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DMS-100 Family/SL-100

DMS VoiceMail

Outcalling Application Guide

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Overview

What is outcalling?

Outcalling is an optional feature which provides two types of external messaging:

- Remote Notification (RN)
- Delivery to Non-User (DNU)

Remote Notification "monitors" a user's mailbox and when a message is received, it informs the user of the new message by contacting a remote device such as a pager (voice, tone-only, or numeric), a paging service, or another telephone. For example, a user may want to be paged if an urgent message is left in his or her mailbox.

The Delivery to Non-User feature allows users to compose and send messages to people who do not have mailboxes. For example, a subscriber belonging to a centrex customer group may need to send a message to a number of on-site employees and off-site contractors.

The Outcalling feature is administered at both the system administration level and the customer administration level.

If you are not certain that outcalling is installed on your system, follow Procedure 1-1 to verify that it is installed.

Procedure 1-1xxx
Verifying that outcalling is installed

Starting point: The Main Menu.

1 Select General Administration.

2 Select General Options.

3 Check that Outcalling is listed as one of the Available Features.

Remote notification

Each user that requests the remote notification feature has a personal remote notification schedule. This schedule can either be created by the user through his or her telephone set (if he or she belongs to an MMUI customer group) or by the administrator (in the Add or View/Modify Local Voice User screen). (Note that to create a schedule, remote notification must be enabled in the class of service to which the user belongs.)

The remote notification schedule is actually comprised of three different schedules:

- a business days schedule
- a non-business days schedule
- a temporary schedule (that overrides the other two schedules for the time specified)

Each schedule has three time periods associated with it. This allows users to be notified at different numbers at different times of the day. The time periods are definable by the user as well as by the administrator.

Within each time period, up to three target DNs can be specified. If the first DN that is tried is not answered or answered (but the user does not log in to listen to the message), the next DN will be tried. A sample schedule is shown in Figure 1-1.

Note: Target DNs must be dialable DNs. In other words, they must be the exact number that is dialed to reach a particular device (including any network access or long distance codes). For example, if "9" is required to dial outside the switch, a local target DN must be in the format 9-NXX-XXXX.

The remote notification schedule also allows the user to specify whether he or she wants to be notified of all new messages or just those that are tagged as urgent.

When a new message is left in a user's mailbox during one of the defined time periods, DMS VoiceMail will place a remote notification call. DMS VoiceMail rings the target number. If the user answers the call, the remote notification service plays a message indicating that messages have been received. (The remote notification greeting is played upon voice detection.) If the device is busy, the system waits the amount of time specified as the Busy Retry Limit and then calls again. If the call is not answered (or answered but the user does not log in), a remote notification will be immediately sent to the next target DN (if defined). If only one target DN is defined and the call is not answered (or answered with no login), DMS VoiceMail will reschedule a remote notification retry according to the retry limits and intervals that have been defined. Retry limits determine the

maximum number of times that DMS VoiceMail will attempt to remotely notify a user of a new message. Retry intervals determine the amount of time between retries.

All remote notification messages are secure because all the user receives is a notification message, not the message itself. The user still has to log into the mailbox to retrieve the message.

Figure 1-1xxx
Sample remote notification schedule

Business Days Schedule

Period 1 from 9:00 to 17:00

Target DN 1	555-1111	(Phone)
Target DN 2	555-2332	(Voice Pager)

Period 2 from 17:01 to 18:30

Target DN 1	555-2994	(Cellular car phone)

Period 3 from 18:31 to 22:00

Target DN 1	555-9292	(Home phone)

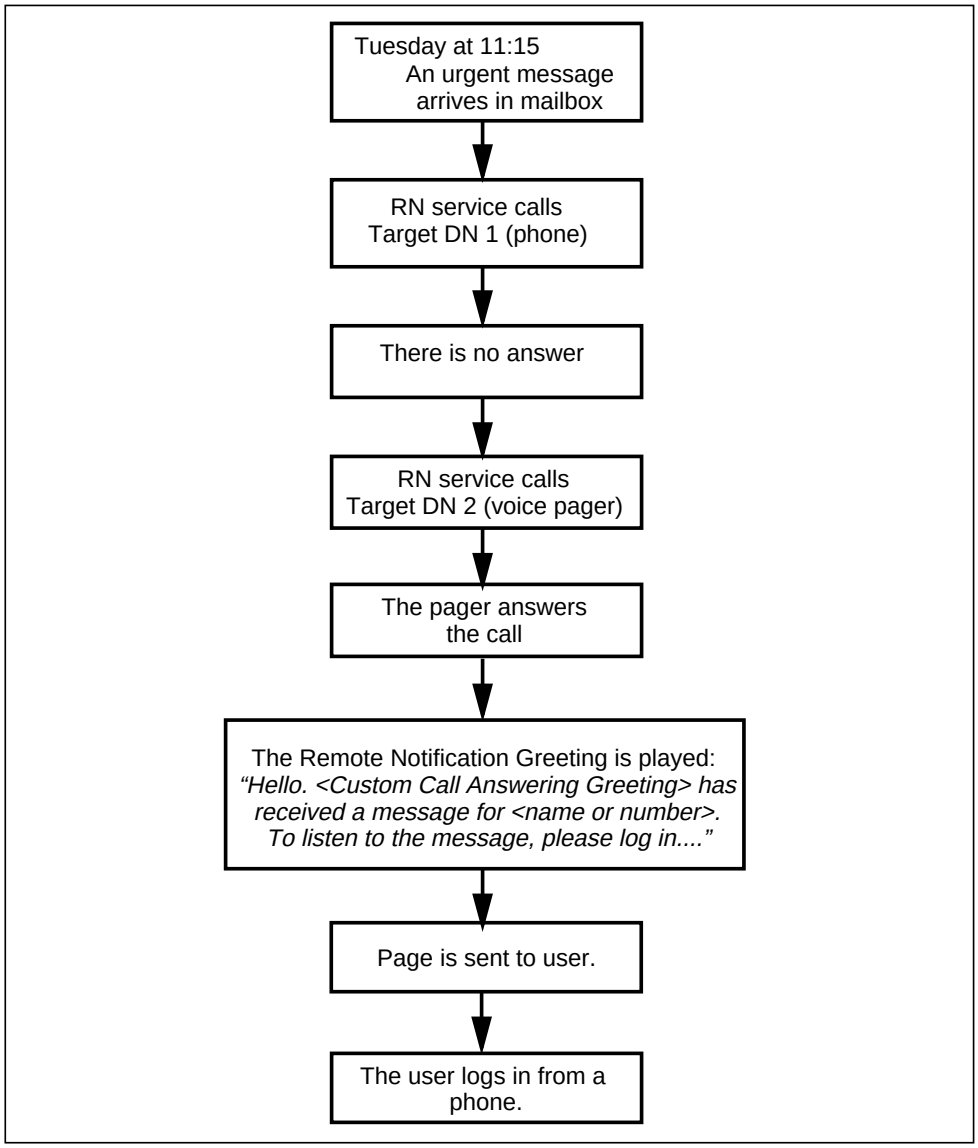
Non-Business Days Schedule

Period 1 from 11:00 to 17:00

Target DN 1	555-9292	(Home phone)

Figure 1-2 illustrates a sample remote notification session using the schedule in Figure 1-1.

Figure 1-2xxx
Sample remote notification session



The wording of the remote notification greeting varies depending on a number of factors.

- The type of device (phone or pager) that has been called.
  If a phone has been called, the greeting will include the statement *"To log in and listen to the message, press 1. To turn off remote notification, press 3."*

If target device is a pager, the greeting will simply say *"To listen to the message, please log in to Meridian Mail"* for MMUI subscribers, or *"To listen to the message, please log in to Call Answering"* for VMUIF subscribers.

- If a custom greeting has been recorded, it will be played as part of the greeting: *"Hello, <Custom System Greeting> has received a message ..."*. If no custom greeting has been recorded, the prompt is *"Hello, Meridian Mail has received a message ..."*.
- If the user has recorded a personal verification, it will be used.

  For example: *"Hello, Meridian Mail has received a message for David Jones."*

  If the user has not recorded a personal verification, the mailbox number will be used instead. For example, *"Hello, Meridian Mail has received a message for mailbox 2331."*

Delivery to non-user

The Delivery to Non-User (DNU) feature allows users to compose and send messages to people who do not have a mailbox. Non-users do not have to have a touch-tone phone in order to be able to receive messages. Like Remote Notification, DMS VoiceMail uses retry limits and intervals when attempting to deliver messages to non-users.

The service provider must define *which* non-users can receive messages by using restriction/permission tables and *when* non-users can receive messages by specifying the time windows during which message delivery is allowed. The administrator also determines which users will have access to this feature by assigning users to classes of service (COSs) in which DNU is enabled.

DMS VoiceMail will use the Delivery to Non-User feature to send a message under one of the following conditions.

- The address is preceded by the delivery to non-user prefix. A number of DNU prefixes can be defined in the Outcalling Options screen.
- A user enters an address that is not preceded by the DNU prefix and is not a valid mailbox number. The message will be successfully delivered if the field *Send Message via DNU if Mailbox Not Found* is set to "Y es" and the number is valid (for example, a valid local number). This field is configured in the Add or View/Modify Class of Service screen (at the system administration level). If this field is set to "No", a message will not be delivered to a non-user if the DNU prefix has not been entered.

  Note: If you are concerned about system security, set this field to no.

Message playback to a non-user can be triggered by one of two things: DTMF confirmation or voice detection. If you specify that DTMF

confirmation is not required, the message is automatically delivered when the call is answered and voice is detected. If DTMF confirmation is enabled, DMS VoiceMail plays a message to the recipient, prompting him or her to press 2 to hear the message from the DMS VoiceMail user, or to hang up if they do not want to take the call. (This message is played only if the system detects voice.) For example, if the wrong number has been dialed, the message itself will not simply start playing upon voice detection. However, if there are many rotary or dial pulse phones in your area, it is not recommended that you enable DTMF confirmation since recipients will not be able to press 2.

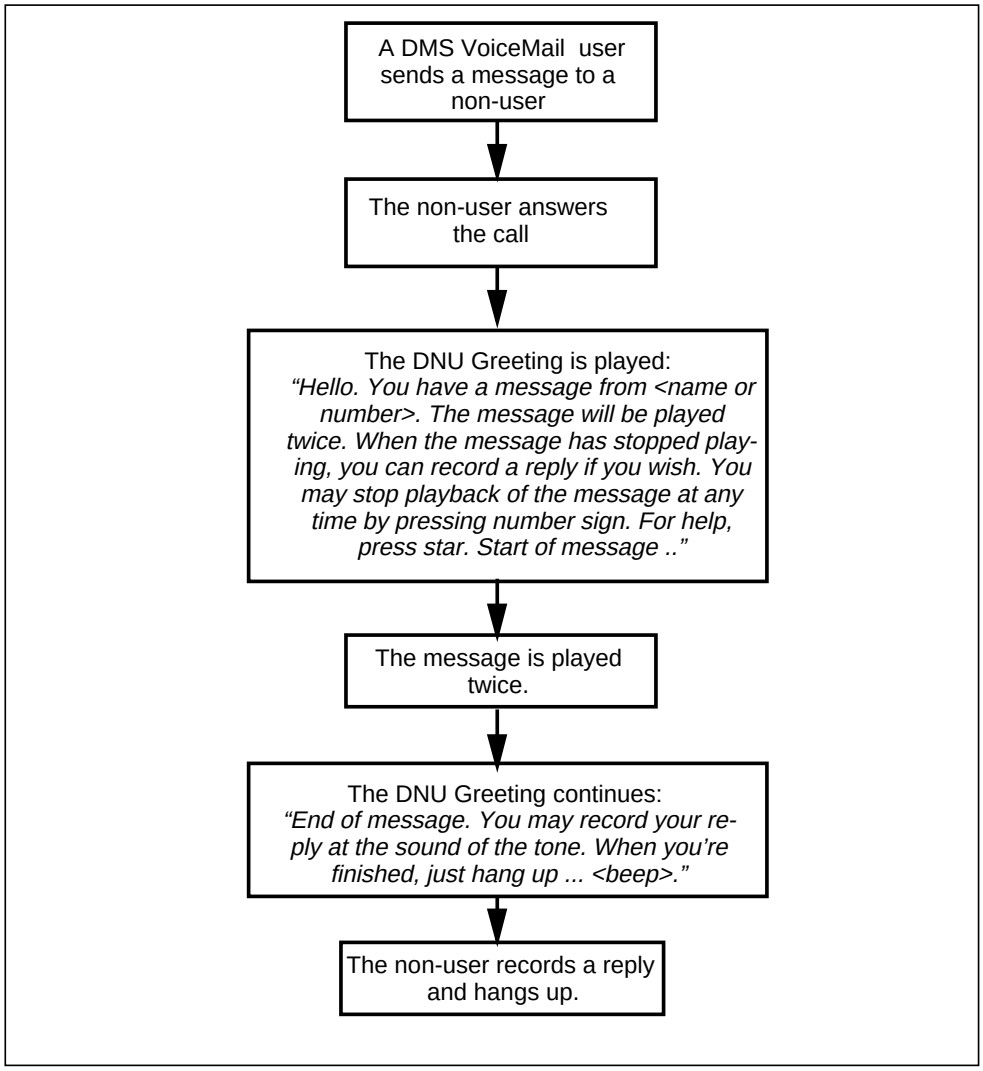
After a recipient has listened to a message, the non-user can record a reply back to the sender. If the non-user does not record a reply, and the original message was tagged for acknowledgement, a reply, in the form of a system acknowledgment, will be sent to the originator of the message.

The sender has three ways of knowing that his or her message was received:

- the non-user replies to the original message
- the sender can tag the message for acknowledgement
- if the message is not received at all, the sender receives a non-delivery notification

Figure 1-3 shows a sample delivery to non-user session.

Figure 1-3xxx
Sample delivery to non-user session



A DNU session (and the DNU greeting) will vary depending on a number of factors:

- When the system announces who the message is from, the user's name will be spoken if the user has recorded a personal verification. If there is no personal verification, the user's mailbox number will be given instead.
- A message will only be played twice if you have configured DNU to do so. Otherwise, the message will play only once.
- The non-user may be asked to press a key in order to receive the message (DTMF confirmation).

Sending messages to non-users

The *Voice Messaging User Guide,* which all mailbox owners should have, describes how to use the Delivery to Non-User feature. Inform users of the DNU prefix so that they can record it at the front of this guide for their own reference.

To send a message to a non-user, a DMS VoiceMail user must use the compose command (75). When entering the non-user's number, the DNU prefix must be entered before the number. This prefix tells the system that the number about to be entered is that of a non-user.

For example, a user wants to send the same message to three users at mailbox numbers 2334, 2390 and 2351 and two non-users, one at 555-9901 and the other at 555-1010. The DNU prefix is 9. (Note that the DNU prefix must be entered in front of each non-user's number.)

In this example, the user would enter the following:

75	compose command
2334#	
2390#	
2351#	
95559901#	
95551010#	
#	to indicate the end of mailboxes/numbers
5	to record the message
#	to end recording
79	to send the message

> ***Note:*** If the field *Send Message via DNU if Mailbox Not Found* is set to "Yes" the message would still be delivered to the non-user even if the sender did not enter the DNU prefix.

After a mailbox number is entered during message addressing, the mailbox owner's personal verification or mailbox number (if no verification is recorded) is played back to the user for confirmation. In the case of a non-user, the system plays the following prompt: *"Phone number: <number>"*. Therefore, in this example, the user would hear *"Phone number: 555-9901"* as confirmation of the number that was entered.

The message is received by the non-user in one of two ways, depending on how you configure the delivery to non-user feature. The message can be delivered upon voice detection or if the non-user provides DTMF confirmation. Voice detection means that the message begins playing as soon as speech is detected (either because a person has answered the call or because an answering machine has answered). DTMF confirmation means that the non-user must press 2 in order to hear the message.

Administering outcalling

Administering the Outcalling feature involves three phases:

- planning the service
- configuring the service
- managing and maintaining the service

Administering the outcalling service

The outcalling service is administered from a number of different screens. These are briefly described in the following sections.

Class of service

Outcalling features (remote notification and delivery-to-non users) must be enabled in the class of service (COS) to which a user belongs if the user is to have access to these features. There are also several RN and DNU parameters that are configured in the COS and, therefore, apply to all users that are assigned to the COS. This is done in the Add or View/Modify Class of Service screen (at the system administration level).

Outcalling Options

The Outcalling Options screen is accessible at both the system administration level and the customer administration level. However, the parameters at the system level are different from the ones at the customer level.

System outcalling options

At the system administration level, the parameters in the Outcalling Options screen control the collection of audit trail data. It is here that audit trail data collection is enabled. Furthermore, you can specify the number of days to store audit data before it is deleted from disk, when collection of audit trail should stop if the volume on which audit data is stored becomes almost full, and the maximum number of outcalling channels.

Customer outcalling options

At the customer administration level, the parameters in the Outcalling Options screen are customizable for each customer group. These parameters include: DNU retry limits and intervals, the number of times to play a DNU message to a non-user, whether or not DTMF confirmation is required, the

maximum number of RN retry repeats, the numeric pager data terminator, and the default numeric pager data. These are described in detail in the following chapters.

User Administration

There are only two outcalling parameters that can be customized for a user. Both deal with remote notification. The first one determines what type of message will activate remote notification (either any new message or only urgent messages). The second parameter is the remote notification schedule itself. In the case of MMUI subscribers, either the service provider can modify these parameters through user administration, or if the field *Remote Notification Keypad Interface* is enabled in the user's class of service, the user can modify these parameters through his or her telephone set. For VMUIF subscribers, only the service provider can modify these parameters.

Note that if a user is assigned to a personal class of service, the administrator can also customize the outcalling parameters that are normally controlled by the system class of service.

Summary of outcalling fields

Table 2-1 is a summary of all configurable fields that are related to the Outcalling feature.

Table 2-1xxx
Location of outcalling fields

Location of Field	Remote Notification (RN)	Delivery to Non-Users (DNU)
Class of Service (System Administration)	• Remote Notification Capability • RN Restriction/Permission Codes • Keypad Interface • Retry Limits and Intervals • RN Business Days	• Delivery to Non-user Capability • DNU Restriction/Permission Codes • Send Message via DNU if mailbox not found • DNU DTMF Confirmation Required
Outcalling Options screen (Customer Administration)	• Maximum Number of Remote Notification Retry Repeats • Numeric Pager Data Terminator • Default Numeric Pager Data	• Delivery to Non-user Weekdays • Delivery to Non-user Weekends • Delivery to Non-user Retries and Intervals • Delivery to Non-user Addressing Prefixes and Associated Dialing Codes • Number of Times to Play a non-user Message • DTMF confirmation overrides user preferences • DNU DTMF Confirmation Required
User Profile (Add or View/ Modify Local Voice User)	• Current State of RN (on/off) • Message Remote Notification Option (notifies user of any or only urgent messages) • Remote Notification Schedules (business, non-business, temporary)	
Location of Field	**Applies to both Remote Notification and Delivery to Non-Users**	
Outcalling Options screen (System Administration)	• Collect Audit Trail Data • Number of Days of Audit Trail Data Stored • Shutdown Audit Trail at Volume Full (percentage) • Maximum Number of Outcalling Channels	
Outcalling Audit Trail Report	• Report Type • Selection Criteria • Report Start and End (optional)	

Planning the outcalling service (Chapter 3)

The following steps are required to plan the Outcalling feature.

1 Identify the users that require outcalling (remote notification, delivery to non-user or both).

2 Identify the outcalling class of service parameters.

3 Assign users to the appropriate class of service.

4 Identify the system-wide outcalling options.

5 Identify the customer-specific outcalling options.

6 Identify the remote notification schedules for users who will not be creating and maintaining their own schedules.

7 Perform a final check.

Configuring the outcalling service (Chapter 4)

Some outcalling parameters are configured at the system administration level whereas others are customizable for each customer group and are, therefore, only accessible at the customer administration level.

The Table 2-2 summarizes the major steps involved in configuring the outcalling feature (both remote notification and delivery to non-users) and the administration level at which each step is performed. Detailed instructions and procedures are provided in the following chapters.

Table 2-2xxx
Configuring outcalling on a multicustomer system

Step		Screen	Administration Level
1	Enable Remote Notification (RN) and Delivery to Non-Users (DNU) in the appropriate Classes of Service.	Add or View/Modify Class of Service	System
2	Configure class of service specific parameters for RN and DNU.	Add or View/Modify Class of Service	System
3	Configure system-wide outcalling parameters.	Outcalling Options	System
4	Assign classes of service (with RN and DNU enabled and configured) to customer groups.	General Options	Customer
5	Customize outcalling parameters for each customer group.	Outcalling Options	Customer
6	Assign users to an appropriate class of service.	Add (or View/Modify) Local Voice User	Customer
7	Create RN schedules for those users that can not or do not want to create a schedule from their own telephone sets.	Add (or View/Modify) Local Voice User	Customer
8	Test the outcalling service.		
9	Provide training to users.		

To avoid switching back and forth between the two administration levels, it is recommended that you configure all of the system-level options first and then access each customer group to configure customer-specific parameters.

Managing and maintaining the service (Chapter 5)

To ensure that the Outcalling feature is being used effectively and is operating properly, carry out the following steps.

1 Keep good records.

2 Set up operational measurements for the Outcalling feature.

3 Print, read and interpret outcalling operational measurements.

The Outcalling Audit Trail Report provides you with statistics for monitoring the use of the outcalling services. There are two types of reports that you can generate: a summary report and a detail report. The summary report provides statistics about completed outcalls. The detail report provides information about the progress of each outcall (both complete and incomplete) during a specified reporting period.

Planning outcalling

The purpose of the planning phase is to identify all aspects of the outcalling service. If you will not be using the remote notification feature or delivery to non-user, when you come to a procedure relating to that feature, just ignore it and move on to the next step.

Identify the users that require outcalling

Identify which users require outcalling (either remote notification, delivery to non-user or both). Gather a list of users together.

Identify the outcalling class of service parameters

You will have to identify how many outcalling classes of service you need.

Obtain a copy of the “Class of Service - Outcalling Parameters” worksheet, located in Appendix A. This worksheet is shown on the following page. Some of the parameters in this worksheet refer to remote notification, and others refer to delivery to non-user. What kind of outcalling services do users want? In other words, how many different classes of service do you need to create for outcalling? At a minimum, you will probably complete three worksheets for three different classes of service: one for users that require remote notification only, one for users that require delivery to non-users only, and one for users who require both remote notification and delivery to non-users.

Class of Service - Outcalling Parameters Worksheet

Class of Service Number: _____

Class of Service Name: _____

Remote Notification

Remote Notification Restriction/Permission Codes: _____
Which restriction/permission set (as defined in Voice Security Options) is applied to RN?

Remote Notification Keypad Interface: **No** ❑ **Yes** ❑
(MMUI only) Do you want users to be able to create and modify their own RN schedules?

Remote Notification Retry Limits and Intervals:

Busy Retry Limit:	_____	Busy Retry Interval:	_____ (hh:mm)
No Answer Retry Limit:	_____	No Answer Retry Interval:	_____ (hh:mm)
Answer Retry Limit:	_____	Answer Retry Interval:	_____ (hh:mm)

RN Business Days:

Monday	No ❑	Yes ❑
Tuesday	No ❑	Yes ❑
Wednesday	No ❑	Yes ❑
Thursday	No ❑	Yes ❑
Friday	No ❑	Yes ❑
Saturday	No ❑	Yes ❑
Sunday	No ❑	Yes ❑

Delivery to Non-User

Delivery to Non-User Restriction/Permission Codes: _____
Which restriction/permission set (as defined in Voice Security Options) is applied to DNU?

Send Message via DNU if Mailbox Not Found: **No** ❑ **Yes** ❑
If the sender did not enter the DNU prefix and the address is not a valid mailbox number, should the message be sent using DNU?

DNU DTMF Confirmation Required: **No** ❑ **Yes** ❑
Is the non-user required to press 2 in order to hear the voice message?

Setting up remote notification in classes of service

To make remote notification available to a user you must enable it in a class of service and then assign the user to that class of service. There are also a number of remote notification parameters that are configured in the class of service which affect all users that belong to it.

As you read the following sections, fill in the “Class of Service - Outcalling Parameters” worksheet. When you are ready to configure outcalling in DMS VoiceMail, you will simply copy the information from the worksheet into the system.

If all of your remote notification users will have the same remote notification parameters, you only need to fill in one remote notification class of service worksheet. If, however, you want users to have different levels of remote notification capability, you will need to create a different class of service for each set of remote notification characteristics. The same holds true for classes of services for users requiring only delivery to non-users and those requiring both outcalling services.

Identify remote notification restriction/permission codes

Because the Remote Notification feature will be placing calls outside of your switch, you must decide which dialing codes you want to restrict in order to protect your system against abuse.

For example, if you don’t want users to be notified at long distance numbers, you can prevent the remote notification feature from making long distance calls by restricting the long distance dialing code (such as “91”).

You can choose from one of four existing restriction/permission sets. These are defined in the Voice Security Options screen (at the system administration level). Their default names are “On Switch”, “Local”, “Long Distance 1”, and “Long Distance 2”. You may need to review this screen in order to determine the most appropriate set. To access the Voice Security Options screen, select Voice Administration from the Main Menu and then select Voice Security Options.

You obviously do not want to choose a restriction/permission set that restricts all off-switch dialing, otherwise remote notification will not work. However, you may want to choose a restriction/permission set that restricts international dialing only, or both international and long distance dialing, if this is how your restriction/permission sets are set up.

Do you want users to create and maintain their own remote notification schedules?

Note: This step is necessary only for MMUI customer groups. This is not a configurable parameter in the VMUIF interface.

If you want to give users the ability to create and change their own remote notification schedules from their telephone sets, set the *Remote Notification Keypad Interface* field to "Yes". If this feature is disabled in the class of service, you will have to create and maintain remote notification schedules for users assigned to this class of service.

The default is "Yes".

Identify remote notification retry limits and intervals

When a remote notification attempt is unsuccessful, DMS VoiceMail uses Retry Limits to determine how many times it should attempt to contact the user. Retry Intervals determine how often the retries should be attempted (i.e., the amount of time between retries, from 00:00 to 23:59 (hh:mm)).

There are three types of unsuccessful remote notification attempts: Busy, No Answer, and Answer No Login (where the user answers the phone, or pager, but does not log in to his or her mailbox to listen to the message on the same call). Each of these three conditions has a Retry Limit and Retry Interval associated with it.

For example, a remote notification call is not answered. The No Answer Retry Interval is 5 minutes and the No Answer Retry Limit is 10. DMS VoiceMail will try the number again in 5 minutes. If the call is still not answered, DMS VoiceMail will keep retrying up to 10 times. If the call is not answered on the eleventh call, remote notification will stop. (The situation is more complex if more than one target DN is defined in the user's schedule.) Retry scenarios are provided beginning on page 3-11 to show the differences between user schedules with only one target DN and schedules with 2 or 3 target DNs.

The following retry limits and intervals must be defined.

Note 1: All intervals are specified in hours and minutes (hh:mm).

Note 2: In the case of retry limits, the original remote notification call does not count. For example, if the no answer retry limit is 10, the original call does not count as the first retry. Instead, this means that the system will call once (the original remote notification) plus 10 retries, for a total of 11 remote notification calls.

Note 3: In multiple target DN scenarios, retry limits and intervals apply only after all target DNs have been tried, not in between target DNs (unless a busy DN is encountered).

Busy retry limit

This is the number of times notification is retried at a remote phone, pager, or paging service if the destination number is busy.

If more than one target DN is defined in the user's schedule, DMS VoiceMail will *not* try the next target DN if the current one is busy. Instead, the system will retry the same DN after the time specified as the Busy Retry Interval has elapsed.

If this limit is exhausted, then the No Answer Limit and No Answer Interval Limit are used for further instances of busy. Therefore, the total number of allowed retries is actually Busy Retries + No Answer Retries. If this limit is exhausted, remote notification stops.

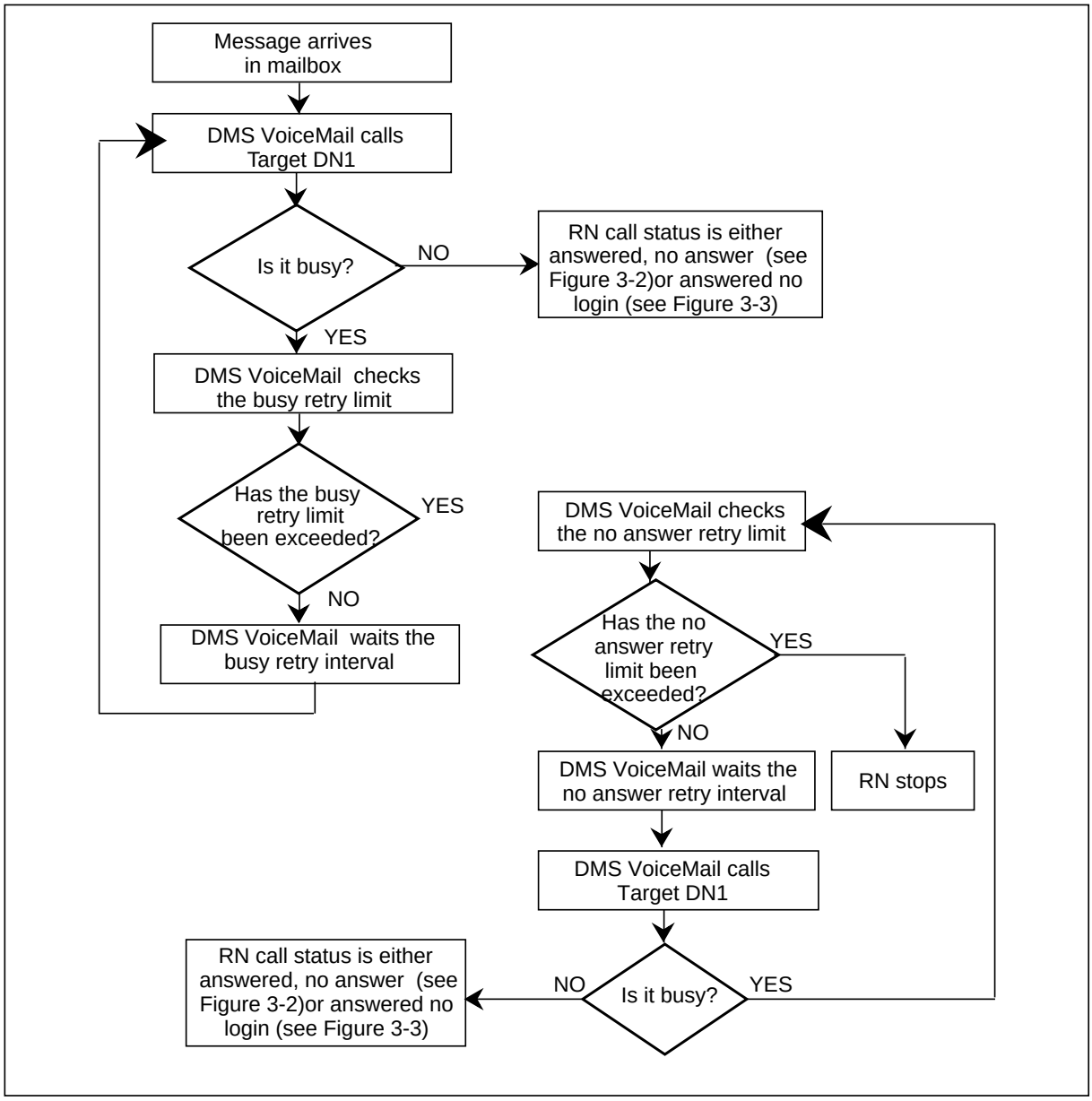
You may enter a value from 0 to 10. The default is 3.

Busy retry interval

This field determines how long DMS VoiceMail will wait before retrying remote notification if the target DN is busy.

The valid range is from 00:00 to 23:59. The default is 00:05.

Figure 3-1
Remote notification scenario in which target DN is busy



No answer retry limit

This is the number of times notification is retried at a remote phone, pager, or paging service if the destination number is not answered. When a remote notification is sent to a phone, the phone will ring a default of 7 times before it is considered not answered, not 4 times as it does with a mailbox.

If more than one target DN is defined in the user's schedule, DMS VoiceMail will try calling the first target DN, if there is no answer, DMS VoiceMail *immediately* tries calling the second target DN. (The no answer retry interval is not observed between DNs, only between retries.) If there is no answer at this DN, DMS VoiceMail will call the the third target DN (if defined). If it too is not answered, the system will wait the amount of time specified as the No Answer Retry Interval before retrying remote notification to the first target DN.

If there is a mixture of No Answer and Answer results in a multiple DN scenario, the Answered Retry Interval and Answered Retry Limit are used. This result is preferred over a no answer result.

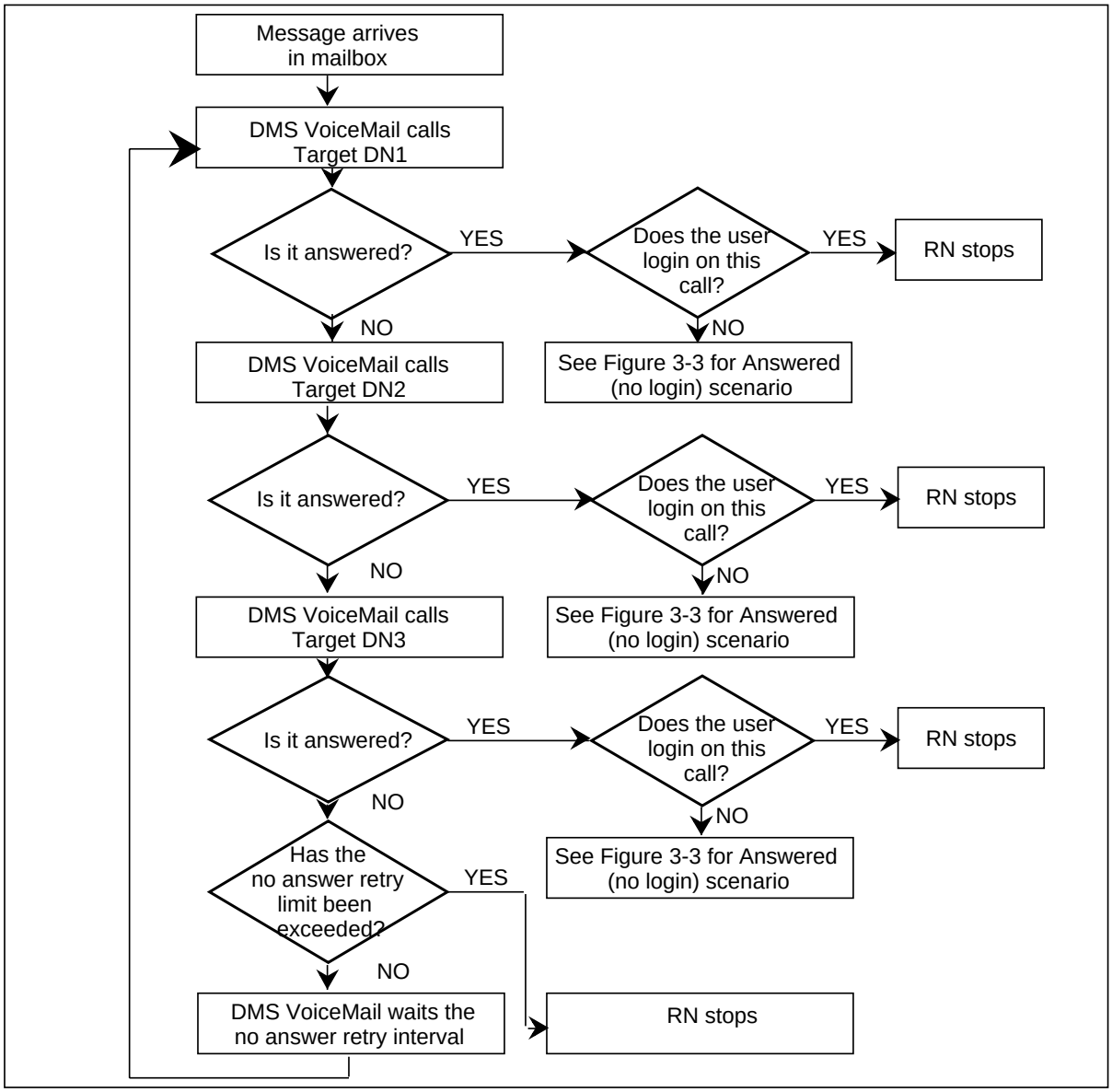
You may enter a value from 0 to 10. The default is 10.

No answer retry interval

This is the amount of time that DMS VoiceMail will wait before retrying remote notification if the target DN is not answered.

The valid range is from 00:00 to 23:59. The default is 00:15.

Figure 3-2
No answer multiple target DN scenario



Answered retry limit
This is the number of times DMS VoiceMail will retry a remote number when the number is answered but the user does not log in during the same call.

If more than one target DN is defined, and the first target DN is answered with no login, DMS VoiceMail *immediately* tries calling the second target DN. (The no answered retry interval is not observed between DNs, only between retries.) If it too is answered with no login, DMS VoiceMail will

call the third target DN (if defined). If it too is answered with no login, the system will wait the answered retry interval before retrying remote notification to the first target DN.

If there is a mixture of no answer and answered results in a multiple DN scenario, the answered retry interval and answered retry limit are used. This result is preferred over a no answer result.

If a pager answers a remote notification call, the result will always be logged as an “answered no login”. This is because with a pager, a user cannot log in to DMS VoiceMail on the *same call* as the remote notification. When a pager receives a call from DMS VoiceMail, the call is disconnected and the user then goes to a phone to listen to his or her message. Because the user logs in on a separate call than the remote notification, DMS VoiceMail will log this as answered without login. This will also be the case if an answering machine picks up a remote notification call.

Remote notification will continue to call the target DN the number of times specified by the answered retry limit. It is, therefore, recommended that you keep this number relatively low (the default is usually sufficient) to keep the system from retrying devices from which a user cannot log in.

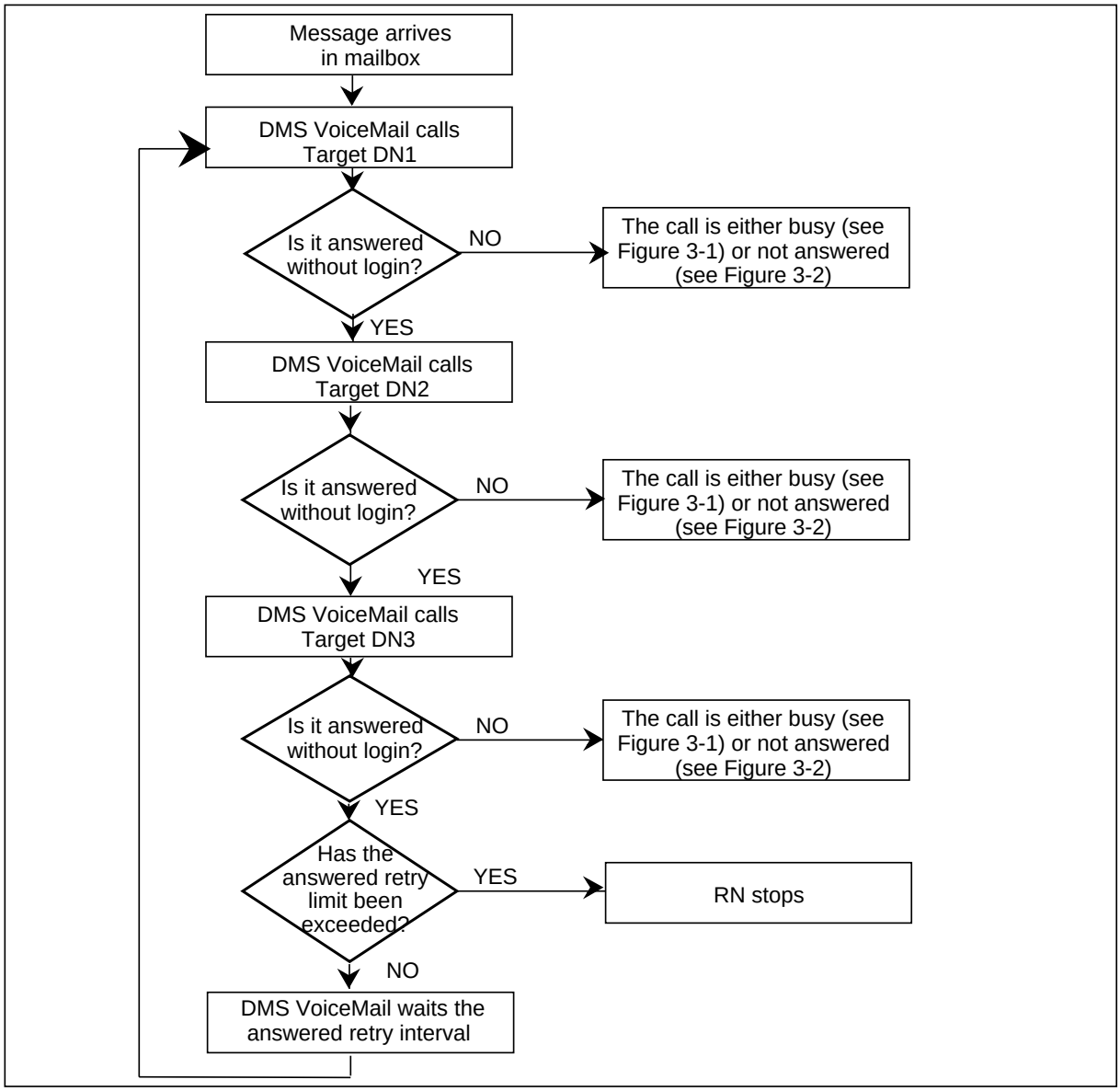
The valid range is from 0 to 10. The default is 1.

Answered retry interval

This is the length of time the system will wait before retrying a remote number if the target DN is answered, but the user does not log in to listen to the message on the same call.

The valid range is from 00:00 to 23:59. The default is 00:05.

Figure 3-3
Answered (no login) multiple target DN scenario



When a remote notification call is answered, a user may suppress further remote notification in one of two ways. If the user has answered a phone, he or she can press “3” to disable remote notification. This will disable all further remote notifications until the user logs into his or her mailbox. Or, if a user logs into his or her mailbox and new messages are announced, but he or she does not listen to them, remote notification will be disabled until the next new message arrives.

Remote notification retry scenarios

This section provides a number of examples and retry scenarios to give you an idea of how remote notification uses retry limits and intervals. The RN retry sequences that result depend on the type of unsuccessful RN attempt (Busy, No Answer, Answered No Login), and whether there is only one target DN or multiple targets specified in the time period.

The first scenario looks at a situation in which only one target DN is specified for the time period, whereas in Scenario 2 there are three target DNs associated with the time period.

Scenario 1: 1 target DN defined for the first time period (9:00 a.m. to 12:00 p.m.) in a business day schedule

Busy Retry Limit = 3 and Interval = 5 mins
No Answer Retry Limit = 10 and Interval = 15 mins
Answered No Login Retry Limit = 1 and Interval = 5 mins

Table 3-1xxx
RN retry scenario for a schedule time period with one target DN

Time of Message	RN Action	RN Result	Further Action
8:55 a.m. message arrives	No RN activated - this is before the first time period	None	None
9:30 a.m. message arrives	RN sent	Busy	RN rescheduled using Busy Retry Limit and Interval
9:35 a.m.	First Busy Retry	Busy	RN rescheduled using Busy Retry Limit and Interval
9:40 a.m.	Second Busy Retry	No Answer	RN rescheduled using No Answer Retry Limit and Interval
9:55 a.m.	First No Answer Retry	Busy	RN rescheduled using Busy Retry Limit and Interval
10:00 a.m.	Third Busy Retry	Busy	Busy retry limit is exhausted. RN rescheduled using no answer retry limit and interval.
10:15 a.m.	Second No Answer Retry	No Answer	RN rescheduled using no answer retry limit and interval
10:20 a.m. message arrives	None *		
10:30 a.m.	Third No Answer Retry	Answered No Login	RN rescheduled using Answered No Login Retry Limit and Interval
10:35 a.m.	First Answered No Login Retry	Answered No Login	Answered No Login Retry Limit exhausted; RN stops until a new message arrives
11:52 message arrives	RN sent	Busy	RN rescheduled using Busy Retry Limit and Interval
11:57 a.m.	First Busy Retry	Busy	The RN retry falls outside of the time period. RN stops.

*While within an RN cycle (a series of retries initiated by a new message arriving in a mailbox), new messages do not initiate a new notification attempt. The first retry cycle is used to notify the user of all messages. A message initiates RN only when there is no RN cycle currently in progress.

When the retry limits have been exhausted, Remote Notification stops until another new message is deposited into the user's mailbox. Further limits are placed on the number of *retry cycles* - a cycle refers to one pass through the number of allowed retries. See the description of the *Maximum Number of Remote Notification Retry Repeats* field in the section "Identify remote notification parameters" on page 3-21.

Scenario 2: multiple (3) target DNs defined for the first time period (9:00 a.m. to 12:00 p.m.) in a business day schedule

Busy Retry Limit = 3 and Interval = 5 mins
No Answer Retry Limit = 10 and Interval = 15 mins
Answered No Login Retry Limit = 1 and Interval = 5 mins

Table 3-2xxx
RN retry scenarios for a schedule time period with multiple target DNs

Time of Message	RN Action	RN Result	Further Action
9:10 a.m. message arrives	RN sent to Target DN 1	No Answer	Next target DN is called immediately
	RN sent to Target DN 2	No Answer	Next target DN is called immediately
	RN sent to Target DN 3	Answered with Login	Remote Notification stops
9:20 a.m. message arrives	RN sent to Target DN 1	No Answer	Next target DN is called immediately
	RN sent to Target DN 2	No Answer	Next target DN is called immediately
	RN sent to Target DN 3	Answered No Login	The Answered No Login Retry Limit and Interval are used (this was the best call)
9:25 a.m.	DN 1 is retried after the Answered Interval has passed	Busy	RN is rescheduled using the Busy Retry Limit and Interval. The same target DN will be called.
9:30 a.m.	RN sent to Target DN 1	No Answer	Next target DN is called immediately
	RN sent to Target DN 2	Busy	RN is rescheduled using the Busy Retry Limit and Interval.
9:35 a.m.	Target DN 2 is retried	Busy	RN is rescheduled using the Busy Retry Limit and Interval
9:40 a.m.	Target DN 2 is retried	Busy	Busy Retry Limit is exhausted; reschedule call to same DN using No Answer Retry Limit
9:55 a.m.	RN sent to Target DN 2	No Answer	Next target DN called immediately
	RN sent to Target DN 3	No Answer	RN rescheduled using No Answer Retry Limit and Interval
10:10 a.m.	Target DN 1 is retried	Answered with Login	RN stops

Note: There are six retries in this example (at 9:25, 9:30, 9:35, 9:40, 9:55, and 10:10). When there are multiple target DNs, a Retry occurs only after all DNs have been tried or when a busy DN is encountered. For example, if target DNs 1, 2 and 3 and are not answered, or there is an answer without login, when target DN 1 is called again, this is considered a retry.

Identify business days

The default business days are Monday to Friday. However, if your business days are different you will have to change the default settings. The business days must be accurate since they are referred to in user's remote notification schedules.

Setting up delivery to non-users in classes of service

To make delivery to non-users available to a user you must enable it in a class of service and then assign the user to that class of service. There are also a number of DNU parameters that are configured in the class of service which affect all users that belong to the class of service.

As you read the following sections, fill in the "Class of Service - Outcalling Parameters" worksheet (see page 3-2). There is a blank copy of this worksheet in Appendix A. When you are ready to configure outcalling in DMS VoiceMail, you will simply copy the information from the worksheet into the system.

Identify delivery to non-user restriction/permission codes

Because the delivery to non-user feature will be placing calls outside of your switch, you must decide which dialing codes you want to restrict in order to protect your system against abuse.

For example, if you don't want users to be able to send messages to non-users at long distance numbers, you can prevent DNU from making long distance calls by restricting the long distance dialing code (such as "91").

You can choose from one of four existing restriction/permission sets. These are defined in the Voice Security Options screen (at the system administration level). Their default names are "On Switch", "Local", "Long Distance 1", and "Long Distance 2". You may need to review this screen in order to determine the most appropriate set.

You obviously do not want to choose a restriction/permission set that restricts all off-switch dialing, otherwise delivery to non-users may not work as desired. However, you may want to choose a restriction/permission set that restricts international dialing only, or both international and long distance dialing, if this is how your restriction/permission sets are set up.

Identify whether or not messages should be sent using DNU if a mailbox number is not found

When enabled, this feature allows a user to send a message to a non-user without having to first enter the DNU prefix. If, for example, a user enters the number of a non-user during message composition and forgets to enter the DNU prefix, the system will first try to find the associated mailbox. When this fails, the message will be successfully delivered as long as the DN entered by the user is valid and not restricted.

For example, the non-user's DN is 555-1234. The DNU prefix is 9. The user fails to enter 9 when composing a message. DMS VoiceMail cannot find a mailbox numbered 5551234. The system, therefore, checks the restriction/permission codes that have been placed on delivery to non-user, and if so allowed, sends the message to the non-user.

The default is "No".

Identify whether or not DNU DTMF confirmation is desirable

If DTMF confirmation is enabled, recipients of DNU messages are required to confirm that they want to hear the message by pressing **2**. DTMF confirmation can help to avoid messages being delivered to an answering machine or to the wrong person. When disabled, the message is played upon voice detection. If you are in an area where rotary phones are widely used, you should disable DTMF confirmation.

The default is "No".

Note: DTMF confirmation is also configured in the Outcalling Options screen and can override the setting in the class of service if the field *DTMF confirmation overrides user preferences*, in the customer group's Outcalling Options screen, is set to "Yes".

Assign users to the appropriate class of service

Once you have determined how many classes of service you require, you can assign users to the appropriate class of service. For each class of service you have identified, fill out the worksheet on the following page (there is a copy in Appendix A). Enter the users' names and DNs. Then attach the list to the appropriate class of service worksheet. This way you will have a record of the class of service configuration and the users who are assigned to it.

Class of Service Number:	
Class of Service Name:	
User Name	**DN**

Identify outcalling options

Outcalling parameters are configured in the Outcalling Options screen. There are three different categories of fields in this screen.

- those that affect the collection of audit trail data
- those that affect remote notification
- those that affect delivery to non-user

The fields of the first category are configured at the system administration level. Remote notification and delivery to non-user fields are configured at the customer administration level.

Identify whether or not the default settings are appropriate for your system (defaults are shown in the worksheet on the following page). If they are not, identify values that will meet your needs. As you identify values for each parameter, fill in the worksheet that is provided on the following page. There is also a blank copy of this worksheet in Appendix A. Even if you accept all of the default parameters, you should fill in the worksheet for your records.

Outcalling Options Worksheet

System Data

Collect Audit Trail Data: **Yes** ❑ **No** ❑
Select Yes to enable audit trail data collection.

Number of Days of Audit Data Stored: _____
Enter the number of days that audit data is stored on the disk before being overwritten. Enter a number between 1 and 63. The default is 7.

Shutdown Audit Trail at Volume Full (percentage): _____
Enter a number between 0 and 99. Zero (0) implies all calls will be handled. The default is 25.

Maximum Number of Outcalling Channels: _____
This number cannot exceed the number of voice channels. The default is 2.

For Customer Group:_____

Remote Notification

Maximum Number of Remote Notification Retry Repeats: _____
This is the number of repeats allowed before the system disables remote notification to a user. The default is 5.

Numeric Pager Data Terminator: _____
Character required by some general access paging services. The default is #.

Default Numeric Pager Data: _____
Callback number for general access pager services and default callback number for numeric pagers.

Delivery to Non-User

Delivery to Non-User on Weekdays: from _____ to _____ (hh:mm)
Time period during which DNU is allowed on weekdays. The default is 00:00 to 23:59.

Delivery to Non-User on Weekends: from _____ to _____ (hh:mm)
Time period during which DNU is allowed on weekends. The default is 00:00 to 23:59.

Delivery to Non-User Retries:

Busy Retry Limit: (default: 3)	_____	Busy Retry Interval: (default: 00:05)	_____ (hh:mm)
No Answer Retry Limit: (default: 10)	_____	No Answer Retry Interval: (default: 00:15)	_____ (hh:mm)
Answer Retry Limit: (default: 0)	_____	Answer Retry Interval: (default: 00:00)	_____ (hh:mm)

Outcalling Options Worksheet

Delivery to Non-User Addressing Prefixes and Associated Dialing Codes:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Number of times to play a message to a non-user: _____
This field can be set to 1 or 2. The default is 2.

DTMF Confirmation overrides user preference: **No** ❑ **Yes** ❑
If set to Yes, the setting in the following field overrides the setting in the user's COS. The default is Yes.

Delivery to Non-User DTMF Confirmation Required: **No** ❑ **Yes** ❑
Yes means that non-users must enter 2 on the telephone keypad in order to listen to a DNU message. The default is No.

Identify audit trail parameters

The following parameters control the collection of audit trail data. They are located in Outcalling Options screen at the system administration level. These settings will be the same for all customer groups.

Identify if audit trail data will be collected

You can choose to turn audit trail data collection on or off. It is recommended that you turn collection on in order to obtain valuable information about how the outcalling services are being used.

If enabled, you can either generate summary or detailed reports that provide information about the number of calls, the start time and duration of calls, the numbers called, the type of outcall (RN or DNU), and the status of calls.

The default is “Yes”.

See the chapter “Managing and maintaining outcalling” for more information about the audit trail report.

Identify the number of days that audit data will be stored

The *Number of Days of Audit Data Stored* field determines how long the collected audit trail data will be stored on disk before being overwritten. The number of days can range from 1 to 63.

The default is “7”.

Identify when audit trail data collection should stop if the disk becomes near full

This is a volume management parameter which will help you keep the volume on which audit trail data is stored from becoming completely full. Identify the percentage at which you want the collection of audit trail data to stop. For example, if the *Shutdown Audit Trail at Volume Full (%)* field is set to 80%, and the volume on which audit data is stored reaches 80% capacity, audit trail data collection will be disabled. If this number is set to 100%, collection of data will not stop until the volume is completely full. This is not recommended. (Note that this is a percentage of text space, not voice space.)

The default is “85%”.

Identify the maximum number of outcalling channels

This parameter is used for channel management and puts a limit on the number of outcalling channels/agents that can be used at any given time by the outcalling service.

The default is “2”. This is the recommended maximum for moderate use. For high usage of the outcalling server, you may have to increase this number. The danger in entering a high value in this field is apparent in the following example. If a broadcast message is sent, and many users have RN enabled, the number of channels specified here could temporarily be taken for outcalling use, leaving no channels available for call answering and message retrieval.

Identify remote notification parameters

If none of your users require remote notification capabilities, skip to the section “Identify delivery to non-user parameters” on page 3-22.

Identify the maximum number of remote notification retry repeats

This parameter determines the number of retry cycles or sets allowed before the system disables a user’s Remote Notification feature due to consecutive failures of notification calls. This occurs if the user does not log in and retrieve messages.

The default is “5”.

For example, if the system attempts to notify a user of a message, but the notification numbers are not answered, the system will stop notification attempts after the No Answer limit has been exhausted for the user. This is considered one retry repeat. If another new message is left for the user, and retry attempts are again exhausted, this would be counted as the second retry repeat. This continues until the maximum number of retry repeats set in this field is reached, at which time DMS VoiceMail no longer attempts to notify the user of new messages. If a user logs on to the mailbox and retrieves the messages, the counter is reset to “0”, and remote notification is re-enabled.

Identify the numeric pager data terminator

Some general access paging services (such as SkyPager) require a special terminator character. When DMS VoiceMail calls the paging service and the call is answered, DMS VoiceMail sends the pager identification number (PIN), the terminator digit (using it as a delimiter), then the call-back number, followed by the terminator digit.

If users subscribe to a general access paging service or a numeric pager that does not accept this character, leave this field blank.

The default is “#”.

Identify the default numeric pager data

This step is necessary if any of the users in this customer group:

- subscribe to a general access pager service, or

- use numeric pagers and the pager callback number is not defined in the user's schedule.

This number is generally the voice messaging access DN. The pager data can only be up to 8 digits in length. Therefore, if the actual access DN is longer than 8 digits, you will have to enter a number that indicates DMS VoiceMail (such as the number without the area code).

In the first case, this number is used as the callback number (since the user's PIN number has to be entered where the callback number is usually defined in the user's schedule). When a remote notification call is sent to a target DN that is defined as "Service" in the user's schedule, this number will be displayed on the user's pager. It indicates to the user who the message is from (DMS VoiceMail in this case).

In the case of numeric pagers, the callback number can be customized for each user. However, if for some reason the user has not defined a callback number (if the *Pager Callback Number* field in the user's schedule is blank), this number will be used instead.

Identify delivery to non-user parameters

If none of your users require delivery to non-user capabilities, ignore this section and go to the following section, "Identify remote notification schedules for users".

Identify the permitted delivery period for weekdays and weekends

If you are going to enable DNU, make sure that you identify the times during which electronic messages are legally allowed to be sent in your area. You must define one permitted time window for weekdays and another for weekends (they are usually different).

CAUTION

Geographical restrictions on phone message delivery

In most geographical areas, electronic delivery of phone messages is restricted by law to certain time periods during the day. Confirm and implement the restrictions that apply to your region. The default for both weekdays and weekends is "00:00" to "23:59". Therefore, if you do not modify this field, users are allowed to send messages to non-users 24-hours a day, 7 days a week which may contradict the laws in your region.

Use the 24-hour clock format to specify from (hh:mm) and to (hh:mm) times. Remember that you are defining the *allowed* times, not the restricted times.

Stale dating

Messages delivered to non-users are subject to *stale dating*. Stale dating is the time period beyond which a delivery attempt will no longer be made. This parameter is not configurable by the system administrator, however, you should be aware of how it works. The default is 36 hours. To change this default, contact a representative of your regional support center (RSC).

When a user sends a DNU message the system checks the current time against the permitted time window to see if it is allowed to send the message at this time (permitted delivery times are defined in the fields *Delivery to Non-User on Weekdays* and *Delivery to Non-User on Weekends*). If the current time falls into the restricted time window, the system then checks the stale date parameter to see if the message will have become stale by the time the system is permitted to send messages again.

The following examples describe possible scenarios to give you an idea of how permitted/restricted time windows interact with stale dating. They all use a permitted time window of 9:00 a.m. to 9:00 p.m. for weekdays. It is also assumed that the next day is a weekday.

Example 1: A user sends a DNU message at 10:00 p.m on a weekday. The stale period is defined as 1 day 12 hours. By 9:00 a.m. the message will only be 11 hours old. The system will send the message at 9:00 a.m. If the call is not answered or busy at that time, the system will use the defined retry limits and intervals. (An explanation of these fields follow.)

Example 2: A user sends a DNU message at 10:00 p.m. on a weekday. The stale period has been defined as 10 hours. By 9:00 a.m. the message will be 11 hours old and will have become stale. The system will not be able to send the message in the morning. The system sends a non-delivery notification (NDN) to the user explaining that the message could not be delivered. The NDN will also inform the user of the times during which delivery to non-users is permitted.

Example 3: A user sends a DNU message at 8:30 p.m. The call is not answered or the recipient does not wait for the message to start playing before disconnecting. (The *No Answer Retry Limit* is 10 and the *No Answer Retry Interval* is 20 minutes). The system retries the message at 8:50 p.m. (Retry #1). There is still no answer. The system can not retry the message 20 minutes later because this will be within the restricted time period. The stale period is 1 day and 12 hours. The message will be 12.5 hours old by 9:00 am. The system will retry the message at 9:00 a.m. (Retry #2).

Identify retry limits and intervals

When a DNU attempt is unsuccessful, DMS VoiceMail uses Retry Limits to determine how many times it should attempt to send a message to a non-user. Retry Intervals determine how often the retries should be attempted (from 00:00 to 23:50 hh:mm).

There are three types of unsuccessful delivery to non-user attempts: “busy”, “no answer”, and “answered” (where the non-user answers the phone but does not provide DTMF confirmation or does not wait for the message to start playing before disconnecting). Each of these three conditions has a retry limit and retry interval associated with it.

> ***Note 1:*** All intervals are specified in hours and minutes (hh:mm).
>
> ***Note 2:*** In the case of retry limits, the original DNU call does not count. For example, if the no answer retry limit is 10, the original call does not count as the first retry. Instead, this means that the system will call once (the original DNU) plus 10 retries, for a total of 11 DNU calls or attempts.

A detailed retry scenario is provided on page 3-26 to illustrate how these retry limits and intervals are used.

Busy retry limit

This is the number of times the system will attempt to deliver a message to a non-user if the destination number is busy. Between retries, the system waits the amount of time specified as the Busy Retry Interval.

If this limit is exceeded, the No Answer Retry Limit and No Answer Retry Interval are used for further instances of busy. Therefore, if a number remains busy, the number of call attempts would equal the Busy Retry Limit plus the No Answer Retry Limit. If the No Answer Retry Limit is also exceeded, a non-delivery notification (NDN) is sent to the originator of the message and DNU stops for that message.

You may enter a value from 0 to 10. The default is 3.

Busy retry interval

This is the amount of time the system waits before attempting to send the message again if the previous attempt was unsuccessful because the destination number was busy. You may enter a value from 00:00 to 23:59. The default is 00:05.

No answer retry limit

This is the number of times the system attempts to deliver a message to a non-user if the destination number is not answered. When the limit is

exceeded, a non-delivery notification (NDN) is sent to the originator of the message and DNU stops for this message.

You may enter a value from 0 to 10. The default is 10.

No answer retry interval
This is the amount of time the system waits before attempting to send the message again if the previous attempt was unsuccessful because the destination number was not answered.

You may enter a value from 00:00 to 23:59. The default is 00:15.

Answered retry limit
This is the number of times the system attempts to deliver a message to a non-user when the destination number is answered but the recipient does not give required DTMF confirmation (by pressing 2 on the telephone keypad). When the limit is exceeded, a non-delivery notification (NDN) is sent to the originator of the message and DNU stops for this message.

You may enter a value from 0 to 10. The default is 0.

Note 1: If DTMF confirmation is expected, you should not set the Answered Retry Limit higher than one. If the recipient hangs up, he or she probably does not want to hear the message, and DMS VoiceMail should not continue to call the non-user. If the message is delivered to a rotary phone user, the recipient will not be able to press 2, and will become aggravated with repeated attempts to deliver a message.

Answered retry interval
This is the amount of time the system waits before attempting to send a DNU message if the previous attempt was unsuccessful because the destination number was answered, but the recipient did not provide the required DTMF confirmation.

You may enter a value from 00:00 to 23:59. The default is 00:00.

DNU Retry Scenario

Busy Retry Limit = 3; Busy Retry Interval = 5 mins
No Answer Retry Limit = 10; No Answer Retry Interval = 15 mins
Answered (2 not pressed) Retry Limit = 0; Answered Interval = 0 mins
DTMF Confirmation is required

Table 3-3xxx
DNU retry scenario

Time of Message	DNU Action	DNU Result	Further Action
9:30 a.m. Message 1	DNU message 1 sent to DN 1	Answered, 2 not pressed	Answer Retry Limit exceeded. There will be no retry attempt.
9:50 a.m. Message 2	DNU message 2 sent to DN 2	Busy	DNU rescheduled using Busy Retry Limit and Interval
9:52 a.m. Message 3	DNU message 3 sent to DN 3	No Answer	DNU rescheduled using No Answer Retry Limit and Interval
9:55 a.m.	First Busy retry for message 2	Busy	DNU rescheduled using Busy Retry Limit and Interval
10:00 a.m.	Second Busy retry for message 2	Busy	DNU rescheduled using Busy Retry Limit and Interval
10:05 a.m.	Third Busy retry for message 2	Busy	Busy Retry Limit exhausted; DNU rescheduled using No Answer Retry Limit and Interval
10:07 a.m.	First No Answer retry for message 3	Answered, 2 is pressed	DNU attempts stop for message 3
10:20 a.m.	First No Answer retry for message 2	Answered, 2 is not pressed	Answer Retry Limit exceeded; DNU attempts stop for message 2

Identify delivery to non-user addressing prefixes and associated dialing codes

When composing a DNU message, the user has to indicate to the system that the address is not that of an internal DMS VoiceMail user or a distribution list number, but that of a non-user. This is done by entering a DNU prefix. When a user enters this number during message composition the system knows that the number that follows is that of a non-user.

In the Outcalling Options worksheet, you will notice that there are two columns. The first column is where you enter the DNU prefix. This can be any number (although, it is recommended that it be kept as short as possible so that users can remember it easily). The second column is where you enter the associated dialing code. This is the number that DMS VoiceMail actually uses to dial out of the system. The prefix and the dialing code may or may not be identical.

Note: These prefixes cannot conflict with networking location codes, distribution list numbers, or mailbox numbers. However, conflicts with DNs are allowed.

You should configure at least two DNU prefixes: one for external numbers and one for internal numbers. The following example illustrates why you might need a DNU prefix for internal numbers. A phone in a meeting room is not likely to be associated with any particular user, and, therefore, does not have a mailbox, because it is used as a common phone. However, if a user wants to send a message to this phone, it will have to be sent as a DNU message.

The DNU prefix for internal numbers does not require an associated dialing code because DMS VoiceMail does not have to dial out of the system. For example, the extension of the phone in a meeting room is 8001 and the DNU prefix (for internal numbers) is defined as 12. The user enters 128001 and the system dials 8001.

The DNU prefix for external numbers requires an associated dialing code. When DMS VoiceMail places the call, the prefix is replaced by the associated dialing code which is used to generate the actual phone number that is dialed by the system. It is suggested that the prefixes match the dialing codes whenever possible. For example, a prefix of 9 will be replaced with an actual dialing code of 9 (used by DMS VoiceMail to dial outside of the system). This makes it easier for users as they do not have to remember extra numbers. They simply enter the same number that they dial when calling the person. If you are going to allow long-distance numbers to be addressed, you would enter “91” as the prefix and dialing code.

> ***Note:*** You must at the very least define the trunk access code that is used for dialing out of the switch (usually “9”). If you do not, DNU will not be able to deliver messages off-switch.

Prefixes can also be used to simplify the dialing process by replacing longer sequences of numbers with a one-digit number or a short number sequence. For example, your users often send messages to numbers in the 513 area code. Enter a prefix, such as 2, and define the dialing code as 91513.

Inform your users of any DNU prefixes that you create.

> ***Note:*** If the field *Send Message via DNU if Mailbox Not Found* is set to “Yes” in the class of service, messages will be delivered if users fail to enter the DNU prefix when addressing voice messages to non-users.

Identify how many times DNU messages should be played

A DNU message can either be played once or twice to the called party. This feature is intended to cover calls answered by answering machines or by people unfamiliar with automated outcalling systems. By repeating the message, the answering machine is given time to make its announcement and start recording.

The default is 2 (this is also the maximum).

Identify whether or not the DTMF confirmation setting in this screen overrides the setting in the class of service

DTMF confirmation can be enabled or disabled in the user's class of service. If the field *DTMF confirmation overrides user preferences* is set to "Y es", the setting in the following field, *DNU DTMF Confirmation Required*, overrides the setting in the class of service.

The default is "Yes".

Identify whether or not DTMF confirmation is required

DTMF confirmation means that a non-user who receives message from a DMS VoiceMail system must press **2** on the telephone keypad to hear the message. If DTMF confirmation is enabled in the customer group's Outcalling Options screen, all DNU messages (on a customer-wide basis) require DTMF confirmation. When disabled, all DNU messages are delivered automatically upon voice detection.

When deciding whether or not to implement DTMF confirmation consider the following points:

- When an answering machine answers a DNU call, DMS VoiceMail begins playing the message as soon as voice is detected (the answering machine greeting). This means that the start of the DNU message will not be recorded since it will have played before the answering machine begins recording. Therefore, you can either configure DNU to play the message twice so that the entire message will be recorded, or enable DNU DTMF confirmation so that the message will not play at all if answered by an answering machine.
- If DTMF confirmation is enabled, rotary phone users will not be able to receive DNU messages since they cannot press 2.

  Note: This field is also configurable in the class of service. If the previous field, *DTMF confirmation overrides user preferences*, is set to "Yes", the setting in this field overrides the setting in the class of service. However, if the previous field is set to "No", the setting in the user's class of service is used.

The default is "No".

Identify remote notification schedules for users

Users can be notified of new messages at a number of different devices including a remote phone, one of several pager types (tone, voice, digital or numeric), or a general access pager service. Users can choose to be notified of all messages or only those messages that are tagged as urgent.

For each user that will have access to the remote notification feature, a remote notification schedule must be set up either by the user through his or her telephone set, or by the administrator (in the Add or View/Modify Local Voice User screen). This schedule is divided into three different time periods so that a user can be notified at different numbers at different times of the day. Review the remote notification schedule worksheet.

> ***Note for VMUIF users:*** Ensure that user passwords are created for those users that need remote notification capability.

Remote notification to pagers

If any DMS VoiceMail users want remote notifications sent to their pagers, read the following sections for information about pager types and requirements before setting up any remote notification schedules.

The remote notification feature can make calls to the following types of pagers:

- tone-only pager
- tone and voice pager
- digital or numeric (display) pager
- general access pager service

Pager services typically provide one of two pager activation methods to users. Services which cater to a local markets tend to offer DID (direct inward dialing) numbers for pager activation. In this case, each pager is assigned a unique DID number. Tone-only and tone and voice pagers are almost always offered with DID numbers. Services which cater to large regional or national markets tend to offer 800 numbers.

With general access pager services, all pagers share a common local or 800 number. DMS VoiceMail dials this number. After the call has been answered, DMS VoiceMail dials the PIN (pager identification number). DMS VoiceMail sends the callback number after waiting for the pager to play a prompt. This number indicates to the user that DMS VoiceMail has a message waiting and is typically the voice messaging DN. Some pager services require that the entry of the PIN number and call-back numbers be terminated by a special character. Number sign (#) is commonly used and is in fact the default used by DMS VoiceMail. Some services use fixed length PIN numbers and do not accept a terminator character.

Pager requirements and pager types

Certain requirements must be met for DMS VoiceMail to work properly with the supported pagers and paging services. For a remote notification message to be delivered successfully, DMS VoiceMail must recognize that the paging company has responded to its call. A call is considered answered under the following conditions. (Note that any type of pager will use one of the following methods and this will vary from pager to pager.)

1 There is voice detection. (For example, the greeting of the paging company.) This is the preferred method.

   If voice is detected, DMS VoiceMail will wait a maximum of 20 seconds for silence to be detected. When silence is detected, or when the timeout period expires, DMS VoiceMail will continue with notification delivery.

2 There is tone detection. This tone can have one of the following frequencies:

   a. 1400 Hz - the Northern American standard frequency. This tone must have a maximum duration of 3.5 seconds.

   b. 1000 Hz - only if a minimum of two on-off cycles are presented and the maximum duration is 5.0 seconds. Call your Northern Telecom support organization if it is necessary to extend this pager tone recognition time.

   As soon as DMS VoiceMail detects the pager tone, it will continue with the notification delivery.

3 The paging company answers the call only *after* the calling side (DMS VoiceMail) has been allowed to hear the ringback tone cycle two times. At this point, a tone or voice prompt may be provided. Using this method, the frequency of the answering tone is no longer important, but the timing of the DMS VoiceMail interaction will be delayed. The service must be prepared to wait for seven seconds after it has responded with an answering signal before receiving a reply from DMS VoiceMail.

If a pager fails to respond to a remote notification call, call the paging company to ensure that the user's pager meets one of the above requirements.

Once the tone or voice has terminated, the service must be immediately ready to accept the DMS VoiceMail response. What is received from DMS VoiceMail depends on the pager type that has been specified by the user. (This can be viewed in the user's remote notification schedule in the Add or View/Modify Local Voice User screen.) See the following sections for more details.

The following sections describe how the different types of supported pagers are handled by DMS VoiceMail.

Tone-only and tone and voice pagers

Both tone-only and tone and voice pagers are handled in the same way by DMS VoiceMail. DMS VoiceMail plays the notification prompt immediately after recognizing that the call has been answered.

Numeric pagers

With a display or numeric pager, DMS VoiceMail sends a callback number and a pager data terminator. The callback number is the number the user must dial to retrieve new messages, and is usually the DMS VoiceMail access number. The callback number may consist of up to 8 characters, using the decimal digits “0-9” and the asterisk. DMS VoiceMail gets the callback number from one of two places: either the user profile (from the remote notification schedule) or, if it is not defined for the user, from the Outcalling Options screen.

Some paging companies require a pager data terminator character. This terminator character is defined in the Outcalling Options screen and is used to terminate the callback number. The default is the number sign (#).

After DMS VoiceMail recognizes that a notification call has been answered, it waits two seconds. If a callback number and/or pager data terminator are defined, they are outpulsed and there is a three second delay. A voice prompt is then played to notify the paging company that a message has been received in the user’s mailbox.

General access pager services

If a user wants remote notifications to be sent to a general access pager service, the user must define the pager ID number. (If the administrator is creating the remote notification schedule, this number is defined in the Add or View/Modify Local Voice User screen where you normally define the callback number.) You, therefore, cannot customize the callback number for each user. Instead, DMS VoiceMail gets the callback number from the Outcalling Options screen.

The pager data terminator is defined in the Outcalling Options screen and is used to terminate both the pager ID number and the callback number. The default is the number sign (#). If no terminator character is required, this field should be made blank.

After DMS VoiceMail recognizes that a notification call has been received, it waits two seconds before the pager ID and the pager data terminator are outpulsed. DMS VoiceMail then waits for the paging company to answer with voice or tone. When DMS VoiceMail receives an answer, there is a two second delay. If a callback number and/or a pager data terminator are defined, they are outpulsed and there is a three second delay. A voice prompt is then played to notify the paging company that a message has been received in the user’s mailbox.

Setting up remote notification schedules for users

In most cases users will set up their own remote notification schedules and this step will not be necessary. This will be the case if the user belongs to an MMUI customer group and if the *Remote Notification Keypad Interface* field is set to "Yes".

However, it will be your responsibility to set up these schedules if:

- Users belong to a VMUIF customer group (you do not have the option of enabling the keypad interface for these users).
- Users belong to an MMUI customer group but the *Remote Notification Keypad Interface* field (in the class of service) is set to "No".
- Users belong to an MMUI customer group and the *Remote Notification Keypad Interface* field (in the class of service) is set to "Yes", however, for whatever reason the user does not want to create his or her own schedule.

If you will be setting up remote notification schedules for any of your users, discuss with them the time periods they want set up, the target DNs to which remote notification will be sent, the device represented by the target DN (phone, tone and voice pager, tone-only pager, etc.), and whether they want to be notified of all messages or only urgent messages. Obtain a Remote Notification Schedule worksheet (see the following page) for each user for whom you will be creating a schedule. There is also a copy of this worksheet in Appendix A. Keep together all remote notification schedule worksheets for a particular class of service.

Remote Notification Schedule

Page 1 of 3

For User (name): _____ **DN:**_____

Message Remote Notification Option: Any ❑ Urgent ❑
Does the user want to be notified of all new messages or just those tagged as urgent?

Business Days Schedule

Period 1 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 2 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 3 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Remote Notification Schedule

For User (name): _____ **DN:**_____

Non-Business Days Schedule

Period 1 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 2 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 3 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Remote Notification Schedule

Page 3 of 3

For User (name): _____ **DN:**_____

Temporary Schedule up to midnight of (dd/mm/yy):_____

Period 1 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 2 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 3 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Identify if the user wants to be notified of all new messages or urgent messages only

If you set the *Message Remote Notification Option* field to "Any", the user will be notified of each new message that arrives during a defined time period. If it is set to "Urgent", the user will be notified of only those messages that are tagged as urgent during a defined time period.

Identify the schedules that are necessary

Does the user need a business days schedule, a non-business days schedule or both? Are there any special circumstances that require a temporary schedule?

The temporary schedule overrides the business and non-business days schedules until midnight of the date specified, including the current day. When the duration of the temporary schedule expires, the schedule is automatically disabled.

Identify up to three time periods for each schedule

For each schedule that is required, identify how the day is to be split up into time periods. Each schedule can be divided in up to three different time periods. However, you do not have to define all three periods. A schedule can have only one time period if desired.

Make sure that

- the time periods are chronologically correct (for example, it is not valid if the second time period starts at 10:00 and ends at 14:00 and the first time period starts and 14:01 and ends at 19:00)
- the time periods do not overlap (for example, the second time period cannot start at 12:00 if the first time period ends at 13:00)

Identify the target DNs and target devices

For each time period, define the target DNs. Up to three DNs can be specified for each time period.

WARNING

Do not enter the user's own extension as the target DN

This will cause a cyclical build-up of messages in the user's mailbox until the disk is full. The retry repeat cycle is not halted because each retry repeat causes a new message to be sent, which in turn starts remote notification all over again for the new messages.

For each target DN note the type of device. The choices are:

- ***Phone,*** if the target DN is the number of a telephone.
- ***Tone,*** if the target DN is the number of a tone-only pager.
- ***Voice,*** if the target DN is the number of a tone and voice pager.
- ***Numeric,*** if the target DN is the number of a digital or numeric pager with DID access (i.e., the pager can be directly dialed).

  In this case, you can also customize the Pager Callback Number for the user. The pager callback number indicates to the user that DMS VoiceMail has a message waiting. This number is typically the DMS VoiceMail access number. The number can be up to 8 digits long. You cannot, therefore, enter any long distance dialing codes.

  If you do not specify a callback number for the user, the number defined in the *Default Numeric Pager Data* field in the customer group's Outcalling Options screen will be used.

- ***Service,*** if the target DN is the number of a digital or numeric pager with general access (i.e., a general access number, such as a 1-800 number is dialed first and then a PIN, or personal identification number, is entered to identify the user's pager).

  You must also identify the PIN of the user's pager. Enter this number in the worksheet where you would normally enter the callback number.

  Since you cannot customize the callback number when the device is a general access paging service, the system will use the number defined in the *Default Numeric Pager Data* field in the customer group's Outcalling Options screen.

Perform a final check

You have finished planning the outcalling service. You should have the following completed worksheets:

- a list of all outcalling users
- one detailed "Class of Service - Outcalling Parameters" worksheet for each class of service identified
- for each outcalling class of service identified, a list of all users assigned to that class of service
- one completed "Outcalling Options" worksheet (for each customer group)
- for each remote notification user for whom you must create a remote notification schedule, a completed "Remote Notification Schedule" worksheet

You are now ready to configure outcalling. Go on to the next chapter.

Configuring outcalling

Before carrying out any of the procedures in this chapter, make sure you have the appropriate worksheets on hand. See the preceding chapter "Planning outcalling" for details about filling out worksheets. With completed worksheets on hand, you simply need to copy the information into the system.

Configure the outcalling classes of service

The first step in configuring the Outcalling service is to enable the remote notification and/or delivery to non-users feature in one or more classes of service. This is done in the Add (or View/Modify) Class of Service screen.

With your "Class of Service - Outcalling Parameters" worksheet on hand, follow Procedure 4-1 to set up your classes of service in DMS VoiceMail.

Note: This procedure is carried out at the system administration level.

Procedure 4-1xxx
Setting up outcalling in classes of service

Starting point: The Main Menu.

Note: *Field descriptions are in the preceding chapter, "Planning outcalling".*

1 Select Class of Service Administration.

2 To add a class of service, go to step 2a. To modify an existing class of service, go to step 2b.

a. Press [Add].

You are prompted for the class of service number.

b. Press [View/Modify].

You are prompted for the class of service number.

3 Enter the class of service number (either a new number if adding a COS, or the number of the COS you want to modify). The number must be between 1 and 127.

The Add (or View/Modify) Class of Service screen is displayed.

4 If you are adding a class of service, go to step 4a. If you are modifying a class of service, go to step 5.

a. Give the class of service a name.

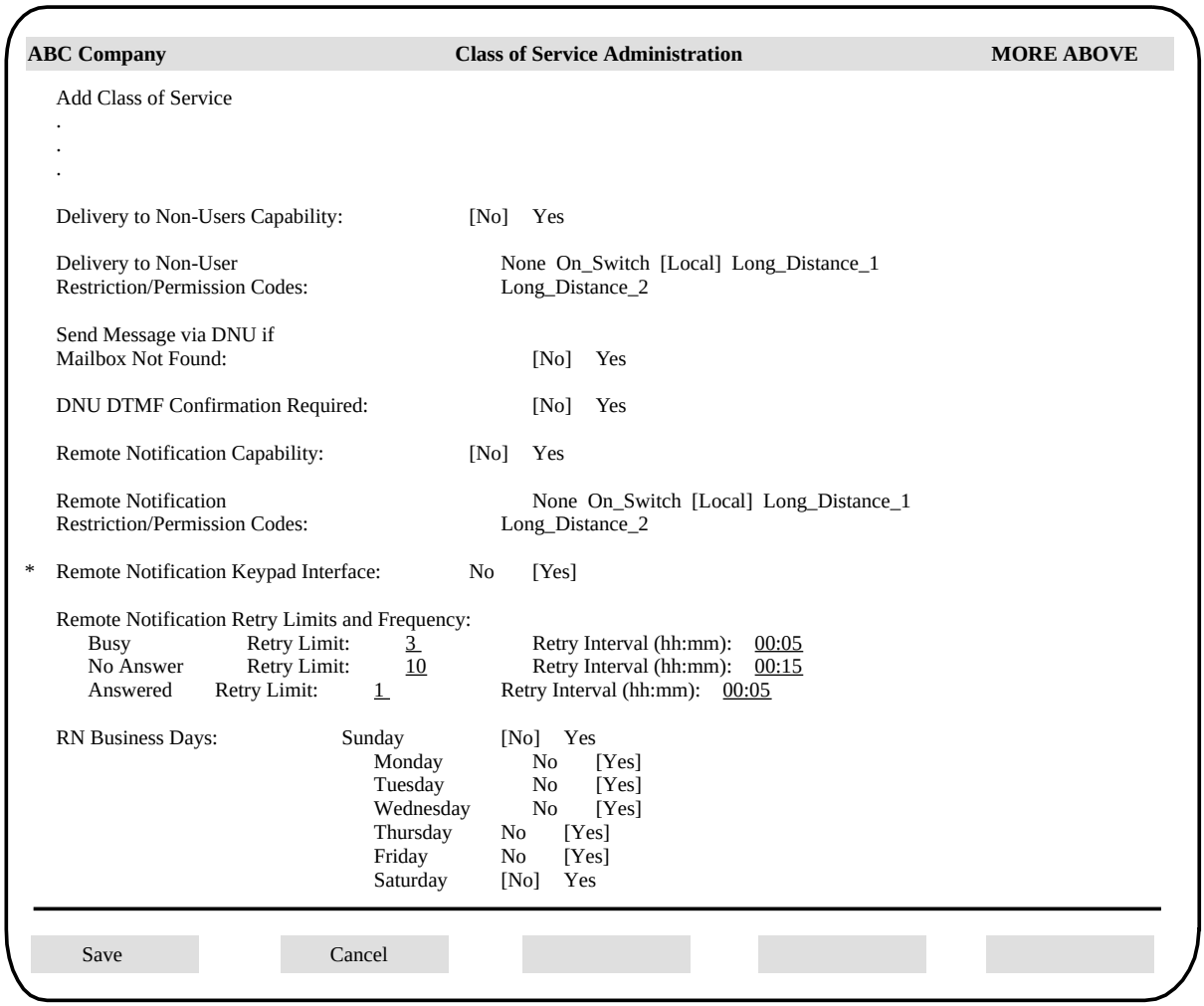
When naming a class of service, keep in mind that only the first 10 characters will show up in the user administration screens. Therefore, make sure that the first 10 characters of a class of service name easily identify it and distinguish it from other classes of service. This will make it clear which class of service to select when assigning users to classes of service in user administration.

b. Choose the voice messaging interface type (MMUI or VMUIF).

c. Press [Change Defaults] to access the outcalling fields *(see Figure 4-1)* . Continue with step 5.

5 Cursor down to the field *Delivery to Non-User Capability*.

Figure 4-1xxx
Outcalling fields in the Add Class of Service screen



* This field is applicable only if the interface type is MMUI.

To configure delivery to non-user parameters, follow steps 6 to 9.

6 Enable Delivery to Non-Users by setting the *Delivery to Non-Users Capability* field to “Yes”.

7 Select a restriction/permission codes set for DNU.

8 Specify whether or not messages should be sent via DNU if the mailbox number is not found in the system.

9 Specify whether or not DNU DTMF confirmation is required.

To configure remote notification parameters, follow steps 10 to 14.

10 Enable Remote Notification by setting the *Remote Notification Capability* field to “Yes”.

11 Select a restriction/permission codes set for RN.

12 For MMUI customer groups, you can allow users to create their own remote notification schedules by setting the *Remote Notification Keypad Interface* field to “Yes”.

13 Define remote notification retry limits and intervals.

14 Define remote notification business days. Set business days to “Yes” and non-business days to “No”.

15 Press the [Save] softkey to save the new or modified class of service.

16 To add or modify another class of service, enter the number and press <Return>. To exit this screen press [Cancel].

17 To view a list of the existing classes of service, press [Find]. Then press [List] (do not fill out the Find screen). Verify that RN, DNU or both features have been enabled in the classes you have just created by checking the DNU/RN column.

Configure system-wide outcalling options

While you are at the system administration level, configure the system-wide parameters which affect the collection of audit trail data. Refer to your “Outcalling Options” worksheet.

Procedure 4-2xxx
Configuring system-wide parameters in the Outcalling Options screen

Starting point: The Main Menu.

1 Select Voice Administration.

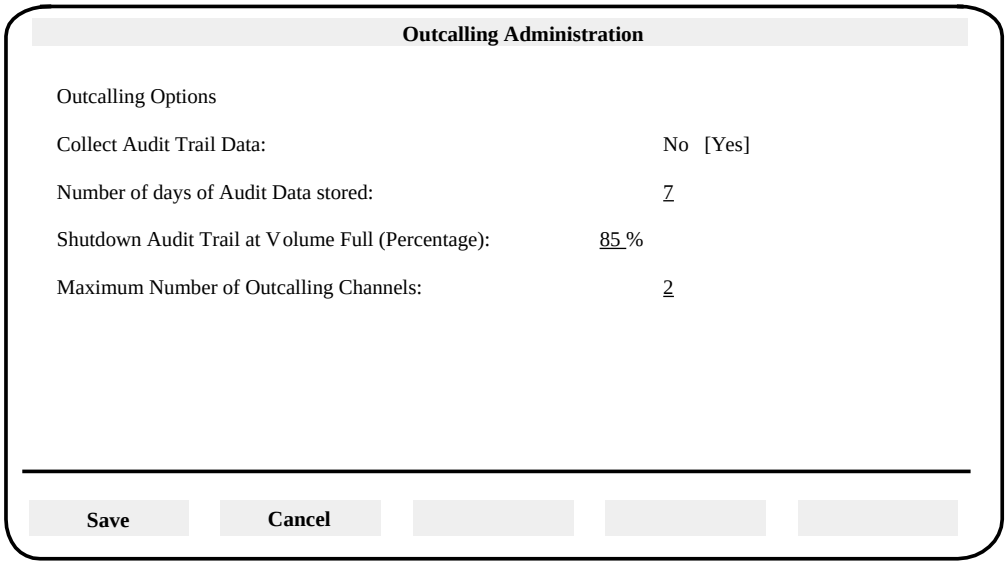
2 Select Outcalling Administration.

3 Select Outcalling Options.

The Outcalling Options screen is displayed (Figure 4-2).

***Note:** Field descriptions are provided in the chapter “Planning outcalling”.*

Figure 4-2xxx
The Outcalling Options screen (system administration level)



4 Modify the existing information as needed.

5 Select [Save].

The changes are saved and you are returned to the Outcalling Administration menu.

Assign classes of service to customer groups

For each customer group, access the General Options screen (at the customer administration level). If the users in a customer group are to have access to either the remote notification feature or the delivery to non-users feature (or both), at least one class of service that has these features enabled must be assigned to the customer group.

For more information about the General Options screen, see the "General Administration" chapter in the *Customer Administration Guide*.

Procedure 4-3xxx
Assigning classes of service to customer groups

Starting point: The Customer Administration Menu.

1 Select General Administration.

2 Select General Options.

The General Options screen is displayed.

3 In the *Class of Service Selection* field, enter the numbers of the outcalling classes of service you want to make available to this customer group.

4 Choose step 4a to save the changes, or 4b to cancel.

a. Use [Save].

The changes are saved and you are returned to the General Administration menu.

b. Use [Cancel].

You are returned to the General Administration menu.

Configure remote notification and/or delivery to non-user parameters in the Outcalling Options screen

With your "Outcalling Options" worksheets on hand (one for each customer group), follow Procedure 4-4 to configure outcalling parameters in the Outcalling Options screen at the customer administration level.

Procedure 4-4xxx
Configuring customer-specific outcalling parameters in the Outcalling Options screen

Starting point: The Main Menu.

1 Select Customer Administration.

2 Select a customer group.

The Customer Administration menu is displayed.

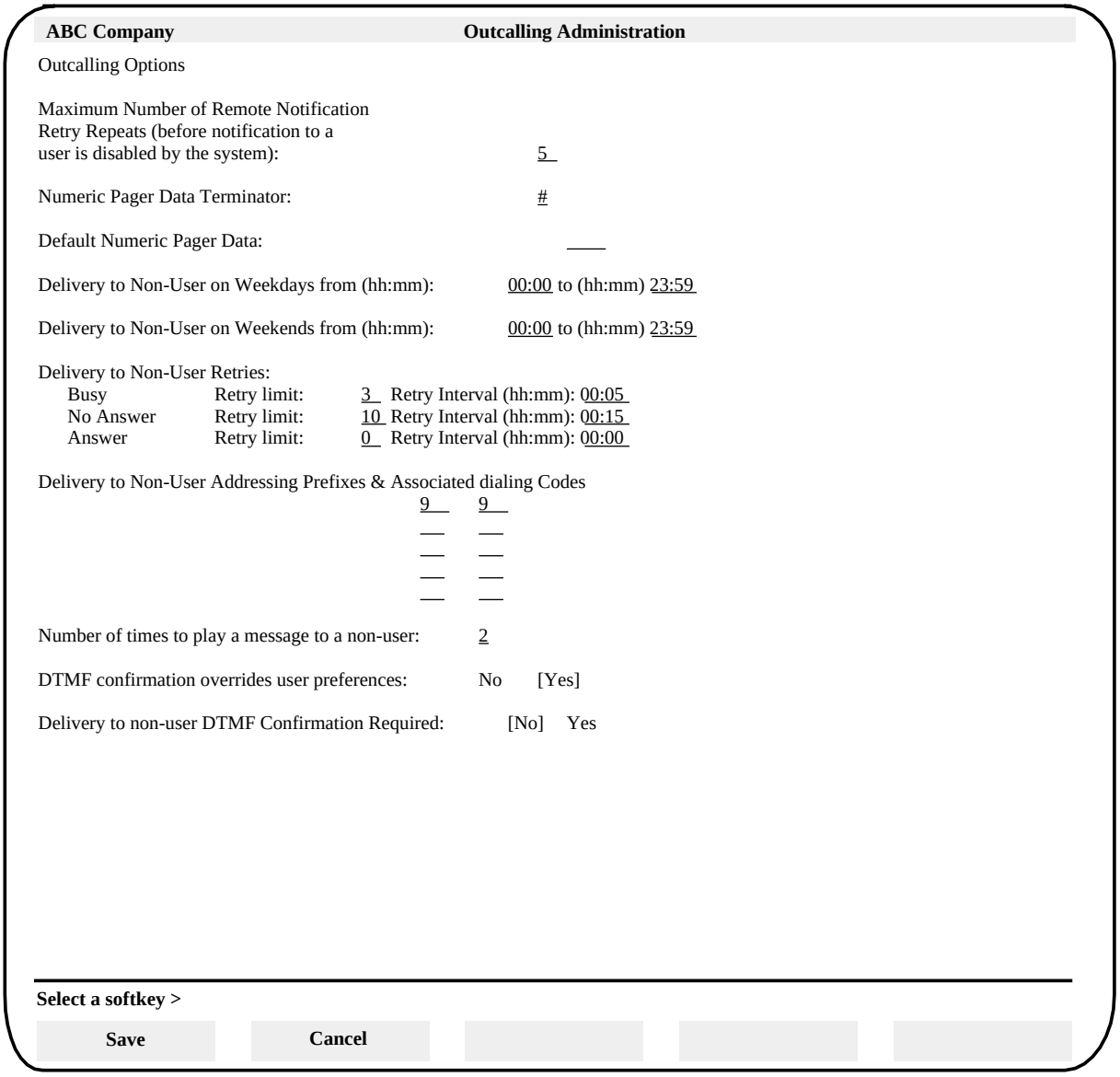
3 Select Voice Administration.

4 Select Outcalling Administration.

5 Select Outcalling Options.

The Outcalling Options screen is displayed (Figure 4-3).

Figure 4-3xxx
The Outcalling Options screen (customer administration level)



Steps 6 to 8 are necessary if any users require remote notification.

6 Specify the number of RN retry repeats.

7 Specify the numeric pager data terminator.

8 Specify the default numeric pager data.

Steps 9 to 15 are necessary if any users require delivery to non-user functionality.

9 Specify the hours during which DNU calls are allowed to be placed on weekdays.

10 Specify the hours during which DNU calls are allowed to be placed on weekends.

11 Change the DNU retry limits and retry intervals if necessary.

12 Enter DNU addressing prefixes and their associated dialing codes.

13 Specify the number of times that a message is to be played to a non-user.

14 Specify whether or not the setting in the next field, *Delivery to Non-User DTMF Confirmation Required*, should override the setting in the user's class of service.

15 Specify whether or not DTMF confirmation is required.

16 Choose step 16a to save the changes, or 16b to cancel.

a. Use [Save].

The changes are saved and you are returned to the Outcalling Administration menu.

b. Use [Cancel].

You are returned to the Outcalling Administration menu.

Assign users to the appropriate class of service

With your class of service lists (which identify which users are assigned to a class of service), assign users to the appropriate class of service. Refer to your list of users (as grouped by class of service).

Procedure 4-5xxx
Changing a user's class of service

Starting point: The Customer Administration Menu.

1 Select User Administration.

2 Select Local Voice User.

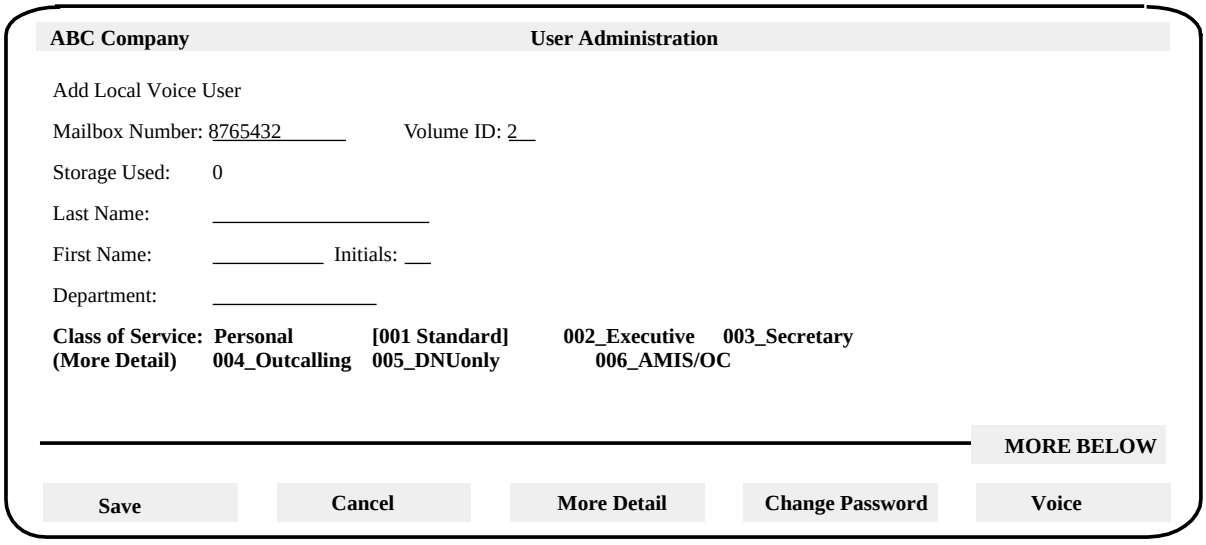
3 Press the [Add] softkey if you are adding a new user, or [View/Modify] to reassign an existing user to another class of service.

You are prompted for a mailbox number.

4 Enter the user's mailbox number followed by <Return>.

The Add (or View/Modify) Local Voice User screen is displayed.

Figure 4-4xxx
The Add Local Voice User screen (basic fields)



5 If you are adding a user, complete the necessary mailbox information.

6 In the *Class of Service* field, select a class of service that has RN, DNU or both features enabled.

7 Choose step 7a to save the changes, or 7b to cancel.

a. Use [Save].

The changes are saved and you are returned to the User Administration menu.

b. Use [Cancel].

You are returned to the User Administration menu.

Configure remote notification schedules

To create a remote notification schedule in DMS VoiceMail, follow Procedure 4-6.

Procedure 4-6xxx
Creating a remote notification schedule

Starting point: The Main Menu.

1 Select Customer Administration.

2 Select the customer group to which the user belongs.

3 From the Customer Administration menu for that customer group, select User Administration.

4 Select Local Voice User.

5 Press the [Add] softkey if you are adding a new user or the [View/Modify] softkey to create a schedule for an existing user.

You are prompted for a mailbox number.

6 Enter the user's mailbox number followed by <Return>.

If you are adding a new user, the Add Local Voice User Screen is displayed.

If you have entered the mailbox number of an existing user, the View/Modify Local Voice User screen is displayed.

7 Move the cursor to the *Remote Notification Schedules (More Detail)* field.

8 Press the [More Detail] softkey.

The outcalling fields are displayed. See Figure 4-5.

Figure 4-5xxx
The Add Local Voice User screen (outcalling fields)

ABC Company **User Administration** **MORE ABOVE**

Add Local Voice User - Outcalling Fields

Current State of Remote Notification: On

Message Remote Notification Option: [Any] Urgent

Business Days Schedule

* Period 1 from (hh:mm):_____ to (hh:mm):_____ [Disabled] Enabled

Target 1 DN: 95552801_____ [Phone] Tone Voice Numeric Service
Pager Callback Number: _____
Target 2 DN: 95559087_____ Phone Tone Voice [Numeric] Service
Pager Callback Number: 5552398___
Target 3 DN: 918005556644_____ Phone Tone Voice Numeric [Service]
Pager ID Number: 5559776__

Non-Business Days Schedule:

* Period 1 from (hh:mm):_____ to (hh:mm):_____ [Disabled] Enabled

Target 1 DN: _____ [Phone] Tone Voice Numeric Service
Pager Callback Number: _____
Target 2 DN: _____ [Phone] Tone Voice Numeric Service
Pager Callback Number: _____
Target 3 DN: _____ [Phone] Tone Voice Numeric Service
Pager Callback Number: _____

Temporary Schedule up to midnight of (dd/mm/yy):_____

* Period 1 from (hh:mm):_____ to (hh:mm):_____ [Disabled] Enabled

Target 1 DN: _____ [Phone] Tone Voice Numeric Service
Pager Callback Number :_____
Target 2 DN: _____ [Phone] Tone Voice Numeric Service
Pager Callback Number :_____
Target 3 DN: _____ [Phone] Tone Voice Numeric Service
Pager Callback Number: _____

The Outcalling Fields data will be saved only if the user is saved.

Return to Basic Fields

*There are actually three periods listed for each schedule, each with three targets.
Note: **The** *Current State of Remote Notification* **field is read-only. This field will be set to "Off" if the Maximum Number of Retry Repeats has been exceeded.**

9 Specify if the user wants to be notified of any messages or only urgent ones.

10 Create a business day schedule. For each time period necessary

a. Enter the from and to time.

b. Enable the time period.

c. Enter up to three target DNs. For each target DN, specify the type of device.

d. For numeric pagers, specify the Pager Callback Number. For general access pager services, enter the Pager ID Number.

11 Create a non-business days schedule. For each time period necessary

a. Enter the from and to time.

b. Enable the time period.

c. Enter up to three target DNs. For each target DN, specify the type of device.

d. For numeric pagers, specify the Pager Callback Number. For general access pager services, enter the Pager ID Number.

12 Create a temporary schedule if necessary.

a. Enter the date on which the temporary schedule should be disabled.

The schedule will be disabled at midnight of that day and the business days or non-business days schedule will be used.

For each time period necessary

b. Enter the from and to time.

c. Enable the time period.

d. For each period necessary, enter up to three target DNs. For each target DN, specify the type of device.

e. For numeric pagers, specify the Pager Callback Number. For general access pager services, enter the Pager ID Number.

13 Press the [Return to Basic Fields] softkey when you are done.

14 Press the [Save] softkey to save the user and remote notification schedule information.

Note: *To temporarily disable a time period, select "Disabled". To delete a time period, delete the associated "from" and "to" times and the target DNs and save.*

Test outcalling

Before cutting over outcalling services to DMS VoiceMail users, ensure that they work properly.

Remote notification

For each local voice user that has access to remote notification, leave a message for the user and watch the outcalling server process the calls.

Follow the remote notification schedule to verify it is working as configured.

If the administrator is not responsible for creating remote notification schedules, users should be informed that they need to test remote notification after setting up or changing a schedule to ensure that it works as they expect it to.

Delivery to non-user

For each class of service in which delivery to non-user is enabled, locate a phone with a mailbox and compose a message to a non-user. The “non-user” should be at the phone to pick up the call. Get feedback from the “non-user” to determine if the service is working as you have planned it. Try composing to a variety of numbers to ensure that the appropriate restriction/permission codes are being applied.

Managing and maintaining outcalling

By keeping good records and monitoring outcalling operational measurements, you will be able to manage your outcalling service efficiently.

Keep good records

Make sure all worksheets are kept up-to-date and filed. Whenever a change is made to an outcalling parameter, update the worksheets. You may want to print each of the screens as you configure them. This is another way of keeping an accurate record of the current configuration.

Monitor operational measurements

Outcalling audit trail statistics allow you to monitor how users are using the remote notification and delivery to non-users features. There are two outcalling audit trail reports that you can generate: a summary report and a detail report. Each report provides outcalling data for a certain period of time (as specified by you).

The summary report provides the following information:

- the user's name
- the user's mailbox number
- the type of call (DNU or RN)
- the call status (answered, busy, etc.)

The detail report provides the following information:

- the user's name
- the user's mailbox number
- the time at which the transaction started
- the duration of the transaction
- the specific outcall process
- the device (pager, phone, pager service) and the target number
- the channel DN of the channel that was used to place the outcall
- the number of retries

Generating an outcalling audit trail report

The Outcalling Audit Trail Report screen (Figure 5-1) is accessed from the Outcalling Administration menu. This is a report selection screen in which you specify the type of report you want to retrieve (summary or detail) as well as the duration of the report period.

The summary report shows each outcall (RN or DNU) that was made during the reporting interval along with the user that made the call, the user's mailbox number, the target number and the status of the call. It shows only completed (i.e., answered) calls.

The detail report provides a more thorough account of each outcall request, including the start time and duration of the call, the DN of the channel that was used to place the call and the number of retries (if any). It shows all outcalls, both successfully completed and unsuccessful.

You must specify whether you want to generate a report for a particular user, mailbox number, phone number, or all. You can either generate a report that includes all of the information currently stored on disk for that user (mailbox number or phone number) or generate a shorter report for a specific time period. The report can either be viewed on your terminal or printed.

Procedure 5-1xxx
Generating an outcalling audit trail report

Starting point: The Customer Administration Menu.

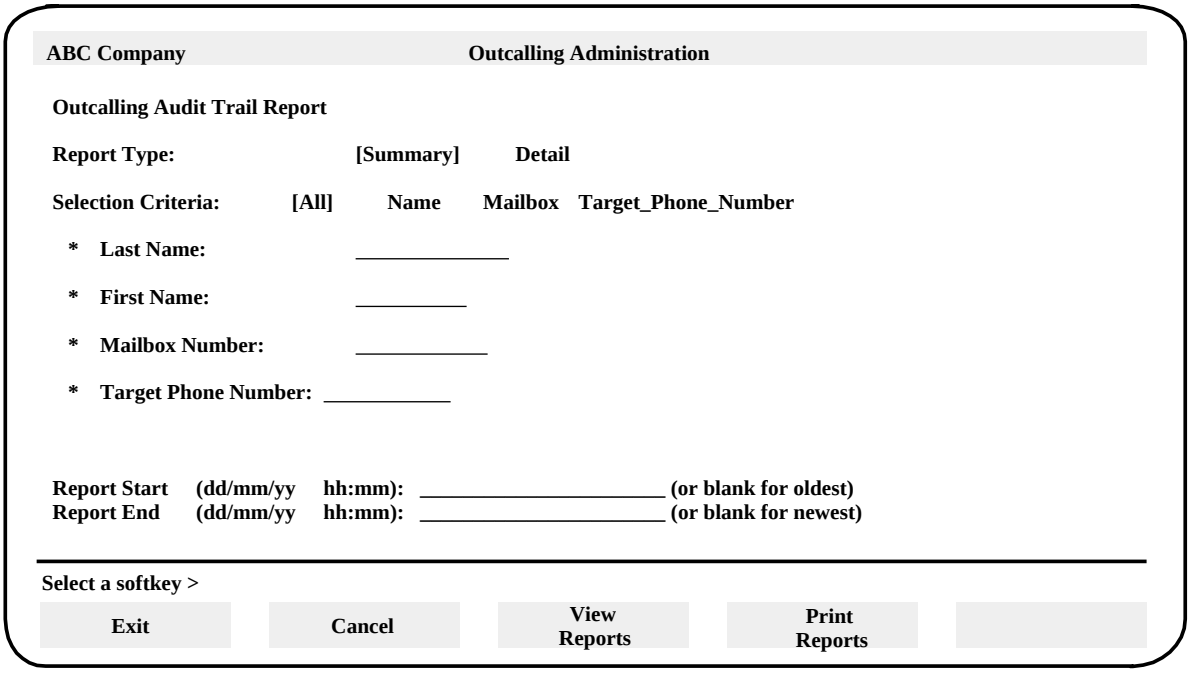
1 Select Voice Administration.

2 Select Outcalling Administration.

3 Select Outcalling Audit Trail Report.

The Outcalling Audit Trail Report screen (Figure 5-1) is displayed.

Figure 5-1xxx
The Outcalling Audit Trail Report



* Only one of these fields will be displayed, depending on the Selection Criteria.

Note: Field descriptions are provided on page 5-4.

4. Specify the report type (summary or detail).
5. Specify the selection criteria (name, mailbox, target phone number or all).
6. Fill in the field that corresponds to the selection criteria you chose.
7. Enter the report start and end times.

   If these fields are left blank, all outcalling data that is currently stored on disk will be retrieved.

8. To view the report on screen, go to step 8a. To print the report, go to step 8b.
   a. Press [View Reports].

      If you selected Summary, see the section "The summary outcalling audit trail report". If you selected Detail, see the section "The detail outcalling audit trail report".

   b. Press [Print Reports].

      A new set of softkeys are displayed: [Cancel Printing] and [Continue Printing].

      Use [Continue Printing] to print the report or [Cancel] if you do not want to print the report.

      If you selected [Continue Printing], a [Cancel] softkey is displayed which can be used to cancel printing once printing has started.

9 If you are viewing the report, use [Next Page] to view the next page of the report.

When the last page has been displayed, a prompt appears indicating it is the end of the report.

10 Use [Exit].

You are returned to the Outcalling Audit Trail Reports screen.

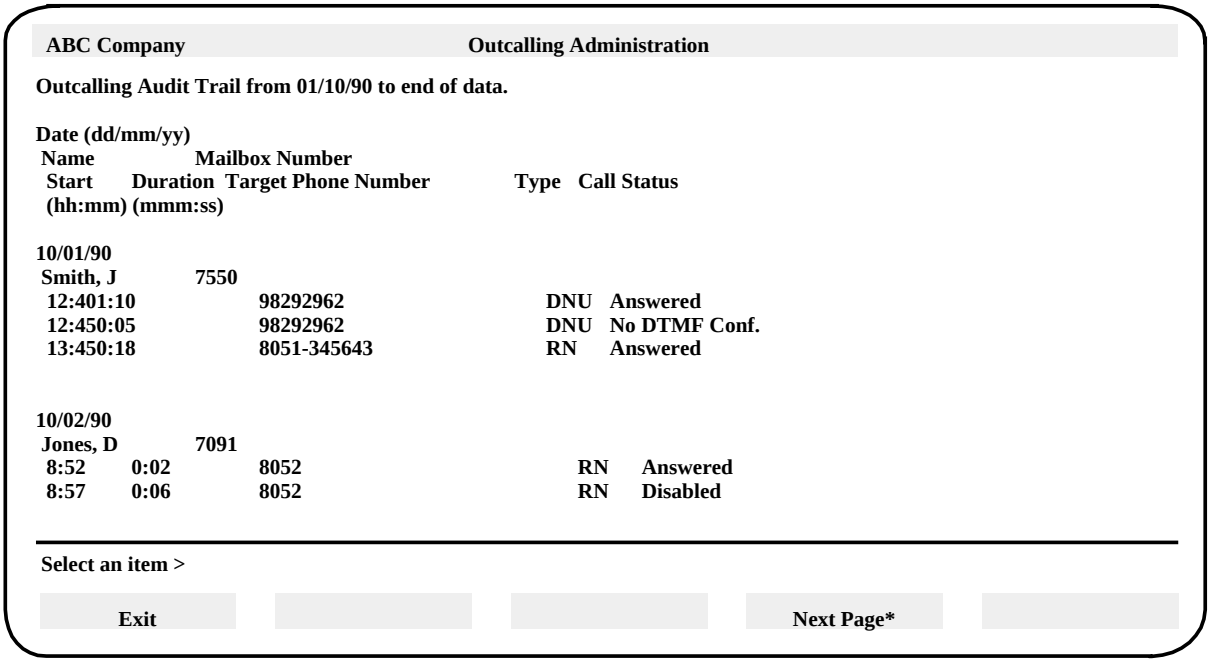
The following fields are displayed on the Outcalling Audit Trail Report screen:

- ***Report Type*** - Your options are Summary and Detail. A summary report shows only completed calls. A detail report shows all attempts, both successful and unsuccessful.
- ***Selection Criteria*** - All entries in the database can be viewed or you can view data for a specific user, mailbox number, or phone number.
- ***Last Name*** - This field is displayed if *Selection Criteria* is set to "Name". If you want to view outcalling data for a particular user, enter that user's last name (and first name in the next field as there may be more than one user with the same surname). This field accepts all characters, except "+", "?" and "_" (underscore).
- ***First Name*** - This field is displayed if *Selection Criteria* is set to "Name". If you want to view outcalling data for a particular user, enter that user's full first name (as well as the last name in the previous field). This field accepts all characters, except "+", "?" and "_" (underscore).
- ***Mailbox*** - This field is displayed if *Selection Criteria* is set to "Mailbox". To view outcalling data for a specific mailbox, enter the full mailbox number. This field accepts numeric data only.
- ***Target Phone Number*** - This field is displayed if *Selection Criteria* is set to "Target Phone Number". To view outcalling data for a particular target phone number or pager number (the number entered in the *Target DN* field in the outcalling schedule), enter the full number in this field. This field accepts numeric data only.
- ***Report Start/End*** - Enter the start and end date and time to indicate the reporting period.

The Summary Outcalling Audit Trail Report

The Summary Outcalling Audit Trail Report (Figure 5-3) is displayed if you selected “Summary” as the report type.

Figure 5-2xxx
The Summary Outcalling Audit Trail Report



*This softkey is displayed if data fills more than one screen.

The summary report displays the following information:

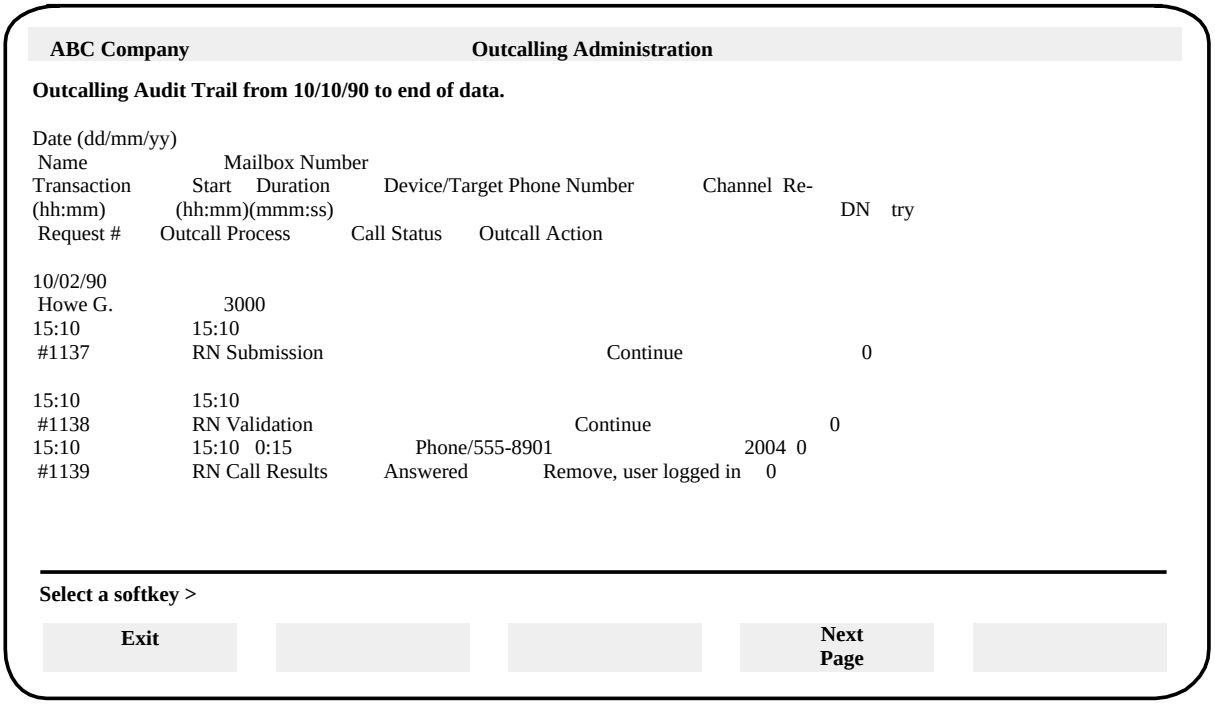
- ***Date*** **-** The date the call was made.
- ***Name*** **-** The name of the DMS V oiceMail user who initiated the call.
- ***Mailbox Number*** **-** The mailbox that originated the call.
- ***Start Time*** - The time at which the call was made.
- ***Duration*** - The length of the call in minutes and seconds.
- ***Target Phone Number*** - The number called. A maximum of 30 digits can be displayed in this field. For calls placed to paging services (such as SkyPager), the PIN number is also displayed (e.g., in 8051-345643, the last 6 digits are the PIN number). If the full number is longer than 30 digits, the first few digits in the paging service phone number will be truncated.
- ***Type*** - This field displays the outcalling service that was used: either Remote Notification or Delivery to Non-User.
- ***Status*** - This field displays the result of the call.
  - ***Answered*** indicates that the destination number was answered and the message was heard by the called party.

- ***RN Disabled*** indicates that the called party answered and pressed 3 to disable RN.
- ***No DTMF Confirmation*** indicates that the called party did not press 2 to hear a DNU message (not relevant if DTMF confirmation is not required).
- ***Not Played*** indicates that the called party disconnected before the DNU message was played.

The Detail Outcalling Audit Trail Report

The Detail Outcalling Audit Trail Report (Figure 5-3) is displayed if you selected “Detail” as the report type.

Figure 5-3xxx
The Detail Outcalling Audit Trail Report



In addition to the information displayed in the summary report, the detailed report contains the following information:

- ***Transaction Time*** - The time at which the delivery should have taken place.
- ***Start Time*** - The time at which the current outcall process started.
- ***Duration Time*** - The length of the call.
- ***Device/Target Phone Number*** - The type of device called followed by the phone/pager number. The device will be one of the following:
  - Phone

- ToneP (tone pager)
- V oice (voice pager)
- NumPa (numeric pager)
- PaSrv (pager service)

If the device is a paging service, the paging service phone number, followed by the pager identification number (PIN) will be displayed. The maximum length for this field is 30 digits. If this limit is exceeded, the first few digits of the paging service phone number will be truncated.

- ***Channel DN*** - The DN associated with the voice channel used.
- ***Retry*** - The number of retries that have been made at the time of the attempt. This field is incremented by one each time:
  - a DN is busy and is retried or
  - when multiple target DNs are defined and they have all been tried and either not answered or answered with no login
- ***Transaction Request Number*** - A unique number identifying the (RN or DNU) request.
- ***Outcall Process*** - The type of audit trail entry. This could be:
  - ***Submission*** - indicating that a request has been made for an outcalling service.
  - ***Recovery*** indicates that messages for outcalling have been detected and submitted after a system reboot.
  - ***Logout/Admin*** indicates that one of two conditions has occurred. The first possibility is that a user has logged out with unannounced messages left in their mailbox. Normally, if a user is listening to a message when a new message comes in, the new message is announced after the user has finished listening to the other message. However, if the user hangs up before the message has finished playing, the new message will not be announced. (In this situation, the user will continue to be notified of messages.) The second possibility is that an administrator has modified a user's account while there were unread messages in the user's mailbox.
  - ***V alidation*** indicates a checking process just before a call was/is made;
  - ***Call Results*** indicates information regarding the Call Status and Outcall Action in the adjacent fields (to the right).
- ***Call Status*** - This is a general statement of the results of a call. The possibilities are
  - ***Busy*** - The RN or DNU target DN was busy. A retry attempt will be scheduled if the busy and no answer retries have not been exhausted.

- ***Answered*** - An outcall to an RN or DNU target DN was placed. In the case of remote notification, the call was answered but the user did not log in on the same call to listen to the message. Remote notification will be rescheduled if the answered retries have not been exhausted. In the case of delivery to non-user, a call was answered and the message was successfully delivered.
- ***No Answer*** - An outcall to an RN or DNU target was placed and the call was not answered. A retry attempt will be scheduled if the no answer retries have not been exhausted.
- ***No DTMF Conf*** - An outcall to a DNU target DN was placed. The call was answered but the caller did not provide the required DTMF confirmation (in other words, he or she did not press "2" to hear the message). DNU will be rescheduled if the answered retries have not been exhausted.
- ***Reorder*** - During an outcall, the target DN was dialed, and a reorder tone was detected. The primary reasons for a reorder tone are: an invalid DN was called, there were no resources to complete the call, or there were access restrictions that the DN violated. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries have not been exhausted.
- ***Resource Delay*** - The outcall was not completed because the line on which the call was to be made was taken away due to an incoming call which was given priority. The outgoing call is retried on a different channel. If this is a persistent problem, reserve channels for outcalling and make sure no terminate on them.
- ***Incomplete*** - The outcall could not be completed. The call attempt will be treated as a busy attempt, and a retry attempt will be scheduled if the busy and no answer retries have not been exhausted. If there is an accompanying SEER, follow the action described in the SEER guide (NTP 555-7001-510).
- ***RN Disabled*** - During an RN attempt, the target DN was dialed, the call was answered and "3" was pressed to disable remote notification. There will be no further RNs for this user until the user logs into his or her mailbox.
- ***Not Played*** - During a DNU attempt, the target DN was dialed, the call was answered and disconnected before DNU could play its message. If the answered retries have not been exhausted, DNU will retry using the answered retry limits and intervals.
- ***Illegal Window*** - A user attempted to send a DNU message. The message became stale during an illegal time window and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a non-delivery notification.

- ***Stale Date*** - A user attempted to send a DNU message. The message was not delivered immediately (either because it was sent during a restricted time period or the call was not answered and was, therefore, rescheduled). The message became stale during a permitted time period and could not be delivered. (The stale date parameter defaults to 36 hours. If a message cannot be delivered within this time, a message becomes stale.) The user receives a non-delivery notification.
- ***Sit Tone*** - During an outcall, the target DN was dialed, and a sit tone was detected. A sit tone is usually a series of tones followed by a voice message, indicating that this DN is invalid. This causes remote notification for this user to be turned off by disabling all of his or her remote notification schedules. The administrator or user should define a new valid DN and reenable remote notification for the user. DNU is cancelled for the message and the user receives a non-delivery notification (NDN).
- ***Bad Called DN*** - During an outcall, the target DN was dialed, and a bad called DN was detected by the local switch. (In other words, the target DN is invalid for some reason.) This causes remote notification for this user to be turned off by disabling all of his or her remote notification schedules. The administrator or user should define a new valid DN and reenable remote notification for the user. DNU is cancelled for the message and the user receives a non-delivery notification (NDN).

- ***Outcall Action*** - This field indicates the action performed on the request. The possibilities are:
  - ***Continue*** - The validation has been passed and a call attempt is to be made.
  - ***Remove, retry limit reached*** - After the call, the retry was not rescheduled because the retry limit had been reached.
  - ***Remove, another RN exists*** - The validation step determined that the user has logged on since the last RN attempt and the retry was cancelled.
  - ***Defer*** - Another call attempt has been scheduled. RN calls to pagers are always rescheduled because the user may fail to receive the page. (However, if the user logs on before the next retry, the retry will be cancelled.)

Appendix A: **Worksheets**

This appendix contains a blank copy of each of the worksheets mentioned in this guide.

Class of Service - Outcalling Parameters Worksheet

Class of Service Number: _____

Class of Service Name: _____

Remote Notification

Remote Notification Restriction/Permission Codes: _____
Which restriction/permission set (as defined in Voice Security Options) is applied to RN?

Remote Notification Keypad Interface: **No** ❑ **Yes** ❑
(MMUI only) Do you want users to be able to create and modify their own RN schedules?

Remote Notification Retry Limits and Intervals:

Busy Retry Limit:	_____	Busy Retry Interval:	_____ (hh:mm)
No Answer Retry Limit:	_____	No Answer Retry Interval:	_____ (hh:mm)
Answer Retry Limit:	_____	Answer Retry Interval:	_____ (hh:mm)

RN Business Days:

Monday	No ❑	Yes ❑
Tuesday	No ❑	Yes ❑
Wednesday	No ❑	Yes ❑
Thursday	No ❑	Yes ❑
Friday	No ❑	Yes ❑
Saturday	No ❑	Yes ❑
Sunday	No ❑	Yes ❑

Delivery to Non-User

Delivery to Non-User Restriction/Permission Codes: _____
Which restriction/permission set (as defined in Voice Security Options) is applied to DNU?

Send Message via DNU if Mailbox Not Found: **No** ❑ **Yes** ❑
If the sender did not enter the DNU prefix and the address is not a valid mailbox number, should the message be sent using DNU?

DNU DTMF Confirmation Required: **No** ❑ **Yes** ❑
Is the non-user required to press 2 in order to hear the voice message?

Class of Service Number:	
Class of Service Name:	
User Name	**DN**

Outcalling Options Worksheet

System Data

Collect Audit Trail Data: **Yes** ❑ **No** ❑
Select Yes to enable audit trail data collection.

Number of Days of Audit Data Stored: _____
Enter the number of days that audit data is stored on the disk before being overwritten. Enter a number between 1 and 63. The default is 7.

Shutdown Audit Trail at Volume Full (percentage): _____
Enter a number between 0 and 99. Zero (0) implies all calls will be handled. The default is 25.

Maximum Number of Outcalling Channels: _____
This number cannot exceed the number of full service voice channels. The default is 2.

For Customer Group:_____

Remote Notification

Maximum Number of Remote Notification Retry Repeats: _____
This is the number of repeats allowed before the system disables remote notification to a user. The default is 5.

Numeric Pager Data Terminator: _____
Character required by some general access paging services. The default is #.

Default Numeric Pager Data: _____
Callback number for general access pager services and default callback number for numeric pagers.

Delivery to Non-User

Delivery to Non-User on Weekdays: **from** _____ **to** _____ **(hh:mm)**
Time period during which DNU is allowed on weekdays. The default is 00:00 to 23:59.

Delivery to Non-User on Weekends: **from** _____ **to** _____ **(hh:mm)**
Time period during which DNU is allowed on weekends. The default is 00:00 to 23:59.

Delivery to Non-User Retries:

Busy Retry Limit: (default: 3)	_____	Busy Retry Interval: (default: 00:05)	_____ (hh:mm)
No Answer Retry Limit: (default: 10)	_____	No Answer Retry Interval: (default: 00:15)	_____ (hh:mm)
Answer Retry Limit: (default: 0)	_____	Answer Retry Interval: (default: 00:00)	_____ (hh:mm)

Outcalling Options Worksheet

Delivery to Non-User Addressing Prefixes and Associated Dialing Codes:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Number of times to play a message to a non-user: _____
This field can be set to 1 or 2. The default is 2.

DTMF Confirmation overrides user preference: **No** ❑ **Yes** ❑
If set to Yes, the setting in the following field overrides the setting in the user's COS. The default is Yes.

Delivery to Non-User DTMF Confirmation Required: **No** ❑ **Yes** ❑
Yes means that non-users must enter 2 on the telephone keypad in order to listen to a DNU message. The default is No.

Remote Notification Schedule

For User (name): _____ **DN:**_____

Message Remote Notification Option: Any ❑ Urgent ❑
Does the user want to be notified of all new messages or just those tagged as urgent?

Business Days Schedule

Period 1 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 2 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 3 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Remote Notification Schedule

For User (name): _____ **DN:**_____

Non-Business Days Schedule

Period 1 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 2 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 3 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Remote Notification Schedule

For User (name): _____ **DN:**_____

Temporary Schedule up to midnight of (dd/mm/yy):_____

Period 1 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 2 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Period 3 from _____ **(hh:mm) to** _____ **(hh:mm)**

Target 1 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 2 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

Target 3 DN: _____ Phone Tone Voice Numeric Service

Pager Callback Number or Pager ID Number:_____

DMS-100 Family/SL-100

DMS VoiceMail

Outcalling Application Guide

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