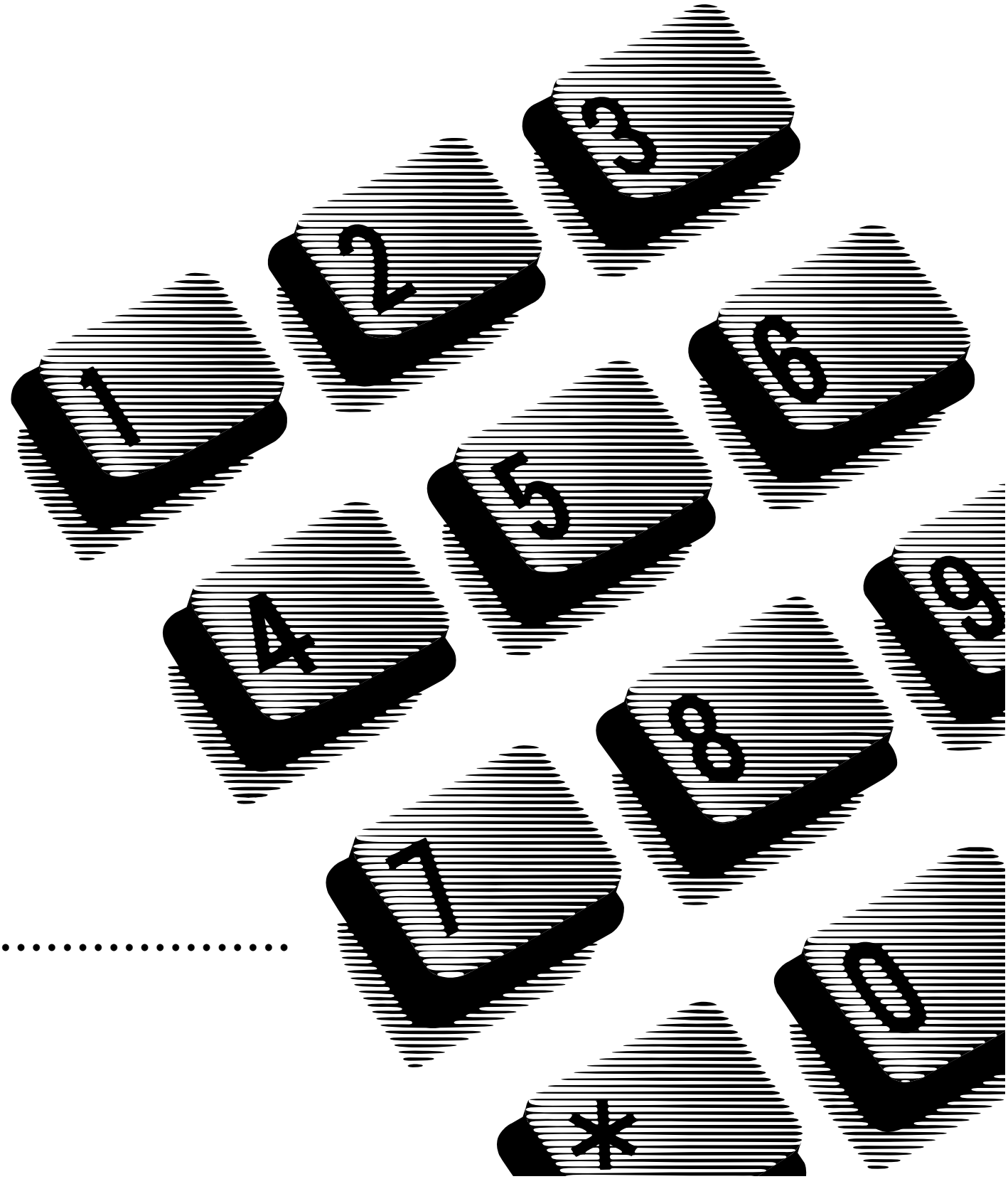
NORTEL NORSTAR

Norstar Voice Mail
Speech Recognition Automated Attendant
Set Up and Operation Guide



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Overview

Speech Recognition Automated Attendant consist of two features:

- Speech Recognition Automated Attendant - This feature gives outside callers the ability of directing their own calls by speaking the name of the person they want to reach.
- Voice Activated Dialing - The feature allows internal Norstar Voice Mail users the ability of directing their own calls by using the Company Directory and speaking the name of the person they want to reach.

How this guide is organized

This guide is intended to assist the System Coordinator with the set up of the Speech Recognition Automated Attendant and to serve as an ongoing reference aid.

The Speech Recognition Automated Attendant Set Up and Operation Guide is organized into the following sections:

Section	Topic(s)
Overview	Overview of Speech Recognition Automated Attendant features
Speech Recognition Automated Attendant features	Detailed description of the Speech Recognition Automated Attendant features
Setting up the Speech Recognition Automated Attendant	Description of procedures for setting up the Speech Recognition Automated Attendant from either the telephone set or Norstar Voice Mail Manager
Maintaining and optimizing the Speech Recognition Automated Attendant	Description of how to analyze usage reports

Speech Recognition Automated Attendant feature descriptions 2

Overview

This chapter describes:

- Automated Attendant Speech Recognition
- Voice Activated Dialing

Automated Attendant Speech Recognition voice prompts

The Speech Recognition Automated Attendant gives outside callers the ability of directing their own calls by speaking the name of the person they want to reach.

After the caller hears the company greeting, the Speech Recognition Automated Attendant main prompt is played immediately. The Speech Recognition Automated Attendant default main prompt is "*If you know the name of the department or person you wish to reach, say the name by clearly speaking into the phone now"*.

You can record your own customized Speech Recognition Automated Attendant main prompt. For example, *"Please speak the name of the person or department you want to contact. If you do not know the name of the person, say operator or press* [0] *and you will transferred to the company operator."*

After the Speech Recognition Automated Attendant main prompt plays, the system waits for the caller to speak a name. Callers can interrupt the prompt by speaking a name at any time while the prompt is playing.

If the Speech Recognition Automated Attendant has difficulity matching the spoken name, the caller is re-prompted to speak a name. The default repeat prompt is *"This is a Speech Recognition system. Following the tone, please say the name of the person you wish to reach or enter the extension, or press 0 to speak with an operator"*.

You can record your own customized Speech Recognition Automated Attendant repeat prompt. For example, "*Your call is being handled by our Speech Recognition system. Please say the employee's first and last name, or press* [#] *for more options*."

When the caller speaks a name, the Speech Recognition Automated Attendant attempts to match the spoken name with the spoken name from the Company Directory. The Speech Recognition Automated Attendant plays best match to the caller using the spoken name recorded in the Company Directory. After a match is found, the default confirmation prompt "*Did you say: <spoken name>?"* plays. You can record your own customized Speech Recognition Automated Attendant confirmation prompt. For example, *"Do you want to be transfered to <spoken name>?"*

The Speech Recognition Automated Attendant waits for a "yes" or "no" answer. If the caller says "yes", the caller is transferred to the appropriate extension or to a mailbox if the person does not have an extension. If the caller says "no", the Speech Recognition Automated Attendant prompts the caller for another name, except in the case of homonyms. For more information about homonyms, refer to Handling homonyms. Any names that have been previously declined are automatically eliminated before the system selects the next best match. The default decline prompt is "*Following the tone, please say the name of the person you wish to reach or enter the extension, or press 0 to speak with an operator"*. You can record your own customized Speech Recognition Automated Attendant declined prompt.

After the caller speaks the name again, the Speech Recognition Automated Attendant attempts to match spoken name with a spoken name from the Company Directory. If the second attempt by the caller does not result in a successful match, the system transfers the caller to either the Automated Attendant or to a Custom Call Routing (CCR) Tree, depending on your Norstar Voice Mail configuration.

Handling homonyms

People with identical sounding recorded names (John, Jon) in the Company Directory produce homonyms. If the Company Directory contains one or more homonyms for a spoken name, the Speech Recognition Automated Attendant proposes each homonym to the caller until a name is selected, or the list of homonyms is exhausted.

If the Speech Recognition Automated Attendant determines that there are too many homonyms to be presented to the caller, a message is played indicating that too many similar names have been found. The caller is then transferred to the Automated Attendant or to a Custom Call Routing (CCR) Tree, depending on your Norstar Voice Mail configuration.

While callers may be able to differentiate homonyms by the recorded voice names, users who have homonyms should include some additional identifying information when they record their name in the Company Directory. For example, "David Smith, Software Development". For more information refer to "Optimizing the Company Directory for use with the Speech Recognition Automated Attendant" on page 12 and "Creating a Speech Recognition Directory alias" on page 15.

Speech Recognition Automated Attendant interaction with the Automated Attendant or a Custom Call Routing (CCR) Tree

You can configure an existing Automated Attendant or Custom Call Routing (CCR) Tree to work with the Speech Recognition Automated Attendant. Callers can press the # key at any time to transfer out of Speech Recognition Automated Attendant and into the main menu of either the Automated Attendant or Custom Call Routing (CCR) Tree, depending on your Norstar Voice Mail configuration

You do not need to include any Automated Attendant-specific or Custom Call Routing (CCR)-specific instructions in the Speech Recognition Automated Attendant main prompt. However, you may want to record custom versions of your main greeting so that the voice matches other custom prompts and greetings. For more information, refer to *Norstar Voice Mail Set Up and Operation Guide*.

Speech Recognition Automated Attendant Interaction with Touchtone Greeting

The Speech Recognition Automated Attendant allows both rotary and touchtone callers the ability to route their own calls, rather than relying on the company operator.

When Speech Recognition Automated Attendant is enabled, the Touchtone Greeting feature should be disabled. For more information on disabling the Touchtone Greeting, refer to the *Norstar Voice Mail Set Up and Operation Guide*.

Voice Activated Dialing

Voice Activated Dialing allows Norstar Voice Mail users the ability of directing their own calls by using the Company Directory and speaking the name of the person they want to reach. The Voice Activated Dialing feature is accessed by pressing Feature 9 8 8 . Voice Activated Dialing can be accessed from any Norstar set, including analog sets attached via an Analog Terminal Adapter (ATA).

The Voice Activated Dialing feature performs similarly to the way the Speech Recognition Automated Attendant operates, with these differences:

- After the user presses Feature 9 8 8 , a tone is heard after which the user speaks the name of the person they want to contact. `No Matches found` is displayed when the user fails to provide a name, or provides an invalid name.
- When users are transferred out of Voice Activated Dialing, because there is no voice match or there is three errors, they are routed directly to the regular Company Directory.
- The DIR softkey or the # key can be used to transfer out of Voice Activated Dialing feature and into the regular Company Directory.
- The Voice Activated Dialing confirmation prompt plays only the recorded name back to the user.
- Users confirm a voice match by pressing OK or the # key rather than saying “yes”. If the user does not confirm the voice match within three seconds, the Voice Activated Dialing proceeds as if OK was pressed. Users decline the voice match by pressing RETRY or the * key. After a selection is declined, Voice Activated Dialing presents the next homonym (if there is one) or re-prompts the user to say the name again.

Setting up the Speech Recognition Automated Attendant

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Programming overview

The Speech Recognition Automated Attendant must be set up by using Norstar Voice Mail Manager.

Note: In order to record voice prompts or greetings using Norstar Voice Mail Manager, the PC must have voice recording capabilities. If the PC running Norstar Voice Mail Manager does not have voice recording capabilities, you can record customized voice prompts and greetings from a Norstar two-line telephone.

A Norstar two-line telephone can be used to set up the following Speech Recognition Automated Attendant features:

- Enabling or disabling the Voice Activated Dialing feature
- Enabling or disabling the Speech Recognition Automated Attendant per Greeting Table
- Customizing the Speech Recognition Automated Attendant voice prompts and greetings

Any other Speech Recognition Automated Attendant programming must be done by using Norstar Voice Mail Manager

Setting up the Speech Recognition Automated Attendant using Norstar Voice Mail Manager

The Speech Recognition Automated Attendant features must be configured by using Norstar Voice Mail Manager. Norstar Voice Mail Manager must be installed on a PC and the PC must be connected to the Norstar Applications Module (NAM) via a dial up connection or connected to the same TCP/IP network as the NAM. For more information on installing Norstar Voice Mail Manager client software, refer to the *Norstar Voice Mail Set Up and Operation Guide*.

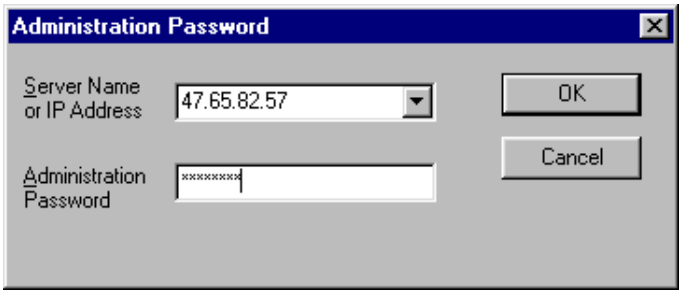
Starting the Norstar Voice Mail Manager client software

To start the Norstar Voice Mail Manager client software:

1. Select **Programs** from the Windows **Start** menu.

2. Point to the **Norstar Voice Mail Manager** program icon and in the sub-menu click on **Norstar Voice Mail Manager**.

3. The **Administration Password** screen appears.
   The information that appears in the screen below is an example.



4. Enter your Norstar Voice Mail Server Name or IP Address.

5. Enter your System Coordinator Mailbox number and password combination and click **OK**.

6. The **NVM Manager** screen appears.

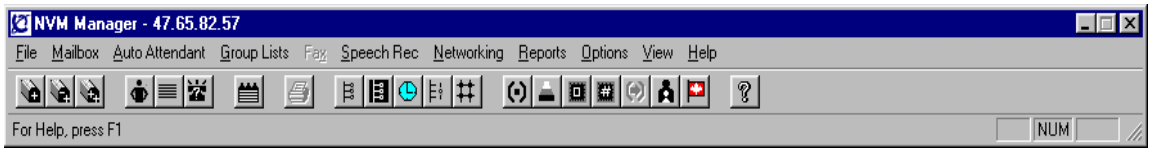


Figure 1 Speech Rec Menu Options

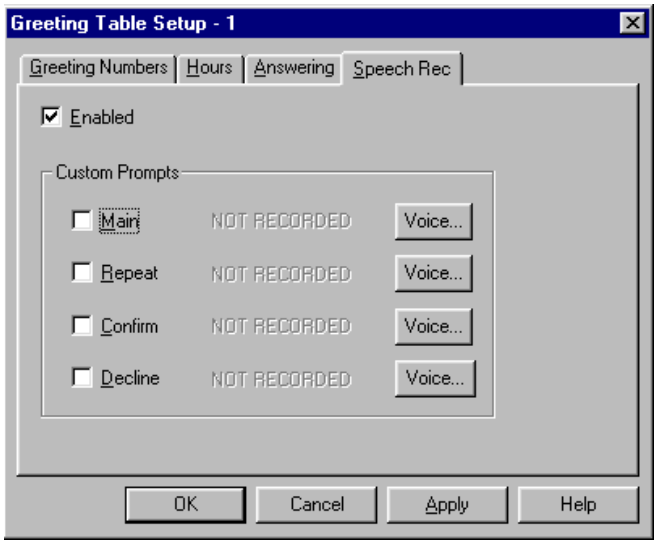
The Norstar Voice Mail Manager **Speech Rec** main menu provides three options:

- **Directory** - Which allows you to control how mailboxes are accessed via Speech Recognition Automated Attendant. For more information, refer to "Creating a Speech Recognition Directory alias" on page 15.
- **Greeting Table** - Which allows you to enable the Speech Recognition Automated Attendant feature for a Greeting Table(s). Also, from the Greeting Table menu you can record the custom prompts. For more information, refer to Customizing the Speech Recognition Automated Attendant voice prompt and greetings below.
- **Internal Name Dialing** - Which allows you to enable or disable the Voice Activated Dialing.

Enabling the Speech Recognition Automated Attendant

1. Click on the **Greeting Table** sub-menu from the Speech Rec main menu.

2. Select the number of the Greeting Table you want to enable the Speech Recognition Automated Attendant on. The corresponding **Greeting Table Setup** window appears. The screen below is an example.



3. Select the **Enabled** checkbox.

4. Click on the **OK** button.

The Speech Recognition Automated Attendant is now enabled.

If you want to assign the Speech Recognition Automated Attendant to other Greeting Tables, repeat these steps.

Customizing the Speech Recognition Automated Attendant voice prompt and greetings

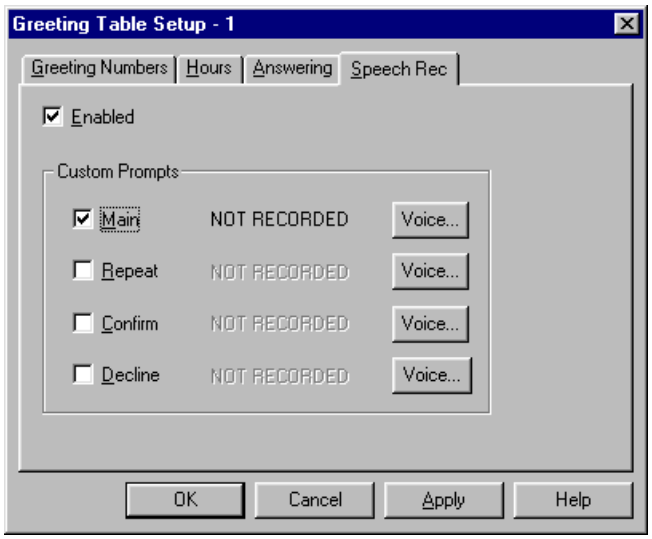
The Speech Recognition Automated Attendant is equipped with default voice prompts for the Main, Repeat, Confirm and Decline prompts. After the Speech Recognition Automated Attendant is enabled, the default voice prompts play automatically.

You can customize any of the Speech Recognition Automated Attendant voice prompts. For more information on the default voice propmts, refer to "Automated Attendant Speech Recognition voice prompts" on page 3.

To customize an Speech Recognition Automated Attendant voice prompt:

1. Select **Greeting Table** from the Speech Rec main menu.

2. Select the number of the Greeting Table that you want to customize the Speech Recognition Automated Attendant prompts. The corresponding Greeting Table Setup window appears. The screen below is an example.



3. Click on the checkbox of the Speech Recognition Automated Attendant voice prompt you want to customize.

4. Click on the **Voice** button.

Note: In order to record voice prompts using Norstar Voice Mail Manager, the PC must have voice recording capabilities. If the PC running Norstar Voice Mail Manager does not have voice recording capabilities, you can record customized voice prompts and greetings from a Norstar two-line telephone.

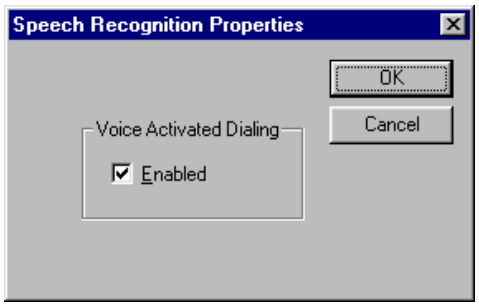
5. Record the custom prompt. The status of the customized voice prompt changes to RECORDED.

6. After you have finished recording the custom prompts, click on **OK** to close the Greeting Table Setup window.

Enabling the Voice Activated Dialing feature

Before Norstar Voice Mail users can use Feature 9 8 8 , you must enable the Voice Activated Dialing feature.

1. Select the **Internal Name Dialing** from the **Speech Rec** menu.The Speech Recognition Properties window appears.



2. Click on the **Enabled** checkbox to enable Voice Activated Dialing.

3. Click on the **OK** button to close the Speech Recognition Properties window.

Optimizing the Company Directory for use with the Speech Recognition Automated Attendant

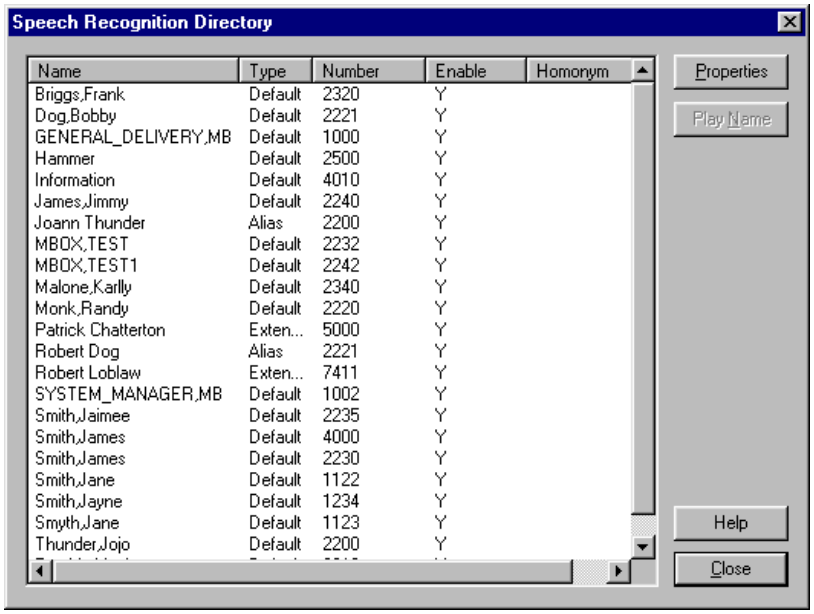
The Speech Recognition Automated Attendant can operate without any special configuration. However, to maximize the number of accurate name matches, you should scan the **Speech Recognition Directory** for:

- Entries without a recorded name
  Entries without a recorded name cannot be accessed by the Speech Recognition Automated Attendant. If a mailbox is uninitialized, contact the user and request that they initialize their mailbox and record their name in the Company Directory.
- Names using initials or incomplete names
  You must modify these types of entries. For more information, refer to "Creating a Speech Recognition Automated Attendant Directory extended name" on page 14.
- Entries marked as homonyms
  Encourage these users to record identifying information, such as their department name, in their recorded names. Select **Play Name** from the **Speech Recognition Directory** to determine if the spoken name is adequate. If the spoken name is not adequate, you may need to add an alias entry. For more information on adding an alias, refer to "Creating a Speech Recognition Directory alias" on page 15.
- Names that do not follow conventional pronunciation rules
  If names do not follow conventional pronunciation rules, you must add an Extended Name to match the actual pronunciation. For more information, refer to "Creating a Speech Recognition Directory alias" on page 15.
- Users who need to be accessed by their role or other identifying information
  If a user needs to be accessed by their role, such as the operator, you must set up an alias for these mailboxes. For more information, refer to "Creating a Speech Recognition Directory alias" on page 15.

Reviewing the Speech Recognition Automated Attendant Directory

The Speech Recognition Automated Attendant Directory lists the names of the Norstar Voice Mail users that are accessible through the Speech Recognition Automated Attendant feature.The Speech Recognition Automated Attendant Directory can have a maximum of 500 entries.

Figure 2 Speech Recognition Automated Attendant Directory



The Speech Recognition Directory has five fields:

- **Name** - Is the first and last name of all the Norstar Voice Mail users. The names are used for Speech Recognition Automated Attendant name matching. The names are taken from the names assigned to the user mailboxes when they were created.
- **Type** - Is the type of mailbox. The mailbox types can be Default, Extended or Alias. The type is assigned as “Default” when a mailbox is created. You can assign “Extended” or “Alias” as a type to special names you create for the Speech Recognition Automated Attendant Directory.
- **Number** - Is the user’s mailbox number. A mailbox number normally appears only once in the list, but appears a second time if you have defined an alias for this mailbox user. For example, Patrick Chatterton, mailbox 5813 will appear in the Speech Recognition Automated Attendant Directory. If you decide to make an alias for Patrick, “Pat Chatterton, mailbox 5813” will also appear in the Speech Recognition Directory.
- **Enable** - The letter Y indicates that the name is included in the Speech Recognition Automated Attendant Directory and available to callers.
- **Homonym** - The letter Y indicates that this name is identified as a homonym. Homonyms require extra set up steps to ensure the user’s name can be found in the Speech Recognition Automated Attendant Directory. For more information on creating an alias, refer to "Creating a Speech Recognition Directory alias" on page 15.

By default the Speech Recognition Automated Attendant Directory is sorted by the Name. You can sort the Speech Recognition Automated Attendant Directory by any other field, by clicking the mouse on the field column title.

The **Properties** button takes you to the Mailbox Administration window. After changes have been made to mailbox, the Speech Recognition Automated Attendant Directory is updated to reflect the changes.

The **Play Name** button plays the spoken name of the mailbox user. An error dialog appears if no spoken name is recorded. A spoken name will not be played if the mailbox is uninitialized. Click on the **Play Name** button to determine if the spoken name is accurate, especially in the case of homonyms and aliases.

Creating a Speech Recognition Automated Attendant Directory extended name

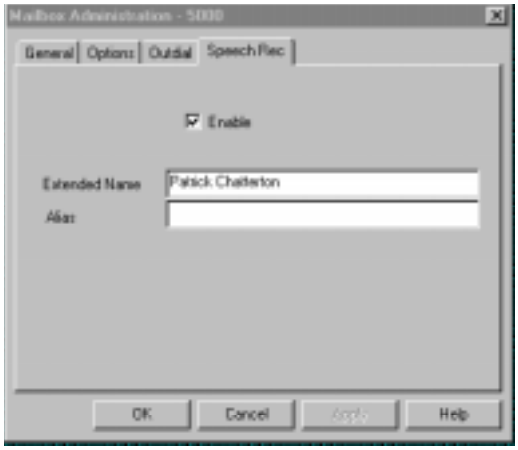
In most cases, the 16-character text name that appears on the Norstar telephone display is enough to identify a user. However, you may need to add more characters to the name for accurate matching by the Speech Recognition Automated Attendant.

The **Extended Name** field is optional. If an Extended Name is not entered, the Speech Recognition Automated Attendant Directory is generated using the standard Norstar Voice Mail display text name. When an Extended Name is entered, the Extended Name overides the standard Norstar Voice Mail display text name.

To create a Speech Recognition Directory extended name:

1. Select a mailbox from the **Speech Recognition Directory**.

2. Click on the **Properties** button.The Mailbox Administration window appears.



3. Enter the full name of the user in the **Extended Name** field. The Extended Name can be a maximum of 40 characters.

4. Click on the **OK** button to close the Mailbox Administration window.

Note: When the Speech Recognition Directory list is updated, the standard name is replaced with the extended name and the Type field changes from "Default" to "Extended". The Type field applies to any mailbox that can be accessed by an outside caller (Subscriber, Information, and Fax-On-Demand mailboxes). It does not include Fax Overflow or Network Delivery mailboxes.

Creating a Speech Recognition Directory alias

Providing an alias (alternate name) for a Speech Recognition Automated Attendant entry improves the likelihood that a caller will be able to match their request. Creating an alias is optional.

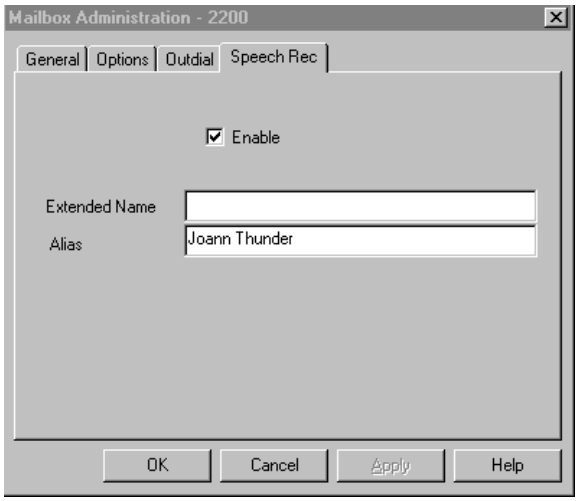
You should add an alias to the Speech Recognition Automated Attendant Directory if:

- the user is usually referred to by a nickname or initials
- the spelling and/or pronunciation of the name do not follow normal language conventions. Change the spelling of the name to better reflect the pronunciation and to produce better matching.
- the person needs to be accessible using a role or other name in addition to a personal name. Encourage the user to rerecord their name, adding the required information such as their role. For example, David Smith, Software Development.

To create a Speech Recognition Directory alias:

1. Select the mailbox from the **Speech Recognition Directory**.

2. Click on the **Properties** button.The Mailbox Administration window appears.



3. Enter the alias for the user in the **Alias** field. The alias can be a maximum of 40 characters.

4. Click on the **OK** button to close the Mailbox Administration window.

Note: When the Speech Recognition Automated Attendant Directory is updated, a new entry is added with the type identified as “Alias”.

Maximum Speech Recognition Directory entries

The Speech Recognition Automated Attendant Directory can have a maximum of 500 combined names and aliases. If more than 500 entries are registered in the Speech Recognition Directory, Norstar Voice Mail disables the Internal and Speech Recognition Automated Attendant features, and sends an error message to the System Coordinator mailbox (an error message also appears when you login to Norstar Voice Mail Manager).

You must delete some Speech Recognition Automated Attendant Directory aliases or exclude some users from the Company Directory before the Speech Recognition Automated Attendant can re-enabled.

To delete a speech recognition alias:

1. Select the mailbox from the **Speech Recognition Directory**.

2. Click on the **Properties** button.

3. Delete the text from the **Alias** field.

4. Select **OK** to close the Mailbox Administration window.

To remove a Speech Recognition Automated Attendant Directory entry:

1. Select the mailbox from the **Speech Recognition Directory**.

2. Click on the **Properties** button.

3. Deselect the **Enable** checkbox.

4. Select **OK** to close the Mailbox Administration window.

Note: You can also use these steps for users who do not want to be accessible through the Speech Recognition Automated Attendant. After the entry is removed from the Speech Recognition Automated Attendant Directory, it is unavailable for either Speech Recognition Automated Attendant or Voice Activated Dialing transfers.

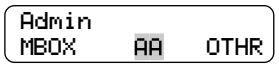
Programming the Speech Recognition Automated Attendant from a Norstar telephone

From a Norstar two-line telephone you can enable the Speech Recognition Automated Attendant and customize voice prompts and greetings. Any other Speech Recognition Automated Attendant programming must be done by using Norstar Voice Mail Manager.

Enabling the Voice Activated Dialing feature

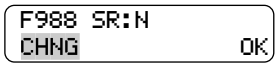
1. Press Feature 9 8 3 .

2. Enter the System Coordinator Mailbox number and password, then press OK .



3. Press AA .

4. Press 2 .



5. Press CHNG to enable Internal Speech Recognition.
   Press OK to return to Automated Attendant Administration.

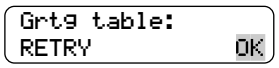
Enabling the Speech Recognition Automated Attendant and customizing the voice prompts and greetings

1. Press Feature 9 8 3 .

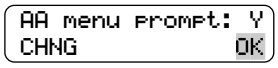
2. Enter the System Coordinator Mailbox number and password, then press OK .

3. Press AA .

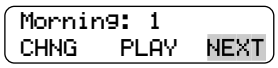
4. Press TABLE .



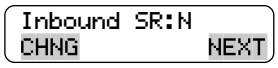
5. Enter the Greeting Table number and press OK.



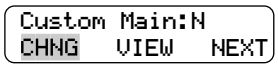
6. Press CHNG to customize the Automated Attendant Main prompt or press OK to continue.



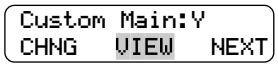
7. Press NEXT until the display shows:



8. Press CHNG to enable the Speech Recognition Automated Attendant and then press NEXT to customize the Speech Recognition Automated Attendant voice prompts.

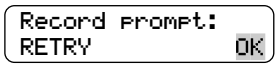


9. Press CHNG to customize the Speech Recognition Automated Attendant Main prompt. Press NEXT to proceed to the next Speech Recognition Automated Attendant.

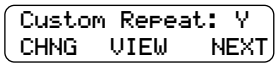


10. Press VIEW .

11. Press REC . At the tone record the new Speech Recognition Automated Attendant Main prompt. Press # to end you recording



12. Press OK to accept the recording. Press RETRY to re-record the prompt.



13. Repeat steps 9 to 12 to customize the Repeat, Confirm and Decline Speech Recognition Automated Attendant prompts.

Testing the Speech Recognition Automated Attendant

After you have programmed the Speech Recognition Directory, use Voice Activated Dialing Feature 9 8 8 to place a test call to each user listed in the Company Directory. This should isolate any problems with incomplete or incorrect names.

Maintaining and optimizing the Speech Recognition Automated Attendant 4

This chapter will assist you in maintaining and optimizing the Speech Recognition Automated Attendant features.

Maintaining the Speech Recognition Automated Attendant

The Speech recognition usage report gives you valuable information on the performance of the Speech Recognition Automated Attendant. Access the usage report by selecting **Speech Recognition** from the NVM Manager **Reports** menu. The report appears in a new Notepad window.

Speech recognition usage report

The report consists of two sections:

- part 1 summarizes speech recognition channel usage, on a 7-day rolling basis.
- part 2 shows performance information for each of the Automated Attendant applications.

Use the usage report as a diagnostic tool if you receive complaints from users, or whenever you suspect that a performance or availability problem may exist.

Analyzing part 1

The report shows the number of Voice Channels allocated to Speech Recognition and the percentage of the time when all Channels were busy for the last seven days. Statistics for the most recent complete day are shown in the rightmost column.

Use Part 1 to identify the volume and sources of traffic using speech recognition resources, and to determine if more channels are needed. If the value consistently indicates 100% usage, you should probably add more Speech Channels.

Two additional Speech Channels can be added by enabling the Speech Recognition 2 to 4 Channel Upgrade Security Key Code. The Speech Recognition Automated Attendant can have a maximum of four Speech Channels.

For more information about enabling more Speech Channels for the Speech Recognition Automated Attendant, talk to your sales representative.

Table 1 Speech Recognition Usage Report (Part 1

SPEECH RECOGNIZER USAGE REPORT					**Date: yyyy/mm/dd**		
Channels: nn							
% Time All Channels Busy		(*) Denotes Feature Disabled					
Period Start	Tue	Wed	Thu	Fri	Sat	Sun	Mon
12:00 am	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
12:30 am	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
1:00 am	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
1:30 am	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
2:00 am	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
2:30 am	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
3:00 am	nnn.n%	nnn.n%	nnn.n%*	nnn.n%	nnn.n%	nnn.n%	nnn.n%
3:30 am	nnn.n%	nnn.n%	nnn.n%*	nnn.n%	nnn.n%	nnn.n%	nnn.n%
4:00 am	nnn.n%	nnn.n%	nnn.n%*	nnn.n%	nnn.n%	nnn.n%	nnn.n%
.							
.							
.							
10:30 pm	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
11:00 pm	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%
11:30 pm	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%	nnn.n%

Periods of time when the Speech Recognition Automated Attendant was disabled are flagged with an asterisk (*). All days are shown even if no data was collected. These values appear as zeroes. The report does not indicate if traffic is lost or how many calls are dropped.

Analyzing part 2

Use Part 2 of the report to gauge the success of the Speech Recognition Automated Attendant and to detect possible usage problems.

Figure 3 Speech Recognizer Usage Report (Part 2

SPEECH RECOGNIZER USAGE REPORT		Date: yyyy/mm/dd		
Call Summary	AA	(%)	F988	(%)
Resource Not Available:	nnnnnn	nnn.n	nnnnnn	nnn.n
Initial Disconnect:	nnnnnn	nnnnnn	nnnnnn	nnn.n
DTMF Received:	nnnnnn	nnnnnn	nnnnnn	nnn.n
Speech Input:	nnnnnn	nnnnnn	nnnnnn	nnn.n
Total Attempts:	nnnnnn	100.0	nnnnnn	100.0
Average Hold Time (secs):	nnn.n		nnn.n	
Recognizer Outcomes	AA	(%)	F988	(%)
Success on 1st attempt:	nnnnnn	nnn.n	nnnnnn	nnn.n
Success on 2 or more:	nnnnnn	nnn.n	nnnnnn	nnn.n
Transfer on No Match:	nnnnnn	nnn.n	nnnnnn	nnn.n
Transfer on Non-Response:	nnnnnn	nnn.n	nnnnnn	nnn.n
Transfer on Multi-Homonyms:	nnnnnn	nnn.n	nnnnnn	nnn.n
Transfer on System Problem:	nnnnnn	nnn.n	nnnnnn	nnn.n
User Disconnect:	nnnnnn	nnn.n	nnnnnn	nnn.n
User Transfer:	nnnnnn	nnn.n	nnnnnn	nnn.n
Total Serviced Calls	nnnnnn	100.0	nnnnnn	100.0

The Call Summary section provides overall statistics on the incoming calls during the reporting period. Each statistic is shown as an absolute number of calls, and as a percentage of the total calls for both the Speech Recognition Automated Attendant and the Voice Activated Dialing feature.

Calls are categorized as one of:

- **Resource Not Available** - The Speech Recognition Automated Attendant attempted to handle the call, but the feature was not available. If this field consistently displays a significant percentage, there may be a problem with the Speech Recognition Automated Attendant configuration.
- **Initial Disconnect** - The user disconnected during the first speech input window, or during the prompt that preceded it. This value may provide a measure of customer dissatisfaction with the service.
- **DTMF Received** - DTMF was received during the first speech input window, or during the prompt that preceded it. This is interpreted as a user request to bypass the feature.

- **Speech Input** - Speech input was received. These calls are broken out in the Recognizer Outcomes section of the report.
- **Total Attempts** - The total of the above. (If the total call count is zero, the percentage is also zero).
- **Average Hold Time** - The average number of seconds that the caller spends in the Speech Recognition Automated Attendant. This figure may be useful for resource planning.

The Recognizer Outcomes section provides more details for calls involving speech input. Each statistic is expressed as both an absolute number of calls, and as a percentage of speech input calls, for both Speech Recognition Automated Attendant and the Voice Activated Dialing feature.

Calls are categorized as one of:

- **Success on 1st attempt** - The user confirmed the offered selection on the first attempt.
- **Success on 2 or more** - The user confirmed the offered selection on the second or greater attempts.
- **Transfer on No Match** - The user was transferred out of the Speech Recognition Automated Attendant by rejecting the third offered match.
- **Transfer on Non-Response** - The user was transferred out of the Speech Recognition Automated Attendant by failing to respond for the third time.
- **Transfer on Multi-Homonyms** - The user was transferred out of the Speech Recognition Automated Attendant by supplying input with too many similar names.
- **Transfer on System Problem** - The user was transferred out of the application due to a system problem.
- **User Disconnect** - The user disconnected after providing speech input.
- **User Transfer** - The user was transferred to an extension or mailbox.
- **Total Serviced Calls** - The total of the above.

Optimizing the Speech Recognition Automated Attendant

The Speech Recognition Automated Attendant is highly accurate; however, some problems can cause the recognition to be less accurate than it should be.

If you find that the Speech Recognition Automated Attendant is not recognizing certain user names, follow the suggestions for optimizing the Speech Recognition Directory described below to identify and correct the problems.

Recognition problems can have more than one cause. Please follow the suggestions in the order provided.

1. Has a mailbox been created for the user? For information on creating mailboxes, refer to the *Norstar Voice Mail Set Up and Operation Guide*.

2. Has the user initialized their mailbox and recorded their name in the Company Directory? Ask the user to initialize their mailbox.

3. Are the mailbox names in a form that the Speech Recognition Automated Attendant can easily recognize? When adding names to your list of mailboxes, follow these principles:

   - Avoid short names whenever possible. Use the full name of the user instead of a short form of the name. For example, instead of using Mike and Mick, use Michael and Mickey.
   - Include the first and last name of the user. The voice prompts direct callers to speak the full name of the person.
   - Avoid similar sounding names, or try adding a descriptive name to differentiate between similar names.

4. Do you use characters that are not appropriate for English in your user names? Do not include Cyrillic, Greek, or Chinese characters in your Speech Recognition Directory.

5. Do you use hyphens or apostrophes that would affect the pronunciation of a word? Speech Recognition Automated Attendant user names are subject to the following set of grammar rules.

   - Use the only following characters only: “a” to “z”, “A” to “Z”, “0” to “9”, “-” (hyphen), “‘” (apostrophe) or “ ” (space).
   - Hyphens are generally treated as spaces.
   - For nicknames composed of letters (e.g O.J. or J.C.), do not squeeze the letters together (e.g. OJ) but make sure to put a space (to get pronunciation “Oh Jay” instead of “Awdje”).
   - Apostrophes are treated as blanks.For example, Sam's is treated as Sams (and not Sam s). All other characters are treated as blanks.

6. Are callers correctly pronouncing the name of the user? If there are recurring problems with specific names, try entering the name the way you pronounce it. For example, for the name Boucher, try entering it as Boo Shay.

   For words with multiple pronunciations, try a different pronunciation in the alias field. For example, Data may sound like day ta or da ta.

   Use the following table to map sounds into letters:

Table 2 Mapping sounds to letters

Sound	Letters to use
i - as in site	ei
oy - as in boy	ow
ea - as in bean	ee
ow - as in owl	ow
i - as in bit	i
oo - as in soon	oo
u - as in cute	ew
u - as in put	oo
u - as in but	u
ay - as in pray	ay
e - as in bet	e
a - as in father	ah
a - as in cat	a
o - as in so	ow
a - as in ago	a
er - as in term	er
ch - as in church	tch
j/g - as in jar/germ	j
s - as in sure	sh
s/z - as in pleasure/azure	sh
s - as in saw	s
z - as in zoo	z
f/ph - as in fill/Phil	f
v - as in vox	v
th - as in this	th
th - as in thin	th
p - as in pap	p
t - as in tap	t
c/k - as in cap/kin	k
b - as in bap	b
d - as in dab	d
g - as in gab	g

m - as in map	m
n - as in nap	n
ng - as in sing	ng
r - as in rap	r
l - as in lap	l
y - as in yap	y
w - as in wan	w
h - as in hal	h

7. Do you find that Speech Recognition Automated Attendant has problems recognizing a non-English name? For non-English names, try using an anglicized pronunciation. For example, if you find that users don't pronounce the French name Brault, try entering an alias as Brawled (as opposed to Bro).

8. Does your contact list contain names that sound the same? For names that sound the same, try adding another word to each name to allow Speech Recognition Automated Attendant to differentiate them. You can add a middle name, a nickname, or another descriptive name. For example, Trung Nguyen and Trong Nguyen sound alike when spoken. Changing the names to Trung Vu Nguyen and Trong Duc Nguyen by adding middle names will increase recognition accuracy.

Other possible reasons why the Speech Recognition Automated Attendant cannot match names

- The name was said too quickly.
- The speech was not fluent. Delays between words were added when saying the name.
- Speech was not clear. Words may have been slurred or unwanted sounds uttered.
- Excessive background noise was recorded when speaking the name.

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