
deleting
messages 108, 170
records from files 111
deliveries
in future 59
delivering
message in future 163
demonstration passwords 149
departments
sharing Amanda 61
detecting
fax machines automatically 69
Diag utility 35
Diagrams
Token Programming Example 128
dial tone
%X token 123
wait 123
when recording 174
digits
DTMF 102, 116, 162
Dir Name 1 field 103
Dir Name 2 field 103
direct dial
character code 45
direct messages 172, 179
direct messaging
mailbox 60
per port 63
directory
employee 179
disconnects
call screening 149
managing waiting calls 149
disk space
%D 103
checking 172
P() token 115
playing amount of 115
warning 161
diskwarn 161
displaying
security codes 171
trace information 79
distribution sales 4
dl_dtwait 146
dl_pickup
configuration setting for 161
dl_pickup_on_ring 161
dl_suffix 146
Do Not Disturb 146
documents
faxing 101, 102
dollars
P() token 114
DOS clock
synchronizing 160
DTMF
P() token 116
playing 116
saving caller's entry 119
time between tones 162
time tones played 162
DTMF digits 102, 116
DTMF entry
ending 173
dtmf_dly 162
dtmf_gate 162
dtmf_on 162
**E**
e
character code 45
Edge
tone definition fields 41
employee directories
mailboxes 59
per port 63
employee directory 179
end user
support 4
end_rec_menu 162
ending
DTMF entry 173
recording 174
English 169
Enter your security code prompt
heard by caller 148
Event
tone definition fields 41
exit_digit 162
exit_to_0 162
Extension fields
contents 103
normal processing 77, 98
programming more than one 78
extensions
busy 159
external lines
Amanda Company voice boards for Norstar 13
**F**
F token 103
failure
token execution 78
fax machines
detecting automatically 69
fax_direct_connect 175
fax_dl_init 102, 175
fax_flow_control 176
fax_id 176
fax_id_pad 176
fax_init 176
fax_log 176
fax_max_retries 176
fax_receive_reverse 177
fax_receive_speed 177
fax_requeue_interval 177
fax_reset 177
fax_send_reverse 177
fax_send_speed 177
fax_start_char 177
faxbacks 133
one-call 133
two-call 134
faxes 133
incoming 178
one-call faxbacks 133
sending 121
two-call faxbacks 134
faxing
accessing outside lines 102
files 101, 102
hot box mailboxes 70
hot boxes 70
to Amanda 133
faxn 178

fields 103
messages 105, 107
files 123, 124
appending 101
call accounting 159
deleting records 111
faxing 101, 102
modifying matching records 113
reading 99
reading tokens from 100
recording 110
retrieving values from fields 122
screen traces 171
system logs 164
temporary 170
trace 145
tracing tokens 79
voice 110, 117
writing 100, 101
First Use Questionnaire 47
francs
P() token 114
Freq1
tone definition fields 41
Freq2
tone definition fields 41
frequencies
playing 108
future
delivering messages 163
future delivery 59
mailbox 59
future_delivery 59, 163
**G**
G() token
go to mailbox 104
gain_loud 163
gain_norm 163
global 104
goto 104
greetings 146
bypassed by pressing # or ## 167
integrated calls 163
per port 179
playing 115
recording 162, 171
reviewing 162
sampling rates 158
GTD 35
guest_defaults 59, 163
guest_max 163
guest_min 163
guests
mailbox defaults 163
maximum mailbox 163
minimum mailbox 163
guide
purpose 4
guidelines, IVR 137
**H**
H token 104, 147
H() token 105
hang up
H 104, 105
mailbox 60
hanging up
on user 165
supervised 180
hangup_supervision 180
hangups
supervised 180
hardware interrupts 163
his 157
hold
active 158
disabled 160
please hold prompt 169
time between transfer attempts 173
HOLD.VOX
missing 173
hookflash 103, 146
host computers
setting up 74
Host program 148
HOST.COM 73
hot box 178
hot box mailboxes 70
hot boxes 70
hot_box 59, 178
**I**
i
character code 45
I() token 106
idle
ports 173
if statements 106
ignoring
loop current 164
immediate record
character code 45
incoming
faxes 178
incoming calls
configuring 56
information system 4
installation
support 5
installation checklist 7
Amanda Company voice boards for Norstar 151
installing
Amanda Company voice boards for Norstar 154
integration
greetings 163
integration patterns 147
2-digit extensions 43
3-digit extensions 43
4-digit extensions 43
7-digit extensions 43
character codes 44
integration_greeting 163
international sales 4
international support 4
interrupts
hardware 163
IRQ
Amanda Company boards for Norstar 153
Amanda Company voice boards for Norstar 154
problems 149
irq 163
IRQ conflict 148
IVR 168
IVR guidelines 137
IVR token 118
**J**
J() token 107
jumpers
Amanda Company voice boards for Norstar 154
**K**
K 107
KB() token 108
KC() token 108
KD() token 108
keys
activating Amanda 169
keys, activating Amanda 157
keys, activating range of mailboxes 170
KI() token 109
KJ() token 109
KL() token 109
KM token 110
KP() token 110
KR() token 110
KS() token 111

KV() token 111
**L**
L() token 111
language
configuring 57
prompts 169
languages
switching 111, 128
lcoff 164
lcvalid 164
lcwait 164
length
messages 165
Name and Extension recording 167
security codes 171
strings 112
letters
playing 115
LIGHT.ON 123, 124
lines
accessing telephone 102
reading from files 99
reading tokens from files 100
searching for 98
writing to files 100
lines of code 78
list comment
recording 160
list_delay 164
lists
token for sending messages to list of users 109
literals 79
locking
database records 161
log files 164
logging
mailbox information 175
mailboxes 166
messages 166
system information 164
logical
serial ports 181
lognam 164
loop current
drop 164
ignoring 164
off 164
lpt_port 164
LPT1 164
**M**
M() token 112
mailbox log 175
mailboxes
%U token 121
accessing 109
activating 170
bypassing a greeting 167
caller instructions 59
company greetings 59
created as read-only 161
default 58
default templates 161
deleting messages via tokens 108
direct messaging 60
employee directories 59
future delivery 59
guest default template 163
guest defaults 59
hang up 60, 105
hot box 59
hot boxes 70
logging information 175
maximum for guest 163
messages from other users 168
minimum for guest 163
operators 59
PCPM 59
playing messages 115
previous mailbox token 113
security codes 108
sending messages to 167
setting security codes 110
settings for token programming 78
templates 59
total messages 112, 115
managing waiting calls
disconnects 149
manual
purpose 4
Max Times
notification 147
max_dl_inits 165
max_local_extension 178
max_ports 165
max_prompt 165
maximum time
Name and Extension recording 167
recording a list comment 160
maximums
number of ports 165
menu
post-record 162
menus
port-recording 171
processing 112
recording 171
repeated 165
repeating 173
message log 166
messages
automatic deletion 170
configuring 57
continuous play time 172
creating via tokens 110
deleting 108, 170
delivered in future 59
delivery in future 163
direct 60, 172, 179
fields 105, 107
forwarding date/time 172
left by other users 168
log 166
minimum length 165
new 113
No Button Free 149
order 169
play new first 169
playing 115
purging 170
recording 162, 171
reviewing 162
rewind time 169
sampling rates 158
saving 165
sending 167
skip forward time 169
token for sending to list of users 109
total number per mailbox 112, 115
urgent 174
messages, storing voice responses 118, 168
messaging center 3
Method fields
normal processing 77
minimum length
security codes 171
minimum time
ignoring loop current 164
loop current drop 164
loop current off 164
messages 165
minimums
ring's off period 165
ring's on period 165
minmsg 165
minoff 165
minring 165
modems
bps rate 148
connecting computers 76

modified_call_screening 166
modifying
records in files 113
money
P() token 114
msg_log 166
**N**
N() token 113
n_ochan 167
n_rings 180
nam_maxlen 167
Name and Extension recording
P() token 116
new installation
configuring 56
new_send 167
newline 99
No Button Free message 149
Norstar
parameters 160, 173
Norstar features
Priority Call 146
Norstar KSU
using Amanda Company voice boards for Norstar and Amanda 151
notification
configuring 57
dedicated 167
Max Times 147
restricted 58, 168
telephone numbers 116
Type 147
notification records
canceling 108
Ring No Answer 171
Notify Max Times 147
Notify Method field
%V 117
%V token 122
normal processing 98
Notify Type 147
notify_restriction 168
NTEL
smdi_type 181
numbers
number of digits in 112
**O**
O() token 113
off
ring time 165
Off Deviation
tone definition fields 42
Off Time
tone definition fields 42
off_dly 168
off-duty attendant 3
off-hook 168, 173
on
ring time 165
On Deviation
tone definition fields 42
on hold 159
on hook token 113
On Time
tone definition fields 41
one-call faxbacks 133
on-hook 173
operator
after message 162
operators
mailboxes 59
options
special 179
orders
shipping 131
**P**
P() token
absolute value 114
dates 114
disk space 115
greeting 115
money 114
Name and Extension recording 116
play digits entered by caller 116
play digits in Variable field 117
play tones represented by number 116
play voice file 117
playing letters 115
playing messages 115
playing prompts 116
times 114
total messages 115
pager
problems with 147
wait 123
pager number
Method field 117, 122
paging
%R token 119
Method field 122
users 127
parityn 180
partial_q_ok 168
partially supervised transfers 147
password 168
passwords 171
configuring 57
demonstration passwords 149
patterns
integration 147
pause
half second 98
two-second 98
PBX files 43
PC clock
synchronizing 160
PCPM 164, 178
mailbox for 59
peripheral
waiting for 173
pesos
P() token 114
physical
serial ports 181
play_from 168
play_new_first 169
play_skip 169
playing
frequencies 108
greetings 115
messages 115
prompts 116
Variable field 117
please_hold 169
port
call accounting 160
resetting 145
SMDI 181
port variables 119
ports
bps 180
changing volume 100
COM1-COM4 181
company greetings 64
configuration port for NTEL 160
data bits 180
direct messaging 63, 179
employee directories 63
greetings 179
idle 173
in use 165
initial volume 163
lock up 146
LPT 164
maximum 165
no working 146
number 102
parity 180
printer 164
receiving strings 120
resetting 145
rings before answering 180

sending strings 120
simultaneously off-hook 165
stop bits 181
positive voice control 175
post-record menu 162, 171
power conditioning 10
primary attendant 3
printer
LPT port 164
printers
configuring 57
Priority Call feature 146
problems
demonstration password 149
IRQ 149
new 145
No Button Free 149
port lock up 146
ports not working 146
processing
menus 112
product_activation_key 169
programming
special options 179
programs
Host/Remote 148
prompt files 111
prompt_file 169
prompts
for recording 159
language 169
playing 116
recording 171
sampling rates 158
prompts, wrong one heard 148
protecting
Amanda 10
purge 170
purging
messages 170
purposes
Amanda 3

**Q**

Q() token 118
questionnaire
first use 47
standalone version 48
questions
asking 118

**R**

r
character code 45
R() token 119
ramdisk 170
rangex 170
rangex_key 170
reading
lines of files 99
tokens from files 100
read-only
mailboxes 161
receptionists
mailboxes 59
recognizing
loop current drop 164
loop current off 164
record
character code 45
record menu 171
record_beep 171
record_menu 171
recording
beeps 171
dial tone 174
files 110
greetings 162, 171
list comment 160
messages 110, 162, 171
silence 174
stop 162, 174
records
deleting from files 111
locking 161
modifying 113
retrieving values from fields 122
relay paging
%R token 119
remote access
Amanda 73
remote computers
setting up 75
Remote program 148
REMOTE.COM 73
repeating
menus 165, 173
Repetition Count
tone definition fields 42
reports
automatic 159
daily 159
requirements 1
resetting
port 145
restricted notification 58
results
variations in tones 42
retrieving
values from records 122
return
\R token 99
reviewing
greetings 162
messages 162
ring
off period 165
on period 165
Ring No Answer
notification records 171
ring-no-answer
character code 45
rings
before answering port 180
rmt_rna 171
RNA chain 147
RNA greeting
played for integrated call 163
rotary 159
running
Setup 55

**S**

s
character code 45
S() token 120
sales
dealers 4
distribution 4
international 4
sampling rates
greetings 158
incoming messages 158
prompts 158
saving
DTMF entered by caller 119
messages 165
screen output 171
screen blanker 158
screen output
tracing 171
screen saver 158
configuring 57
starting 172
screen_save 171
screening
callers 166
for caller 166
screening calls
disconnects 149
searching
line 98
strings 109
sec_code_display 171
secondary attendant 3
security codes
bypassing 109
comparing 108
displaying 171

minimum length 171
setting 110
security_min_length 171
sending
messages 167
serial ports
bps 180
COM1-COM4 181
data bits 180
parity 180
physical 181
receiving strings 120
sending strings 120
stop bits 181
serial_portn 181
service 4
setting up
host computers 74
remote computers 75
Setup
defining tone patterns 35
Setup utility 55
running 36, 55
sharing Amanda 61
shifting
port variables 107
shipping
orders 131
short_direct_send 172
shortening
system greeting 157
shutdown 172
Amanda 55
configuring 57
shutting down 172
Amanda 111
silence
when recording 174
SmartCall utility 35
SMDI
base port 181
type 181
smdi_base_port 181
smdi_type 181
SMDR 159, 160
space
%D token 103
P() token 115
warning 161
spaces
playing 115
Spanish 169
special
options 179
spelling
strings 115
standalone
questionnaire 48
starting
screen saver 172
stopbitsn 181
stopping
recording 162, 174
storing
answers 118
strings
contents 115
length 112
receiving from serial ports 120
searching 109
sending to serial ports 120
spelling 115
success
token execution 78
supervised transfer 103
please hold 169
supervised transfers 110, 146
supervising
hangups 180
support 4
end user 4
installation 5
international 4
system administration 5
Token Programming Language 5
switching
languages 128
synchronizing
DOS and PC clocks 160
system
log files 164
password 168
shutdown 55, 172
shutting down 111
voice processing 3
system administration
support 5
system greeting
played for integrated call 163
shortening 157
system integration patterns
character codes 44
system tone patterns
defining 35

**T**

t
character code 45
T() token 121
tab
\T token 99
tape_length 172
telephone number
Method field 117, 122
notification 116
templates
guest mailboxes 59, 163
mailboxes 59, 161
temporary
files 170
tenant services 43, 61
time
after DTMF entry 173
automatic reports 159
between disk space checks 172
between DTMF tones 162
between menu repetitions 173
between messages when delivering list 164
between on-hook and off-hook events 173
continuous message play 172
DTMF tones played 162
end of recording detected 174
forwarded messages 172
hold between transfer attempts 173
ignoring loop current 164
loop current drop 164
loop current off 164
messages 165
Name and Extension recording 167
port is idle 173
recording a list comment 160
rewinding 169
screen saver starts 172
skipping forward 169
storing messages 170
waiting for peripheral 173
timed break recall 101
timers
tmo_blank 172
tmo_disk 172
tmo_dtmf 173
tmo_idle 173
tmo_menu 173
tmo_names 173
tmo_pickup 173
tmo_serial 173
tmo_silence 174
tmo_sound 174
times
%T token 121
%Z token 124
P() token 114
playing 114

timestamp
forwarded messages 172
timestamp_forwards 172
tmo_blank 172
tmo_disk 172
tmo_dtmf 173
tmo_hold 173
tmo_idle 173
tmo_menu 173
tmo_names 173
tmo_pickup 173
tmo_serial 173
tmo_silence 174
tmo_sound 174
today 157
token
definition 77
token programming
mailbox settings 78
token failure 78
token success 78
Token Programming Language
support 5
Tokens
Token Programming Language 77
types of 79
tokens
application examples 127
if comparisons 106
listed alphabetically 98
listed by purpose 89
reference 89
tracing 79
troubleshooting 124
tokens_available 174
tone definition fields
1st Off Deviation 42
1st Off Time 42
1st On Deviation 42
1st On Time 41
2nd Off Deviation 42
2nd Off Time 42
2nd On Deviation 42
2nd On Time 42
Edge 41
Event 41
Freq1 41
Freq2 41
Off Deviation 42
Off Time 42
On Deviation 42
On Time 41
Repetition Count 42
Type 41
tone patterns
defining 35
running Diag 35
tones
DTMF 162
for recording 159
PCPM 59, 164, 178
saving caller's entry 119
variations 42
totals
messages 112, 115
new messages 113
trace files 145
tracing
on screen 79
screen output 171
tokens 79
trace files 79
trademarks ii
transfer hold
please hold 169
transferring
blind 146
busy-hold time 173
call 146
partially supervised 147
supervised 146
transfers
partially supervised 121
supervised 103, 110
troubleshooting
token programs 124
trunk
character code 45
two-call faxbacks 134
Type
notification 147
tone definition fields 41
type
SMDI 181
**U**
U token 121, 147
uninterrupted power supply 10
UPS 10
urgent messages 174
urgent_to_front 174
use_tutorial 175
user_log 175
users
messages for other users 168
paging 127
uses
Amanda 3
fraudulent iii
information system 4
off-duty attendant 3
primary attendant 3
secondary attendant 3
voice messaging center 3
utilities
Diag 35
Host/Remote 148
Setup 55
SmartCall 35
**V**
V() token 122
Variable field
playing 117
variables
assigning 80, 102
definition 80
global 104
port 119
reading from files 99
shifting 107
writing to files 100, 101
verifying
caller still on line 162
voice
wait 123
voice boards 101, 102
Brooktrout 175
jumpers for Amanda Company voice boards for Norstar 154
voice boards, not from The Amanda Company 157, 169
voice control 175
voice files 117
voice forms 118, 137, 168
voice mail
mailbox 59
voice messaging center 3
voice processing system 3
voice responses, storing 118, 168
volume
changing 100
custom busy message 163
initial 163
**W**
W token 147
W() token 123
wait
dial tone 123
pager answer 123
voice answer 123
waiting
for peripheral 173
warning
disk space 161
warranty ii
web site 4

wild card
character code 45
writing
lines of files 100, 101

**X**
x
character code 45
X() token 123

**Y**
Y() token 124
yesterday 157

**Z**
Z() token 124