

Lucent INTUITY Administration for Inband and Serial Switch Integration

6

Overview

This chapter describes how to administer the Lucent™ INTUITY™ system for integration with an inband or serial switch.


To complete the integration procedures listed in [Table 6-1](#), you must use the windows in the order indicated for your integration and switch type.



NOTE:

These integration procedures are also included in the system installation book for your platform.

Table 6-1. Procedure Matrix

Integration		Procedure	Order	Window
Serial	Inband			
Yes	Yes	Verifies the Country and Switch	Complete this procedure first for all integration.	Switch Selection Window
Yes	No	Sets the Serial Interface Parameters	For serial integrations, complete this procedure second (and before beginning "Setting the MWI Device Assignments"). Do not use this procedure for inband switches.	Serial Interface Window
Yes	Yes	Sets the MVI Device Assignments	For serial integrations, complete this procedure third (and before beginning the "Setting MWI Parameters").	Device Assignment Window
Yes	Yes	Sets MWI Parameters	 NOTE: For serials and inband integrations, you can complete these procedures in any order.	MWI Parameters Window
Yes	Yes	Sets the Dial Plan Translations		Dial Plan Translation Window
Yes (for NEC NEAX 2400 only)	No	Sets the Attendant Translation	Complete this procedure after setting the dial plan translation.	Attendant Translation Window

Purpose

The purpose of this chapter is to provide instructions to administer the system switch integration using the Lucent INTUITY user interface.

Before You Begin

This chapter assumes you have completed the installation procedures for the Lucent INTUITY system.

Before configuring your system for switch integration, complete the following procedures:

- Assign extension numbers to channels. Use the switch Extension to Channel option under the Voice Equipment menu.
- Assign NDIS or AUDIX to all channels. Use the Services to Channels option under the Voice Equipment menu.
- Assign service through the Number Services option under the Voice System Administration menu. Select **any** for calling and called number. Specify the appropriate service (for example, **AUDIX**).
- Assign transfer restrictions (if any) using the Transfer Security option from the Voice System Administration menu (for inband switches only).
- Set the State of Voice Equipment option under the Voice Equipment menu:
 - New State — **inserv**
 - Equipment — **channel**
 - Equipment Number — **all**
 - Change Immediately? — **yes**
- Assign the appropriate channel group to voice channels using the Channels to Group option under the Voice Equipment menu.

NOTE:

All of the above procedures apply to both serial and inband integrations except for the Channels to Group option which applies to serial integration only. The default setting for the channel group is 2.

Permissions for Switch Integration Windows

The **sa** login can view all the windows used in these procedures but cannot change any parameter values. The **craft** and **remote maintenance** logins can set parameter values in all windows, except the Message Waiting Indicator (MWI) Parameters window, which contains some fields restricted to the craft login

Other Switch Integration Windows

In the user interface, some windows used for switch integration can be viewed by the **sa** and **craft** logins. However, these windows require remote maintenance login permissions to change the values for the permissions.

When to Stop and Restart the Voice System

To implement changes made to the windows used for switch integration, you must stop and restart the system. However, you can make all of the changes and then restart the system once.

Lucent INTUITY Main Menu

All procedures in this chapter begin at the Lucent INTUITY Main Menu ([Figure 6-1](#)).

⇒ NOTE:

The figures used to illustrate the various INTUITY AUDIX screens illustrate the NEC NEAX 2400 switch. For all the other switches, the values indicated in the control fields may vary.

⇒ NOTE:

[Figure 6-1](#) is a sample window only and may not reflect the options available for the system that you are installing.

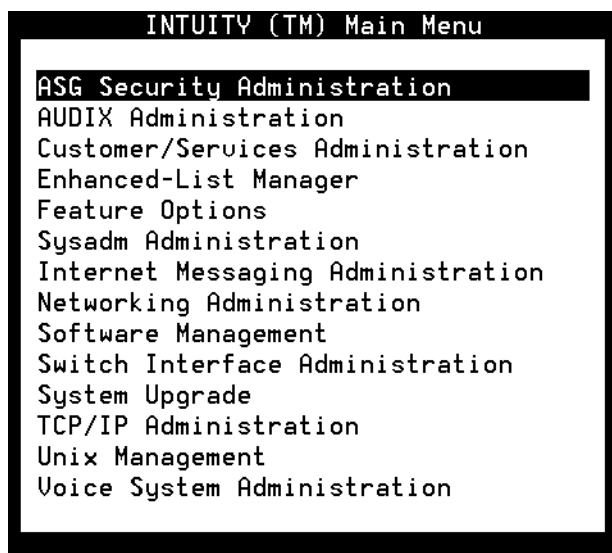


Figure 6-1. Lucent Intuity Main Menu

Verifying the Country and Switch

Use this procedure to check the country and switch for the system's switch integration. The selections in this window determine the defaults set in the system. If the system does not offer an exact match, contact your remote support center and ask them to select the country the matches the installation conditions as closely as possible.

⇒ NOTE:

Only the remote support center can set the country and switch options.

1. Start at the Lucent INTUITY Main Menu ([Figure 6-1](#)) and select:

```
> Feature Options
```

The system displays Feature Options window.

2. Press **F1** (Acknowledge Message).
3. Press **F7** (Switch Select).

The system displays the Switch Selection window ([Figure 6-2](#)).

⇒ NOTE:

Only the remote support center can administer this window.



Figure 6-2. Switch Selection Window

4. Verify that the country and switch parameters match your location. If they do not, contact your remote support center.
5. Press **F6** (Cancel) twice to return to the Lucent INTUITY Main Menu.

Table 6-2. Switch Selection Window — Field Descriptions

Field	Description and Values
Country	Specifies the country for which the system sets country-specific default parameters. Normally the country is factory-preset for your integration. Verify that the country matches your location. If it does not, contact your remote support center.
Switch	Specifies the switch for which the system sets default parameters in the call data interface. Normally the switch type is factory-preset for your integration. Verify that the switch matches your switch. If it does not, contact your remote support center.

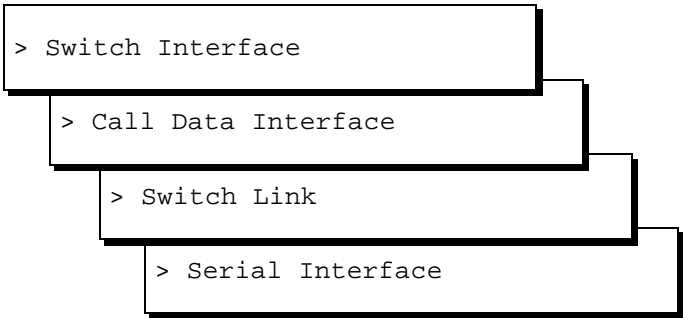
Setting the Serial Interface Settings

The following procedure establishes serial communication settings between the switch and the Lucent INTUITY system.

⇒ NOTE:

The serial communication settings for the switch and the Lucent INTUITY system must match.

1. From the Lucent Intuity Main Menu ([Figure 6-1](#)), select



The system displays the Serial Interface window ([Figure 6-3](#)) with the current values.

Serial Interface

NEAX 2400 IMS Integration

Data Bits : 7

Baud Rate : 1200

Stop Bit(s) : 2

Parity [O/E/N]: N

Start Bit(s): 1

Flow Control : N
[Y/N]

Serial Ports

1.

3.

5.

7.

2.

4.

6.

8.

Figure 6-3. Serial Interface Window

2. Use [Table 6-3](#) to complete the following fields:
- Data Bits
 - Baud Rate
 - Stop Bit(s)
 - Parity [O/E/N]
 - Start Bit(s)
 - Flow Control [Y/N]

Table 6-3. Serial Interface Window—Field Descriptions

Field	Description	Values
<switch> Integration	Displays the switch selected on the Switch Selection window (Figure 6-2).	Display only.
Data Bits:	Specifies the number of data bits.	7 or 8
Stop Bit(s):	Specifies the number of stop bits used when sending information. A Stop Bit is an interval at the end of the character that allows the receiving device to pause before the start of the next character.	1 or 2

Table 6-3. Serial Interface Window—Field Descriptions

Field	Description	Values
Start Bit(s):	Specifies the number of start bits used when sending information. A Start Bit is a character sent to signal the beginning of a transmission.	1
Baud Rate:	Specifies the transmission speed for communication between the switch and the INTUITY System.	1200, 2400, 4800, or 9600
Parity [O/E/N]:	Specifies the parity type for all serial ports. Parity is used for detection of errors in transmitted data.	<ul style="list-style-type: none">■ O for odd parity■ E for even parity■ N for no parity
Flow control [Y/N]:	Specifies whether flow control is enabled or disabled for all the serial ports. Flow control is a handshaking process whereby transmission is regulated to prevent receive buffers on peripheral devices from overflowing.	<ul style="list-style-type: none">■ Y to enable■ N to disable
Serial Ports:	Specifies the device ID of the serial ports used for integration. Only one port can be specified on each line.	<p>It is recommended that you use the lowest port(s) available on the multi-port serial circuit card.</p> <p>Device IDs for the multi-port serial circuit card are in the format /dev/ttysax, where x is a letter (a through h) representing a port on the card (from right to left).</p>

3. Press **F3** (SAVE).

The system displays the following message:

You need to restart the Voice System to make these changes active.

4. Press **[F1]** (ACKNOWLEDGE MESSAGE).
5. Press **[F6]** (CANCEL) three times to return to the Lucent INTUITY Main Menu ([Figure 6-1](#)).

Setting the MWI Device Assignments

This procedure assigns the devices on which the system performs MWI updates.

- For inband integrations the device is the channel group on which the system performs MWI updates. This procedure allows you to partition by number the channel(s) on which MWI updates are performed.

⇒ NOTE:

Use the Channels to Group option under the Voice Equipment menu to specify a channel group for MWI updates.

- For serial integrations, the device is a port on the multi-port serial circuit card.

1. From the Lucent INTUITY Main Menu ([Figure 6-1](#)), select

> Switch Interface Administration

> Call Data Interface

> MWI Administration

> Device Assignment

The system displays the first of two screens of the Device Assignment window ([Figure 6-4](#)). This screen displays the current system values. Press **[F5]** (NEXT PAGE) to go to the second screen. Press **[F4]** (PREV PAGE) to return to the previous page.

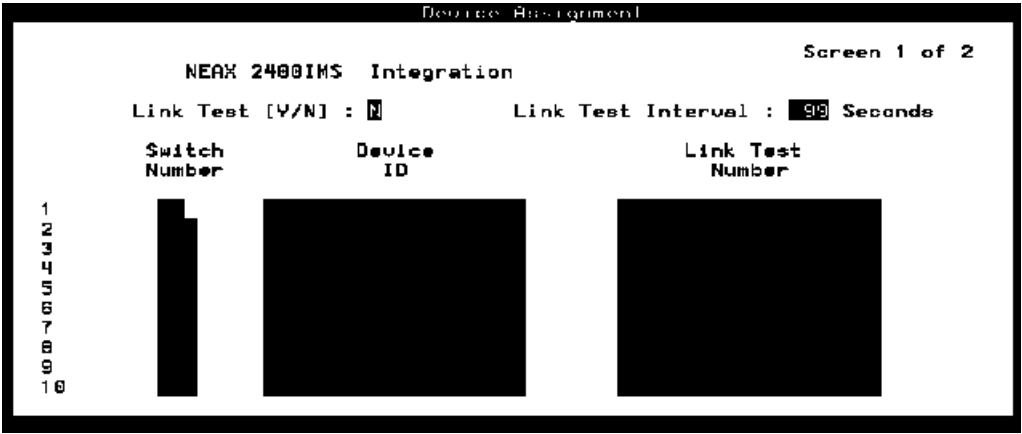


Figure 6-4. Device Assignment Window

- 2. Use [Table 6-4](#) to modify the screen.

Table 6-4. Device Assignment Window — Field Descriptions

Field	Description	Values
<switch> Integration	Displays the switch selected on the Switch Selection window (Figure 6-2).	Display only
Link Test (Y/N):	<p>⇒ NOTE: Use this field <i>only</i> for serial integrations.</p> <p>Specifies if integration enables heartbeat processing. If the link test is disabled, the Link Test Interval: and Link Test Number fields are not used. If the link test is enabled, these fields are required.</p> <p>⇒ NOTE: In heartbeat processing, an MWI update is requested for an invalid extension. The switch reply to this request confirms that the link is established.</p>	<p>n to disable the link test</p> <p>If a serial integration is being used, enter n in the Link Test (Y/N): field.</p> <p>⇒ NOTE: A link test cannot be used for inband integrations. A link test can be used for serial integrations, but it is not supported by the switch.</p>
Link Test Interval:	Specifies the heartbeat interval in seconds.	Leave this field blank.
Switch Number	Number that uniquely identifies and addresses the switch. The Lucent INTUITY system uses this number to differentiate between system subscribers on different switches.	Maximum of 3 digits, range 1-999. The switch number must match the switch number assigned for system subscribers in the INTUITY AUDIX application.

Table 6-4. Device Assignment Window — Field Descriptions

Field	Description	Values
Device ID	<p>Name(s) of the device(s) used for MWI update. Values are integration dependent:</p> <ul style="list-style-type: none">Serial <p>The name of a port on the multi-port serial circuit card. The device ID must be specified in the Serial Ports field on the Serial Interface window (see “Setting the Serial Interface Settings”). Only one device ID can be specified on each line.</p>	Use the lowest ports available on the multi-port serial circuit card. Device IDs for this card are in the format /dev/ttysax, where x is a letter (a through h) representing a port on the card, from right to left (example: /dev/ttysaa).
	<ul style="list-style-type: none">Inband <p>The group number using the Channels to Group option under the Voice Equipment menu. Valid range 1-32.</p> <p>By default, all channels are assigned to group 2. Outcalling is always done on group 2. If, however, channels have been assigned to another group for MWI updates, enable the functionality here.</p>	<p>The device IDs can be comma-separated or specified in ranges. For example, device IDs 1, 2, 3, 4, 5, 16, and 18 can be specified in either of the following ways:</p> <p>1,2,3,4,5, 16, 18</p> <p>1-6, 16, 18</p>
Link Test Number	Specifies the destination extension for the heartbeat message.	Leave this field blank.

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3. Press **F3** (SAVE).
- The system displays the following message:
- You need to restart the Voice System to make these changes active.
4. Press **F1** (ACKNOWLEDGE MESSAGE).
5. Press **F6** (CANCEL) four times to return to the Lucent INTUITY Main Menu ([Figure 6-1](#))

Setting MWI Parameters

Use this procedure to specify settings that determine how the system performs MWI updates. Permissions to change settings on this window depend on the type of integration. The settings satisfy several purposes:

- MWI updates can be disabled altogether on the system or blocked during a specified period of time on a daily basis.

The switch administrator may request that this be done.

All logins can set and change block times.

- MWI prefix or suffix strings may need to be changed to match the settings on the switch so that MWI updates can occur.

The **craft** login can change the strings for inband integrations.

For serial integrations, only the remote maintenance login can change the strings.

- The frequency with which the system performs background updates can be altered.

In background updates, the system periodically refreshes the status of the MWI indicators.

Staggering the updates prevents overload of the system resources.

Enabling background updates is useful if the switch or Lucent Intuity system goes down.

Only the remote maintenance login can alter the timing for background updates.

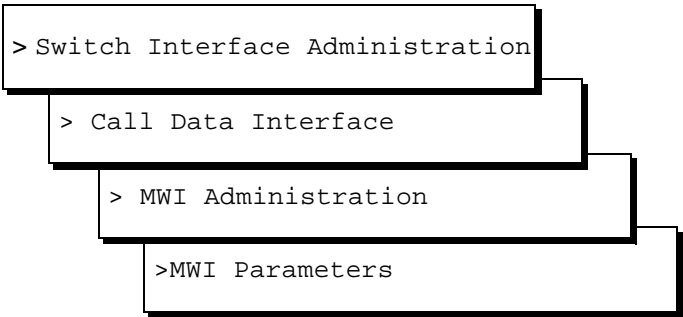
- The system handles MWI updates for messages sent from broadcast mailboxes separately from other messages.

You can alter the frequency with which broadcast message updates occur.

Only the remote maintenance login can administer updates for broadcast mailboxes.

Complete the following procedure to set the MWI Parameters.

1. From the Lucent INTUITY Main Menu ([Figure 6-1](#)), select



The system displays the MWI Parameters Window ([Figure 6-5](#)) with system defaults for the integration (see [Table 6-5](#)).

Table 6-5. Default values displayed in the MWI Parameters Window

Switch Name	MWI on Prefix	MWI on Suffix	MWI Off Prefix	MWI Off Suffix
Eurogeneris	#	101#	#	100#
Nortel Norstar	*1		#1	
Intecom	OP:MWI,0x20	1,0x04	RMV:MWI,0x20	1,0x04
Ericsson MD110	0x02,06,0x20	01,0x0d,0x0a	0x02,07,0x20	01,0x0d,0x0a
NEC NEAX 2400	0x02,0!B2	01,0x03	0x02,0!B6	01,0x03

The system displays the current settings ([Figure 6-5](#)).

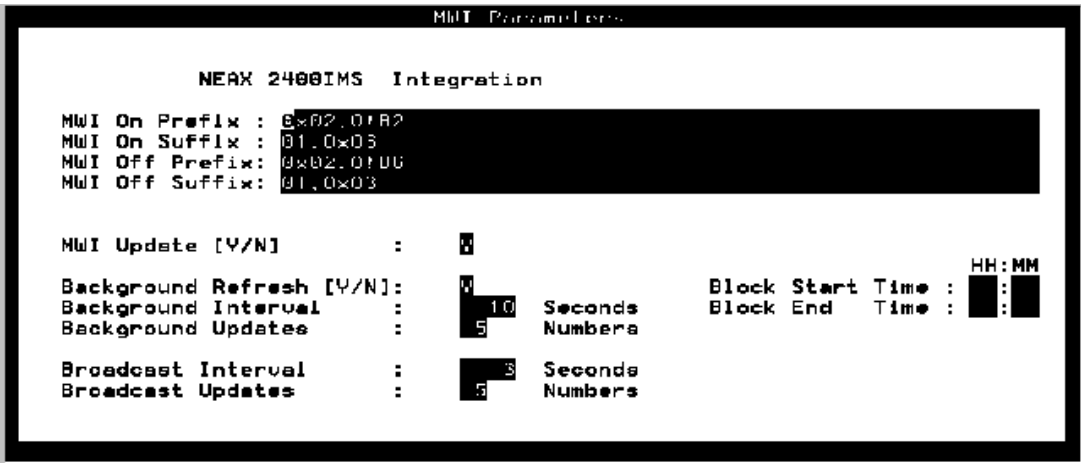


Figure 6-5. MWI Parameters Window

2. Change the MWI prefix or suffix for integration.
 - Modify values in the following fields to those required for your switch ([Table 6-6](#)):
 - MWI on prefix:
 - MWI on suffix:
 - MWI off prefix:
 - MWI off suffix:
 - If you do not need to change the MWI prefix, go to step 4.
3. Block MWI updates (including background and broadcast refresh) from occurring for a specified period of time.
 - Enter the time for blocking in the Block Start Time: field.

Table 6-6. MWI Parameters Window—Descriptions







Field	Descriptions	Values
<switch> Integration	Displays the switch selected on the Switch Selection window (Figure 6-2)	Display only.
MWL on prefix:	A string added before the extension to turn on MWIs.	<p>Maximum of 20 alphanumeric characters or their ASCII values in hexadecimal notion (see Table 6-7).</p> <ul style="list-style-type: none">■ The ASCII value must be represented as 0xHH, where HH is the ASCII value in hex.■ Two ASCII values must be separated by a comma (,).■ The space character is invalid. You must use its ASCII value—0x20. <p>All entries not satisfying the above conditions are treated as character strings.</p> <p>Examples: xyz123, 0x40, 0x23, abc345</p>
MWS on suffix:	A string added after the extension to turn on MWIs.	
MWL off prefix:	A string added before the extension to turn off MWIs.	
MWL off suffix:	A string added after the extension to turn off MWIs	
MWI Update [Y/N]:	Specifies whether the Lucent INTUITY system instructs the switch to perform MWI updates.	 NOTE: Only the remote maintenance login can change values in this field.
Background Refresh [Y/N]:	Specifies whether the MWI status for each extension status is periodically checked and updated	 NOTE: Only the remote maintenance login can change values in this field.
Background Interval:	Sets the interval between MWI background updates for non-broadcast messages.	 NOTE: Only the remote maintenance login can change values in this field.
Background Updates:	Sets the number of background updates done in the interval entered in the Background Interval: field.	 NOTE: Only the remote maintenance login can change values in this field.

Table 6-6. MWI Parameters Window—Descriptions

Field	Descriptions	Values
Broadcast Interval:	Sets the interval between MWI background updates for broadcast messages.	 NOTE: Only the remote maintenance login can change values in this field.
Broadcast Updates:	Sets the number of broadcast updates done in the interval entered in the Broadcast Interval: field.	 NOTE: Only the remote maintenance login change values in this field.
Block Start Time:	Sets the time when blocking of MWI updates begin on a daily basis.	Format <i>HH/MM/SS</i> , where: <ul style="list-style-type: none">■ <i>HH</i> is the hour in a 24-hour system (range 0-23)■ <i>MM</i> is the minute (range 0-59).■ <i>SS</i> is the second (range 0-59).
Block End Time:	Sets the time when blocking of MWI updates ends on a daily basis.	

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4. Press **F3** (SAVE).
- The system displays the following message:

You need to restart the Voice System to make these changes active.
5. Press **F1** (ACKNOWLEDGE MESSAGE).
6. Press **F6** (CANCEL) four times to return to the Lucent INTUITY Main Menu ([Figure 6-1](#)).

Hexadecimal equivalents for ASCII values used in the MWI on prefix, MWI on suffix, MWI off prefix, and MWI off suffix fields are shown in [Table 6-7](#).

Table 6-7. Hexadecimal Equivalents for ASCII Values

00 NUL	01 SOH	02 STX	03 ETX	04 EOT	05 ENQ	06 ACK	07 BEL
08 BS	09 HT	0A NL	0B VT	0C NP	0D CR	0E SO	0F SI
10 DLE	11 DC1	12 DC2	13 DC3	14 DC4	15 NAK	16 SYN	17 ETB
18 CAN	19 EM	1A SUB	1B ESC	1C FS	1D GS	1E RS	1F US
20 SP	21 !	22 “	23 #	24 \$	25 %	26 &	27 ’
28 (29)	2a *	2b +	2c ,	2d -	2e .	2f /
30 0	31 1	32 2	33 3	34 4	35 5	36 6	37 7
38 8	39 9	3 :	3 ;	3 <	3 =	3 >	3 ?
40 @	41 A	42 B	43 C	44 D	45 E	46 F	47 G
48 H	49 I	4a J	4b K	4c L	4d M	4e N	4f O
50 P	51 Q	52 R	53 S	54 T	55 U	56 V	57 W
58 X	59 Y	5a Z	5b [5c \	5d]	5e ^	5f _
60 `	61 a	62 b	63 c	64 d	65 e	66 f	67 g
68 h	69 i	6A j	6B k	6C l	6D m	6E n	6F o
70 p	71 q	72 r	77 s	74 t	75 u	76 v	77 w
78 x	79 y	7A z	7B {	7C	7D }	7E ~	7F DEL

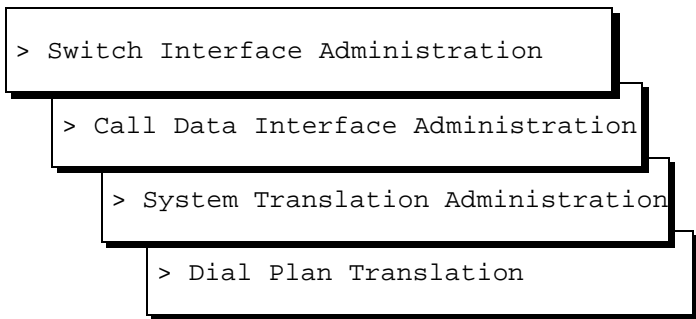
Setting the Dial Plan Translations

Use Dial Plan Translations to

- Set the Lucent INTUITY extension length (also called the dial plan).
- Set up the translations for calls for the calling party indication (CLI) and called party identification (CPID) to interface the Lucent INTUITY system and the switch.

To set the Dial Plan Translations.

1. From the Lucent INTUITY Main Menu ([Figure 6-1](#)), select



The system displays the first of five screens of the Dial Plan Translation window ([Figure 6-6](#)) This screen contains your current settings.

To access the next screen, press **F5** (NEXT PAGE). To return to the previous screen, press **F4** (PREV PAGE).

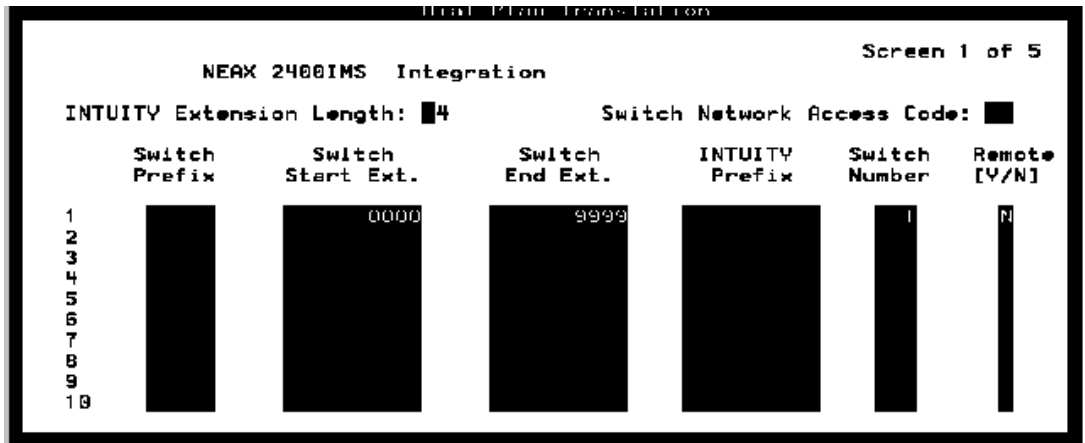



Figure 6-6. Dial Plan Translation Window

2. Use [Table 6-8](#) to modify the screen.

Table 6-8. Dial Plan Translation Window—Field Descriptions

Field	Description	Values
<switch> Integration	Displays the switch selected on the Switch Selection window (Figure 6-2).	Display only.
Intuity Extension Length	Specifies the number of digits in the dial plan.	3 to 10 digits. Must be the same as the number of digits for the INTUITY prefix combined with the number of digits for the (start or end) extension number.
Switch Network Access Code:	Specifies the code necessary to reach the network. For example, you might dial 9 first to connect to an outside line.	
Switch Prefix	Specifies the initial part of the code sent by the switch as part of the call information. It can be an NNX code using the North American Numbering Plan Scheme. Or it can be a switch network code for private networks having a different extension length within a switch or among switches. For example, if the extension length on the INTUITY system is 4 and the call information is 8604000, then 860 is the switch prefix and 4000 is the INTUITY mailbox number.	
Switch Start Ext.	Specifies the first extension number in the range of allowed extension numbers.	The number of digits specified for the start and end extension numbers must be identical and must match the dial plan. For example, to specify the range 2000-3999, enter: ■ Start extension 2000 ■ End extension 3999
Switch End Ext.	Specifies the last extension number in the range of allowed extension numbers.	

Table 6-8. Dial Plan Translation Window—Field Descriptions

Field	Description	Values
Intuity Prefix	<p>Specifies the digits that prefix the Intuity mailbox numbers. For example, if the Intuity extension length is 5, the range of numbers under the dial plan is 860 4000 to 860 5999, and the Intuity mailbox numbers range from 24000 to 26999, then the:</p> <p>Switch Prefix = 860</p> <p>Switch Start Ext = 4000</p> <p>Switch End Ext = 5999</p> <p>INTUITY Prefix = 2</p>	<p>The dialing number obtained by combining an INTUITY prefix with any number in the range between start and end extension number must be a unique number. No overlaps are allowed.</p> <p> NOTE: This feature is available for the Nortel Norstar switch only.</p>
Switch Number	<p>The number that uniquely identifies and addresses the switch. The Lucent INTUITY system uses this number to differentiate between system subscribers on different switches.</p>	<p>Maximum of 3 digits, range 1-999.</p>
Remote [Y/N]	<p>Specifies whether the switch named in the Switch Number field is a remote switch on the network or a local switch.</p>	<p>Enter <i>N</i>.</p>

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3. Press **F3** (SAVE).
- The system displays the following message:
- You need to restart the Voice System to make these changes active.
4. Press **F1** (ACKNOWLEDGE MESSAGE).
5. Repeat Steps 2 through 4 for the remaining translations.
6. Press **F6** (CANCEL) four times to return to the Lucent INTUITY Main Menu ([Figure 6-1](#)).

Examples

The following example illustrates entries used for the common scenario where there are single switch connections and fixed-length switch system subscriber extensions.

NOTE:
The switch network access code is not used in this example.

INTUITY extension length =4

Switch Prefix	Switch Start Ext.	Switch End Ext.	INTUITY Prefix	Switch ID	Remote [Y/N]
	0000	9999		1	N

For Nortel Norstar switches: The following example illustrates entries used where the ranges for a Lucent INTUITY subscriber are three digits from 111 to 222, and 555 to 999. The valid extension ranges on the switch consist of four digits from 1111 to 1222, and 2555 to 2999:

NOTE:
The switch network access code is not used in this example.

INTUITY extension length =4

Switch Prefix	Switch Start Ext.	Switch End Ext.	INTUITY Prefix	Switch ID	Remote [Y/N]
1	111	222		1	N
2	555	999		1	N

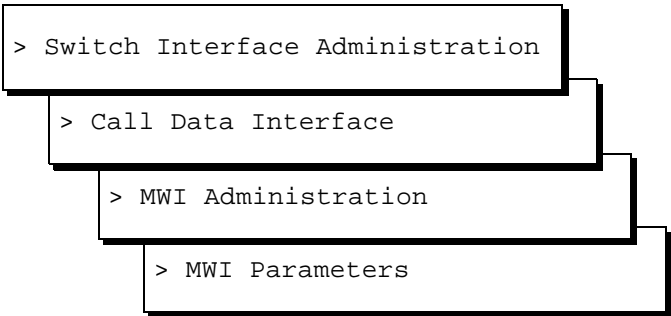
Setting the Attendant Translation

Attendant translation is required if the switch uses an index string instead of an attendant translation number for the automated attendant feature.

NOTE:
This screen is required for NEC NEAX 2400 switches only.

To set the attendant translation,

- 1. From the Lucent INTUITY Main Menu ([Figure 6-1](#)), select



The system displays the Attendant Translation Window ([Figure 6-7](#)).

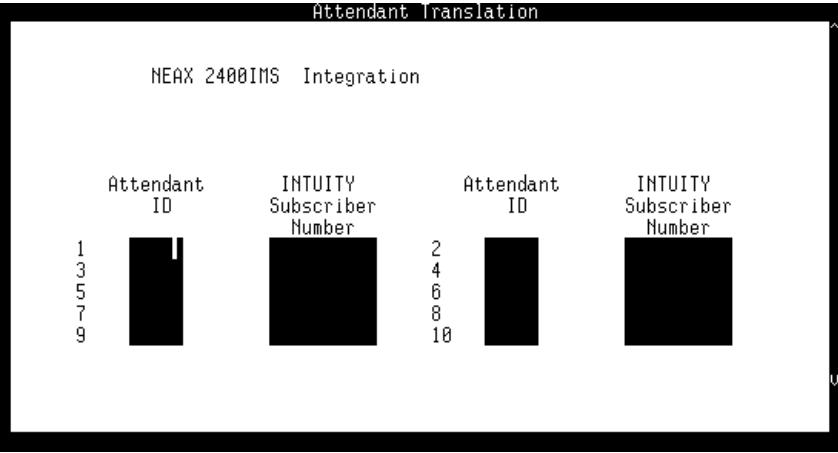


Figure 6-7. Attendant Translation Window

- 2. Use [Table 6-9](#) to modify the screen.

Table 6-9. Attendant Translation Window—Field Descriptions

Field	Description	Values
Attendant ID	Specifies the Attendant Extension Number.	The number of digits allowed depends on the switch being installed. This number should be unique.
Intuity Subscriber Number	Specifies the equivalent substitute for the Attendant ID string that is passed by the switch.	This number should match the dial plan table entries.

- 3. Use the Lucent INTUITY subscriber number as the Auto Attendant extension after completing the Attendant Translation screen.
- 4. Record the appropriate greetings.