

# **Requirements and Administration for Nortel Meridian 1**

# **3**

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## **Overview**

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This chapter provides information on requirements for switch software, hardware, connectivity, and administration for integration of a Northern Telecom (Nortel) Meridian 1 switch with the Lucent™ INTUITY™ system.

## **Purpose**

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This chapter is designed to help Lucent technicians ensure that correct administration is completed on the switch so that the switch and the Lucent INTUITY system can be integrated successfully. The switch administrator is responsible for performing the switch administration. However, Lucent technicians and the switch administrator must cooperate to ensure that the appropriate administration is completed.

## Switch Software Requirements

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The following software is required on the switch for integration with the Lucent INTUITY system:

- Generic 11, Release 15 or later with Options 11, 21, 21a, 51, 61, 71, and 81

 **NOTE:**

The line disconnect tone allowed (LDTA) software feature may be required in some countries. Release 15 and Release 16 support silence disconnect only and do not support LDTA.

- Option package 19 for digital display (DDSP)
- Option package 46 for message center (MWC)

See "[Verifying the Switch Software Release](#)" and "[Verifying the Switch Option Packages](#)" below for information on how the switch administrator can verify the software release and option packages installed on the switch.

## Switch Hardware Requirements

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The following hardware packages ([Table 3-1](#)) are required on Meridian switches for integration with the Lucent INTUITY system:

**Table 3-1. Required Switch Hardware**

| Switch     | Hardware Required   |
|------------|---|
| Meridian 1 | <ul style="list-style-type: none"><li>■ NT9D009 or NT8DO3 circuit card for connection to the Lucent INTUITY analog ports</li><li>■ NT8D02 8-port digital station interface circuit card</li></ul> |

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## Connectivity

The Lucent INTUITY system is shipped with the digital station interface circuit card installed at the factory. See Chapter 5, "Replacing or Installing Circuit Cards", in the maintenance book for your platform for information on replacing or reinstalling a digital station interface circuit card.

The digital station interface circuit card is shipped with the following cables:

- A 0.6-m (2-ft) amphenol connector cable (Comcode 407780956 — including circuit card and cable), with 25-pair 50-pin connectors on both ends ([Figure 3-1](#)).
- A 1-m (3-ft) octopus cable (Comcode 407789064), with a 25-pair 50-pin connector on one end (for the digital station interface circuit card connection) and eight RJ-45 connectors on the other for connection to the customer equipment ([Figure 3-1](#)).

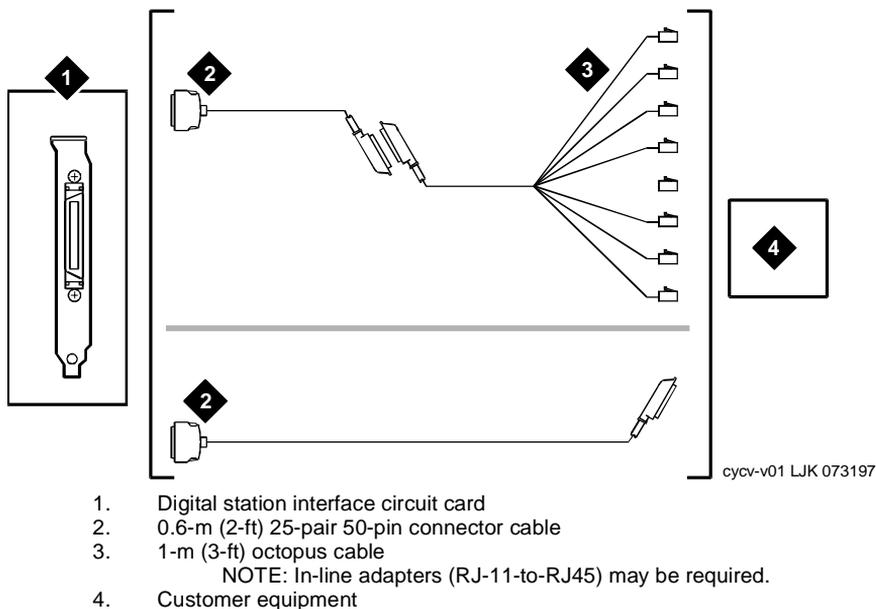


Figure 3-1. Connecting the Lucent INTUITY Digital Station Interface Circuit Card to Customer Equipment

## **Configurations**

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The switch and the digital station interface circuit card on the Lucent INTUITY system can be connected by either of the following standard configurations. (See [“Connecting the Lucent Digital Station Interface Circuit Card to Customer Equipment”](#) below.)

- The 25-pair 50-pin cable can connect directly to the digital station interface circuit card and the customer equipment.
- The octopus cable and the 25-pair 50-pin cable can be coupled and then the 25-pair 50-pin cable connected to the digital station interface card and the customer equipment.

Some configurations with Meridian 1 and Meridian SL-1 switches require RJ-11-to-RJ45 inline adapters (356B — Comcode 105197297) at the switch side to convert the cable ends of the octopus cable.

See Appendix E, “Cable Connectivity” in the *System Installation* book for your platform for more information and an illustration of the cabling.

## **Connecting the Lucent Digital Station Interface Circuit Card to Customer Equipment**

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Use this procedure and [Figure 3-1](#) to connect the digital station interface circuit card to customer equipment.

1. Attach the 50-pin connector end of the connector cable to the faceplate of the digital station interface circuit card.
2. If required, connect the 1-m (39-in.) octopus cable (provided with the circuit card) to the other end of the cable.
3. If required, connect the RJ-45 connectors on the opposite end of the octopus cable to the customer equipment.



**NOTE:**

The station jacks for Nortel equipment are normally RJ-11, not RJ-45. You must use in-line adapters to convert the RJ-11 to RJ-45 to connect to their equipment.

The cable end is now ready to be connected to the customer equipment. See the information in [“Demarcation Points”](#) in [Chapter 1, “Overview of Switch Integration with Digital Station Interface”](#).

## **Custom Wiring**

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Customer wiring configurations may involve special considerations. In many integrations a 66-M1-50 block may be used with B bridging clips. However, other customer wiring configurations are possible.

The following pinout diagram ([Table 3-2](#)) is provided as reference for 50-pin connections made at a switch interconnection point.

**Table 3-2. Cabling Requirements for 50-Pin Cable Connection**

| <b>Phone Line Number</b> | <b>Pin Number</b> | <b>Pair Color</b> | <b>Lead Designation</b> |
|--------------------------|-------------------|-------------------|-------------------------|
| 1                        | 26                | White-Blue        | Tip                     |
|                          | 1                 | Blue-White        | Ring                    |
| 2                        | 29                | White-Brown       | Tip                     |
|                          | 4                 | Brown-White       | Ring                    |
| 3                        | 32                | Red-Orange        | Tip                     |
|                          | 7                 | Orange-Red        | Ring                    |
| 4                        | 35                | Red-Slate         | Tip                     |
|                          | 10                | Slate-Red         | Ring                    |
| 5                        | 38                | Black-Green       | Tip                     |
|                          | 13                | Green-Black       | Ring                    |
| 6                        | 41                | Yellow-Blue       | Tip                     |
|                          | 16                | Blue-Yellow       | Ring                    |
| 7                        | 44                | Yellow-Brown      | Tip                     |
|                          | 19                | Brown-Yellow      | Ring                    |
| 8                        | 47                | Violet-Orange     | Tip                     |
|                          | 22                | Orange-Violet     | Ring                    |

### **Connecting the Tip/Ring Lines**

The Tip/Ring (analog voice) lines are connected between the Lucent INTUITY system and the switch. See Chapter 3, "Making Cable Connections", in the system installation book for your platform for information on connecting the Tip/Ring lines to the Lucent INTUITY system.

## **Required Switch Administration**

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You must work with the switch administrator to ensure that the proper switch administration has been performed. The following information is provided to assist you in working with the switch administrator.

### **Overlays**

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Administration on the switch is done via *overlays* that allow switch administrators to modify system parameters. Overlays are loaded by entering the command below at the switch administration terminal.

**LD<overlay>**

where <**overlay**> is an overlay number.

### **Verifying the Switch Software Release**

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The switch administrator can verify the software release installed on the switch by using overlay 22 and entering the commands below at the switch administration terminal.

**LD22**  
**REQ ISS**

The output of these commands lists the software release loaded on the switch. This number should be 15 or greater (17 or greater in some applications). See [“Switch Software Requirements”](#) above.

Ensure that the switch administrator has the appropriate release of the software installed on the switch.

### **Verifying the Switch Option Packages**

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The switch administrator can verify the software packages installed on the switch by using overlay 22 and entering the commands below at the switch administration terminal.

**LD22**  
**REQ PRT**  
**TYPE PKG**

The output of these commands lists all software packages installed on the system. Switch option packages 19 (for DDSP) and 46 (for MWE) should be installed. See [“Switch Software Requirements”](#) above.

Ensure that the switch administrator has the appropriate switch option packages installed on the switch.

## **Verifying the Attendant Console Day/Night Service Support Number (If Used)**

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If attendant day/night service is used, the switch administrator can determine the attendant console day/night service support number by using overlay 21 and entering the commands below at the switch administration terminal.

```
LD21
REQ PRT
TYPE CDB
CUST 0
```

Among other details, these commands display the following output:

```
NITE DN: <number>
```

where <number> is an extension number.

Request that the switch administrator make the NITE DN number equal to the Lucent INTUITY message retrieval number.

The switch will pass 0 (attendant number) as a called party (CP) number to the Lucent INTUITY system in this case. The Attendant Translation window is used to translate 0 to an INTUITY AUDIX® mailbox number, which is typically an automated attendant mailbox. See [“Setting the Attendant Translations”](#) in [Chapter 4, “Lucent INTUITY Administration for Switch Integration with Digital Station Interface”](#), for information about the Attendant Translation window.

## **Configuring the Call Redirection Display Strings**

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The settings for the call redirection display strings on the switch and on the Lucent INTUITY system must be identical for the integration to succeed. By default, the Lucent INTUITY system expects the call redirection display strings to be set as follows:

- Call forward on no answer — CFNA
- Call forward on busy — CFB
- Cover all calls — CFW

Check the strings currently set on the switch and recorded in [Table 2-9](#) in [“Determining the Call Redirection Display Strings Currently Set on the Switch”](#) in [Chapter 2, “Planning for Switch Integration with Digital Station Interface”](#).

Do the following to ensure that these strings match.

- If the call redirection display strings are not set on the switch to the values that the Lucent INTUITY expects, request that the switch administrator change them by using overlay 95 and entering the commands below:

```
LD95
REQ CHG
TYPE CPND
CUST <customer_number>
HUNT CFB
CFNA CFNA
CFWD CFW
```

where <customer\_number> identifies the customer.

- If for any reason the strings cannot be changed on the switch, you must administer them on the Lucent INTUITY system. See [“Setting the Call Redirection Display Strings”](#) in Chapter 4, “Lucent INTUITY Administration for Switch Integration with Digital Station Interface”.

## **Administering the ACD DNs**

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ACD DNs are used for forming hunt chains of Tip/Ring ports. Request that the switch administrator use overlay 23 to enter the commands below for *each* ACD DN configured on the system:

```
LD 23
REQ NEW
TYPE ACD
ACDN <ACD_DN>
MAXP 1
MWA YES
NCFWP <night_call_forward_DN_extension>
```

where:

- <ACD\_DN> is an automatic call distribution directory number (ACD DN) recorded in [Table 2-6](#) in [Chapter 2, “Planning for Switch Integration with Digital Station Interface”](#).
- <night\_call\_forward\_DN\_extension> is the extension number recorded for the ACD DN in [Table 2-6](#) in [Chapter 2, “Planning for Switch Integration with Digital Station Interface”](#).

## **Administering the Tip/Ring Lines**

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Ensure that *each* extension number corresponding to a Tip/Ring line on the Lucent INTUITY system is administered on the switch by requesting that the switch administrator use overlay 10 to enter the commands below. In this administration the HUNT field is configured to form a hunt chain.

### **⇒ NOTE:**

In the command lines, the ellipsis (three lines of periods) indicates intervening commands.

 **SECURITY ALERT:**

*The NCOS field determines what types of calls a station on the switch can originate, for example, whether a station can perform a transfer out of the private network. The possibility of toll fraud exists if administration is not performed correctly. Lucent Technologies is not responsible for any consequences due to switch administration.*

**LD10**

REQ **NEW**

.  
.  
.

TN **<TN >**

DES **tipring**

DN **<extension\_number>**

.  
.  
.

CLS **LDTA HTA XFA HPR <MBXA>**

NCOS **<outcalling\_NCOS\_number>**

HUNT **<next\_extension\_number/ACD\_DN>**

where:

- **<TN>** is the switch TN associated with the Tip/Ring line. To determine the association, see [Table 2-7](#) in [Chapter 2, "Planning for Switch Integration with Digital Station Interface"](#).
- **<extension\_number>** is the extension number that is being created. See [Table 2-6](#) for the list of extension numbers to be administered.
- **<MBXA>** is a class of service that is available only if the switch has the multiparty operations (MPO) package 141 and Supp package 131 installed and the release of the switch software is greater than Release 21.

 **NOTE:**

Ignore the MBXA class of service if you are integrating the Lucent INTUITY SYSTEM WITH A SWITCH LACKING THE MPO SOFTWARE. THE HPR CLASS OF SERVICE GIVES HIGH PRIORITY TO THE TIP/RING LINES.

- **<outcalling\_NCOS\_number>** is the number that allows access for outcalling.
- **<next\_extension\_number/ACD\_DN>** is the extension number of the next Tip/Ring line or the next ACD DN in the hunt chain. See [Table 2-6](#) in [Chapter 2, "Planning for Switch Integration with Digital Station Interface"](#).

## Administering the Switch Subscribers

Provided below is a template for how an extension on the switch should be administered if the system subscriber needs the following features:

- Call forwarding coverage on no answer to the Lucent INTUITY system
- Call forwarding coverage on busy to the Lucent INTUITY
- Message waiting indicator (MWI) updates

Ensure that the switch administrator uses the appropriate overlay to enter the commands below at the switch administration terminal: for each system subscriber.

### NOTE:

In the commands lines, the ellipsis (three lines of periods) indicates intervening commands.

```
LD <10 or 11>
REQ <HG
TN <subscriber's_TN>
TYPE <set_type>
.
.
.
FDN <Lucent_INTUITY_number>
.
.
.
CLS FNA FBA HTA MWA CFNA SFA CFTA
.
.
.
EFD <Lucent_INTUITY_number>
HUNT <Lucent_INTUITY_number>
EHT <Lucent_INTUITY_number>
.
.
.
```

where:

- <subscriber's\_TN> is the switch terminal number (TN) associated with the subscriber and the subscriber's station set.
- <10 or 11> is the appropriate overlay (10 for analog sets, 11 for digital sets).
- <set\_type> is the subscriber's station set type, for example, 500 (analog set), 2616 (digital set), or 2006 (digital set).
- <Lucent\_INTUITY\_number > is the Lucent INTUITY message retrieval number (see [Table 2-4](#)).

**⇒ NOTE:**

CFTA *must* be included in the CLS line for the EFD and EHT parameters to be set.

Do *not* administer INTUITY AUDIX subscribers with DDGD as a class service. This class disables display of the calling number on the destination station. If subscribers with this class dial the INTUITY AUDIX application, they cannot enter just [#] (pound sign) for their mailbox numbers. Instead, they must enter the number and then [#]. When a call for such a subscriber is forwarded to the Lucent INTUITY system, the system answers in a nonintegrated mode.

## Administering the Ports on the Digital Station Interface Circuit Card

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Ensure that *each* switch terminal number (TN) defined for the Lucent INTUITY system plus *each* of its associated keys is administered on the switch by requesting that the switch administrator use overlay 11 to enter the commands below at the switch administration terminal. Be sure that the TN associated with the port dedicated for MWI updates (if used), is administered.

**⇒ NOTE:**

In the command lines, the ellipsis (three lines of periods) indicates intervening commands.

```
LD11
REQ NEW/CHG
TYPE 2616
TN <TN>
.
.
.
CLS DDS CNDA HPR
KEY <key>
.
.
.
KEY: <key>
KEY: 12 DSP
KEY: 13 MIK
KEY: 14 MCK
```

where:

- <TN> is the switch terminal number.
- <key> is the key designation, in the format 0 scr to 11 scr.

See [Table 2-7](#) in [Chapter 2, "Planning for Switch Integration with Digital Station Interface"](#), for the list of switch TNs and keys to be administered.



**NOTE:**

The TYPE must be set to 2616, which is the station set type that the digital station interface circuit card emulates.

## **Optional Switch Administration**

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### **Express Messaging Feature**

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If the customer is to use the Lucent INTUITY Express Messaging feature, additional administration is required on the switch. See [Appendix A, "Administering Express Messaging"](#).

### **Call Routing to Far-End Switches in the Customer Network**

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If the customer is to enable call routing to far-end switches in the customer network, additional administration is required on the switch. See [Appendix B, "Administering Call Routing for Far-End Switches"](#).