| | |
|---|---|
| Issued: | 93 10 31 |
| Status: | Standard |
| X11 Release: | All |



# Maid Identification

The Maid Identification, or Maid ID, feature makes it easier to keep track of which maids clean which rooms. Maid ID introduces a new keyword, MI, and a 1- to 4-digit Maid ID.

The MI keyword is used with the Background Terminal SEt STatus command when a room's cleaning status is changed. The Maid ID number, which accompanies the MI keyword, uniquely identifies a maid.

The following features allow the Maid ID to be entered as part of the room cleaning status:

— Background Terminal (BGD) SEt STatus command

— Room Key (RMK) Operation

— Dial Access method

— Off-hook Detection

— Controlled Class of Service (CCOS) key operation

*Note:* For Off-hook Detection and CCOS key operation, the Maid ID always defaults to zero.

## Feature interactions

Maid ID alters dial access for Room Status (RMS). After entering a valid cleaning status, instead of hearing dial tone or Flexible Feature Code (FFC) confirmation tone, the maid hears a special interrupted dial tone, prompting for the Maid ID. The Maid can then enter the Maid ID followed by the octothorpe (#), or can hang up.

## Operating parameters

Meridian Modular Terminal firmware, version 11, and the Hospitality Screen Enhancement (HSE), package (208), are needed to support the special Maid ID screens. They are not required to support the feature itself.

For Off-hook Detection, Line Lockout (LLT) must be defined as overflow tone in LD15. Any other lockout definition prohibits Maid ID use with Off-hook Detection, see the *X11 input/output guide* (553-3001-400).

## Feature packaging

Maid Identification (MAID), package 210, requires

- Maid Identification (MAID), package 210
- Background Terminal (BGD), package 99
- Room Status (RMS), package 100
- Controlled Class of Service (CCOS), package 81

Optional packages include

- Property Management System (PMS), package 103
- Flexible Feature Codes (FFC), package 139
- Hospitality Screen Enhancements (HSE), package 208

## Feature implementation

Maid ID does not require any additional service change implementation. If the feature package is equipped, implement Maid ID using a Background Terminal (BGD) or Property Management System Interface (PMSI). See *Background Terminal Facility description* (553-2311-316) and *Property Management System Interface description* (553-2801-101). See also "Room Status," in this document, for information regarding its implementation.

## Feature operation

Maid ID can be entered along with room cleaning status in the Background Terminal (BGD) or Property Management System (PMS). For a complete discussion of this feature's programming, see *Background Terminal Facility description* (553-2311-316) and *Property Management System Interface description* (553-2801-101).

## Room key operation

The steps for the Room key (RMK) operation are:

1 Press **RMK** once. The indicator flashes.

2 Dial the Directory Number (DN) of the room for which the cleaning status is being changed. The indicator lights steadily.

3 Enter a cleaning status code, 1 through 7
1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = room passed inspection
5 = room failed inspection
6 = cleaning skipped
7 = not for sale

4 Press the asterisk (*). This sets the display to accept the Maid ID. The asterisk does not show on the display. Each time the asterisk (*) is entered, the display clears.

When Hospitality Screen Enhancements (HSE) is equipped, and Meridian Modular telephones are used with firmware version 11 or higher, the display looks like this:

xxx...x Enter Maid ID

xxx...x = Room DN

5 Enter the Maid ID.

With HSE, a cursor marks the beginning position for the Maid ID. The Maid ID shows on the display. Correct the Maid ID by pressing the asterisk (*) to clear the incorrect Maid ID and to reset the display. Enter the correct Maid ID.

6 Press **RMK** again to complete the operation. The RMK indicator goes off.

## Dial Access method

This method uses either Special Prefix (SPRE) codes or Flexible Feature Codes (FFCs).

### Special Prefix (SPRE)

To enter Room Status (RMS) using SPRE codes:

1 Lift the handset.

2 Dial SPRE+86.

3 Enter a cleaning status code, 1 through 7 as follows.
1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = room passed inspection
5 = room failed inspection
6 = cleaning skipped
7 = not for sale
Special interrupted dial tone is heard, prompting for the Maid ID

Operation prior to X11 release 17 used steps 1 through 4, and step 8. Steps 5, 6, and 7 have been added with Maid ID. If these new steps are skipped, the system sets the Maid ID to zero.

4 Press the asterisk (*). This sets the display to accept the Maid ID. The asterisk (*) does not show on the display.

5 Enter the Maid ID. The digits are shown on the display, if equipped. If you dial an incorrect Maid ID, press the asterisk (*), and reenter the Maid ID.

6 Press the octothorpe (#) to end Maid ID entry. The octothorpe (#) does not appear on the display.

7 Hang up the handset.

### Flexible Feature Codes (FFCs)

To enter Room Status using Flexible Feature Codes:

1 Lift the handset.

2 Enter the RMST FCC.

3 Enter a cleaning status code, 1 through 7 as follows:
1 = cleaning requested
2 = cleaning in progress
3 = room cleaned
4 = room passed inspection
5 = room failed inspection
6 = cleaning skipped
7 = not for sale

Operation prior to x11 release 17 used steps 1 through 3 and steps 7a and b. Steps 4, 5 and 6 have been added with Maid ID. A special interrupted dial tone prompts for the Maid ID number. If these new steps are skipped, the system sets the Maid ID to zero. Hang up or press **RLS**.

4 Press the asterisk (*). This sets the display to accept the Maid ID; it does not show on the display.

5 Enter the Maid ID. The digits appear on the display. If you enter an incorrect Maid ID, press the asterisk (*), and reenter the Maid ID.

6 Press the octothorpe (#) to end Maid ID entry. The octothorpe (#) does not appear on the display.

7a If the FCC confirmation tone was configured, you hear the FCC confirmation tone. Hang up or press **RLS**.

7b If the FCC confirmation tone was not configured, you will hear a dial tone. Make a call, hang up, or press **RLS**.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Make Set Busy

The Make Set Busy (MSB) feature allows an SL-1 or Meridian digital telephone to appear busy to all incoming calls. Outgoing calls can still be made from the telephone. To activate this feature, a separate MSB key/lamp pair must be assigned. Incoming calls to Multiple Appearance Directory Numbers (MADNs) in the MSB mode are still signified by the indicator next to the Directory Number (DN) key, and can be answered even while MSB is active. Calls to any Single Appearance Directory Number on the telephone receive a busy indication. MSB does not affect incoming Private Line calls.

## Operating parameters

MSB does not apply to 500/2500 telephones.

## Feature interactions

— Call Forward All Calls
Call Forward All Calls and then Hunting take precedence over MSB.

— Voice Call
Voice Call is blocked by MSB.

— Automatic Call Distribution
See *Automatic Call Distribution basic features description* (553-2671-100) for information on MSB operations.

## Feature packaging

MSB, package 17, has no feature package dependencies.

## Feature implementation

**LD11** – Add or change MSB for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number (TN) |
| KEY | xx MSB | Add a MSB key (must be key 30 for M3000 telephones)<br>xx = key number |

## Feature operation

To make a telephone appear busy to callers

– Without lifting the handset, press the **MSB** key. The indicator lights steadily and the telephone will not receive calls.

To cancel MSB

– Without lifting the handset, press the **MSB** key.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 10 |



# Malicious Call Trace

Malicious Call Trace (MCT) allows users of selected telephones to activate a call trace that results in a printed report of the calling and called parties. The report is generated on all system TTYs designated as maintenance (MTC) terminals.

Malicious Call Trace (MCT) is activated either by dial access from single-line, SL-1 and Meridian digital telephones, or by key access from SL-1 telephones, Meridian digital telephones, and attendant consoles.

If the initiator hears overflow tone, the call trace has failed for one of the following reasons:

— The station does not have Malicious Call Trace Allowed (MCTA) class of service (CLS)

— The station is not established on an active call

— The system could not allocate a print register to store the trace information

An attendant can activate Malicious Call Trace (MCT) only from an attendant console by using the Trace (TRC) feature key. When the Trace (TRC) key is pressed, the system prints a trace report on the source party, the destination party, or both, depending on whether the source key, the destination key, or both keys are active. The printing of the MCT record is preceded by a bell sound on the maintenance TTY. In the printout, only the console's primary Terminal Number (TN) is reflected in the TN field.

The MCT record identifies the source or destination (or both) by printing S or D (or both) prior to the time and date stamp of the record.

## Operating parameters

The MCT feature is implemented on a system basis.

Assignment of the Trace (TRC) key cannot be done through the Attendant Administration feature.

The MCT feature is not available on Automatic Call Distribution (ACD) telephones.

The TRC key cannot be assigned as a softkey on Meridian digital telephones.

## Feature interactions

- Conference call
  When a station or console that is on the conference loop activates the MCT feature, the trace record shows only the conference loop number and conference number as the ORIGTN, and the Terminal Number (TN) of the station or console that activated the feature as the TERTN. No information on the other parties in the conference is given.
- History File
  The MCT records are stored in the History File if it has been defined as a maintenance (MTC) user in LD17.
- Traffic Measurement
  The MCT feature is added to the feature key list for traffic measurements (Peg Count TFC005).

## Feature packaging

Malicious Call Trace (MCT), package 107, has no feature package dependencies.

# Feature implementation

**LD10** – Add or change Malicious Call Trace for 500/2500 telephones.

| REQ | CHG | Change |
|---|---|---|
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | MCTA, (MCTD) | MCT allowed or denied |
| | XFA, (XFD) | Call Transfer allowed or denied |
| ***Note:*** When MCTA is assigned, the telephone must also have XFA defined. | | |

**LD11** – Add or change Malicious Call Trace for SL-1 and Meridian digital telephones.

| REQ | CHG | Change |
|---|---|---|
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CLS | MCTA, (MCTD) | MCT allowed or denied |
| KEY | xx TRC | MCT key (LED not required)<br>xx = key number |
| ***Note:*** When MCTD is assigned, the MCT key is removed. | | |

**LD12** – Add or change Malicious Call Trace for attendant consoles.

| REQ | CHG | Change |
|---|---|---|
| TYPE | ATT, 1250, 2250 | Console type |
| TN | l s c u | Terminal Number |
| KEY | xx TRC | MCT key<br>xx = 0–9 (QCW and M1250)<br>xx = 0–19 (M2250) |

## Feature operation

To trace a malicious call from a 500/2500 telephone:

1 Flash the switchhook or press **Link**. A special dial tone signifies that the call is on hold.

2 Enter SPRE+83. You are connected to the call.

To trace a malicious call from an SL-1 or Meridian digital telephone using Special Prefix (SPRE) code:

1 Press **Transfer** or **Conference**. A special dial tone signifies that the call is on hold.

2 Enter SPRE+83. You are connected to the call.

To trace a malicious call from an SL-1 or Meridian digital telephone using the Trace (TRC) key:

1 Press **Call Trace**. You remain connected to the call.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Manual Line Service

Manual Line Service allows all calls made from 500/2500 telephones defined as manual telephones to be handled automatically by an attendant. When the caller goes offhook, the attendant is contacted immediately. Calls can be placed to telephones with Manual Line Service.

## Operating parameters

Manual Line Service applies only to 500/2500 telephones.

## Feature interactions

— Attendant Alternative Answering (AAA)
When AAA is defined, Manual Line service follows the AAA parameters.

— Attendant Overflow Position (AOP)
When AOP is defined, Manual Line service follows the AOP directions.

— Night Service (NSVC)
When the system is in NSVC mode, all telephones with a manual class of service (CLS) are routed to the telephone designated as the night number for the customer group.

## Feature packaging

This capability is included in basic X11 system software.

## Feature implementation

**LD10** – Define class of service (CLS) for Manual Line telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number (TN) |
| DN | xxx...x | Directory Number (DN) assigned to the telephone |
| CLS | MNL | Arrange telephone for manual service |

## Feature operation

To use Manual Line Service from a 500/2500 telephone, lift the handset. You are automatically connected to the attendant.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Manual Signaling (Buzz)

Manual Signaling (Buzz) permits an SL-1 or Meridian digital telephone user to sound a buzztone at a specific telephone. The Meridian M3000 Touchphone provides the buzzing capability by means of an Active State screen softkey.

To activate this feature, a separate buzz key must be equipped. An associated lamp or indicator is not required, however.

The buzz tone continues as long as the key remains depressed. Manual Signaling (Buzz) has no impact on an existing call or on other active features. If the other telephone is busy on a call, it will still buzz, even if it is a Handsfree call.

## Operating parameters

Manual Signaling (Buzz) does not apply to 500/2500 telephones. Only Single Appearance Directory Numbers can be buzzed.

## Feature interactions

Not applicable.

## Feature packaging

Manual Signaling (Buzz) is included in basic X11 system software.

## Feature implementation

**LD11** – Add or change Manual Signaling (Buzz) for SL-1 and digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number (TN) |
| KEY | xx SIG yyy...y | Add a Manual Signaling (Buzz) key<br>xx = key number<br>yyy...y = DN to be buzzed (must be a Single Appearance Directory Number |

## Feature operation

To buzz a specific telephone:

– Press **Buzz**. The other telephone emits a buzz sound from the speaker for as long as you hold down the Buzz key.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Manual Trunk Service

Manual outgoing trunk service permits you to complete an outgoing call, after ringing the trunk, by dialing a predefined trunk access code. Manual incoming trunks, when seized at the far end, are automatically terminated on a specified Directory Number (DN) or, if no DN is specified, at the attendant.

Manual Trunk Service is defined by the trunk class of service (CLS), and can be applied to outgoing, incoming, and outgoing/incoming trunks. This feature is available to the central office (CO), FX, WATS, and tie trunks with an immediate start arrangement.

## Operating parameters

Manual incoming service can be applied to tie trunks only.

## Feature interactions

Not applicable.

## Feature packaging

This capability is included in basic X11 system software.

# Feature implementation

**LD16**—Add or change an incoming manual trunk route.

| | | |
|---|---|---|
| REQ | NEW, CHG | Create a new route or modify an existing one |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| TKTP | TIE | Incoming manual trunks (must be tie trunks) |
| ICOG | ICT | Incoming route |
| ACOD | xxxx . . x | Trunk route access code |

**LD14**—Add or change an incoming manual trunk.

| | | |
|---|---|---|
| REQ | NEW, CHG | Create a new trunk or modify an existing one |
| TYPE | TIE | Tie trunks are required for manual incoming trunks |
| TN | l s c u | Terminal number (TN) |
| CUST | xx | Customer number |
| RTMB | rrr mmm | Route and member number |
| MNDN | xxx...x | Directory Number (DN) for automatically terminate |
| SIGL | aaa | Trunk signaling<br>aaa = DX2, DX4, EAM, EM4, GRD, LDR, LOP, OAD |
| STRI | IMM | Incoming start arrangement |
| SUPN | Yes, (No) | Answer and disconnect supervision required or not required |
| CLS | MIA, (MID) | Manual incoming service allowed or denied |

**LD16**—Add or change an outgoing manual trunk route.

| | | |
|---|---|---|
| REQ | NEW, CHG | Create a new route or modify an existing one |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| TKTP | aaa | Outgoing trunk type<br>aaa = ADM, AID, ATVN, AWR, CAA, CAM, COT, CSA, DIC, DID, FEX, ISA, ISL, MDM, MUS, PAG, RAN, RCD, RLM, RLR, TIE, WAT |
| ICOG | OGT | Outgoing route |
| ACOD | xxxx . . x | Trunk route access code |
| MANO | Yes | Enable manual outgoing trunk route |

**LD14**—Add or change an outgoing manual trunk.

| | | |
|---|---|---|
| REQ | NEW, CHG | Create a new trunk or modify an existing one |
| TYPE | TIE | Tie trunks are required for manual incoming trunks |
| TN | l s c u | Terminal number (TN) |
| CUST | xx | Customer number |
| RTMB | rrr mmm | Route and member number |
| MNDN | xxx...x | Directory Number (DN) for automatically terminate |
| SIGL | aaa | Trunk signaling<br>aaa = DX2, DX4, EAM, EM4, GRD, LDR, LOP, OAD |

## Feature operation

Not applicable.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 16 |



# Meridian Hospitality Voice Services

Meridian Hospitality Voice Services (MHVS) links Meridian Mail Guest Voice Messaging with the Property Management System (PMS) and the Meridian 1. Meridian Mail uses information from the Property Management System Interface (PMSI) to manage guest voice messaging and to coordinate the Message Waiting indications for both voice and text messaging.

Meridian Hospitality Voice Services (MHVS) allows Meridian Mail to intercept messages sent over the Property Management System Interface (PMSI) and to pass the Meridian 1 only those messages required to manage and coordinate message indications for both voice and text messages. Should Meridian Mail ever fail, a Meridian Mail bypass switch allows the Meridian 1 to be directly connected to the Property Management System Interface (PMSI).

Meridian Hospitality Voice Services (MHVS) provides enhancements to the following features:

— **Pretranslation** MHVS will suppress all pretranslation on calls originated by Meridian Mail virtual agents.

— **Do Not Disturb** MHVS allows calls to telephones in a Do Not Disturb (DND) mode to be rerouted to Meridian Mail for special handling.

— **Controlled Class of Service (CCOS)** When CCOS is allowed on M2327 and M3000 telephones, they do not display the softkey choices for standard Meridian Mail features that do not apply when these telephones are used in guest rooms. Dial Access is required to activate these features.

New Property Management System (PMS) messages (from X11 release 16) are used to integrate the link. Meridian HVS allows Meridian Mail to intercept messages over the Property Management System Interface (PMSI) and passes to the Meridian 1 only those messages required. Should Meridian Mail ever fail, a bypass switch allows the Meridian 1 to link directly with the Property Management System (PMS).

## Operating parameters

The Night Number (NCWF) specified for the AP Recovery enhancement must be local to the system. It cannot be defined using Network Automatic Call Distribution (Network ACD) routing tables.

Attendant consoles cannot be associated with mailboxes on Meridian Mail.

Softkey menus are suppressed for Meridian HVS commands on M2317 and M3000 telephones when Controlled Class of Service (CCOS) has been activated. Dial access must be used to operate Meridian HVS features, except guest messaging mailboxes.

When programming the Night Directory Number (Night DN) associated with the customer and Automatic Call Distribution (ACD) queues, be sure to avoid configuring a loopback of Directory Numbers (DNs) for the Night Call Forward DN. For example, if the Night Call Forward DN terminates on a console (directly or indirectly), then the attendant Night DN should not terminate on the Meridian Mail virtual ACD DN. With this configuration, calls will remain ringing in the ACD queue under these conditions:

- The system is in Night Service Mode
- Meridian Mail fails

The caller remains in the queue until the attendant disengages Night Service, or until the Applications Module Link (AML) recovers from failure.

The use of Integrated Messaging System (IMS) or Integrated Voice Messaging System (IVMS) is not supported with Meridian HVS.

## Feature interactions

- Attendant End to End Signaling (EES)
  Attendant EES (which uses Dual Tone Multifrequency (DTMF) signaling) requires an additional Attendant EES key.

- Attendant Overflow Position (AOP)
  AOP allows unanswered calls to the attendant to be forwarded to a customer-defined Directory Number (DN) after a defined time. A call may also be overflowed if all the attendants are in Position Busy State. With AOP equipped in X11 release 16, overflowed calls can be directed to Meridian Mail. The AOP DN must be defined as an Automatic Case Distribution (ACD) Directory Number (DN), and the ACD DN must have an ACD agent assigned as a virtual VMS agent.

- Centralized Attendant Service (CAS)
  The attendant must be located on the same switch as Meridian Mail for the attendant to use Meridian Mail features.

- Digit Key Signaling (DKS)
  DKS is supported only from attendant consoles at the Meridian Mail site.

- Digit Key Signaling (DKS) at console
  With DKS equipped, attendants may assist callers in Meridian Mail activities. The attendant may extend source calls to Meridian Mail or direct calls to Meridian Mail.

- Do Not Disturb (DND)
  Individual Do Not Disturb (DND) allows the attendant to place a Directory Number (DN) into DND mode. A DN in this mode is free to originate calls, but appears busy to incoming calls. With Meridian HVS equipped, a new prompt (DNDH) allows callers to be redirected to Meridian Mail for voice mail services. A called telephone must have Hunting Allowed (HTA) class of service, and Hunt to Meridian Mail and DNDH in LD15 must both be set to YES.

- M2317, M3000, and Meridian Modular softkey menus
  M2317 or M3000 softkey menus are not supported by Meridian HVS. These telephones with Controlled Class of Service Allowed (CCSA) class of service are not presented with the Meridian Mail softkey menus when connected to Meridian Mail.

- Network ACD
  The Night Number (NCFW) specified for the ACD must be local to the node.
- Property Management System Interface (PMSI), Digit Key Signaling (DKS), DNDH, and Message Waiting indication
  These operations are supported only when PMSI, Meridian Mail, and attendant and room telephones are located on the same Meridian 1 switch.
- Pretranslation
  Prior to Meridian HVS, the setup of calls using the Applications Module Link (AML) was not supported from telephones using the Pretranslation feature. With HVS equipped, call setup using the AML is supported.
- Stripping of Call Party Name Display (CPND) blanks
  The maximum length of a CPND name sent from the PMSI/Background Terminal (BGD) is 27 characters. When the full 27-character length is used, part of the CPND name may scroll off the screen. To avoid this problem, the PMSI/Background Terminal (BGD) software has been updated to strip from the screen all trailing blanks from the CPND name.

# Feature packaging

Meridian HVS requires

— Meridian Hospitality Voice Services (HVS), package 179, which requires

- Recorded Announcement (RAN), package 7
- End to End Signaling (EES), package 10
- Make Set Busy (MSB), package 17
- Integrated Messaging System (IMS), package 35
- Basic Automatic Call Distribution (BACD), package 40
- Automatic Call Distribution Package A (ACDA), package 45
- Message Center (MWC), package 46
- Command and Status Link (CSL), package 77
- CSL with Alpha Signaling (CSLA), package 85
- Auxiliary Processor Link (APL), package 109

— Property Management System Interface (PMSI), package 103, which requires

- Controlled Class of Service (CCOS), package 81
- Background Terminal (BGD), package 99
- Room Status (RMS), package 100

Attendant Overflow Position (AOP), package 56, is required for AOP Directory Number (DN) enhancement.

— Digit Key Signaling (DKS), package (180), which requires

- Hospitality Voice Services (HVS), package 179

The site may also require other packages, such as

- Message Registration (MR), package 101
- Automatic Wake Up (AWU), package 102

## Feature implementation

Refer to *Meridian Mail Modular Option Guest Voice Messaging* (553-7041-210) and *Property Management System Interface description* (553-2801-101)

## Feature operation

Refer to *Meridian Mail Modular Option Guest Voice Messaging* (553-7041-210) and *Property Management System Interface description* (553-2801-101)

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|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Meridian Mail

## Related Documents

For complete information concerning Meridian Mail, see the documents in the lists that follow.

### Meridian Mail Options

*Master Index* (553-7001-000)

*General Description* (553-7001-100)

*Expansion Guide* (553-7001-211)

*Networking Installation Guide* (553-7001-213)

*System Options Guide* (553-7001-215)

*System Administration Guide* (553-7001-301)

*System Administration Tools* (553-7001-305)

*Restore and Voice Volume Recovery Guide* (553-7001-308)

*Maintenance Messages* (553-7001-510)

*Site and Installation Planning* (553-7011-200)

*Installation Checklist* (553-7011-205)

*Installation Guide* (553-7011-210)

*Maintenance Procedures* (553-7011-500)

## Meridian Mail GP

*Master Index* (553-7001-000)

*General Description* (553-7001-100)

*Expansion Guide* (553-7001-211)

*Networking Installation* (553-7001-214)

*System Administration Guide* (553-7001-301)

*System Administration Tools* (553-7001-305)

*Maintenance Messages* (553-7001-510)

*Site and Installation Planning* (553-7031-200)

*Installation Procedures* (553-7031-210)

*Maintenance Procedures* (553-7031-500)

## Meridian Mail Modular Option

*Master Index* (553-7001-000)

*General Description* (553-7001-100)

*Expansion Guide* (553-7001-211)

*Networking Installation Guide* (553-7001-213)

*System Administration Guide* (553-7001-301)

*System Administration Tools* (553-7001-305)

*Maintenance Messages* (553-7001-510)

*Site and Installation Planning* (553-7041-200)

*Meridian Mail Modular Option Guest Voice Messaging* (553-7041-210)

*Maintenance Procedures* (553-7041-500)

| | |
|---|---|
| Issued: | 93 10 31 |
| Status: | Standard |
| X11 Release: | 19 |



# Meridian Mail Voice Mailbox Administration

The Meridian Mail Voice Mailbox Administration (VMBA) feature enables the Meridian 1 system administrator to use Meridian 1 administration overlays to administer and maintain the Meridian Mail Voice Mailbox Application. This feature streamlines the process of implementing and maintaining voice mailboxes (VMBs).

VMBA provides the following capabilities:

— Accessing the Voice Mailbox Application via LDs 10 and 11 rather than via a separate terminal

— Viewing application and mailbox statistics to help ensure the integrity of the application

— Synchronizing the Meridian 1 and Meridian Mail databases using special audit and upload functions

- The audit function helps ensure that name data stored on the Meridian 1 is synchronized with name data stored on Meridian Mail. The system administrator can run the audit manually or request that the system run it periodically.
- For sites that want to implement VMBA and already have VMBs configured on Meridian Mail, the VMBA upload function lets the system administrator create or update the Meridian 1 VMB database from the existing Meridian Mail VMB database. Upload can significantly reduce the time required to implement VMBA.

Access to Meridian Mail VMB administration functions is still available with the Meridian Mail administration console. However, to prevent database inconsistencies, use the Meridian 1 for VMB administration when VMBA is equipped.

In X11 release 19, VMBA is supported on RT, XT, NT, and STE systems, as well as on Options 21A, 21E, 51, 61, 71, and 81. Telephone types supported include the SL-1, Meridian Modular telephones, M2317, M2000, M3000, and 500/2500.

**CAUTION**

Because there is a potential impact on the Meridian 1 CPND database when using the VMBA application, users should read with care the sections entitled "Name processing considerations" on page 108-4 and "Site with a preconfigured Meridian Mail database" on page 108-15.

## Operating parameters

The appropriate VMB class of service[1] must be defined on Meridian Mail before the Meridian 1 can add VMBs. Otherwise, Meridian Mail transaction errors will occur.

A Meridian 1 supports only one Meridian Mail system for VMBs.

The Meridian 1 allows for only one VAS and one customer to be configured for this application.

If a VMB is deleted on the Meridian 1 but not on Meridian Mail, the result could be an orphan VMB. If the DN for the deleted VMB is reused on the Meridian 1, Meridian Mail deletes the old DN and adds the new one, thereby recovering the associated VMB. If the DN is not reused, the orphan VMB is not recovered.

VMB changes made directly on a Meridian Mail administration terminal may not be detected for up to five days, because Meridian 1 automatic database audits (if equipped) can only run every five days.

1. A Meridian Mail class of service specifies a particular set of Meridian Mail options.

The VMB status printed in LD20 indicates the status of transactions on the Meridian 1, not on Meridian Mail. For example, if a VMB is disabled on Meridian Mail, its state is not updated on the Meridian 1.

VMBs cannot be configured for telephones served by a remote Meridian Mail subsystem.

A VMB is not affected when a user's telephone is disabled or being relocated. The VMB remains logged in and continues to receive incoming messages.

## Feature interactions

- Automatic Set Relocation
  Relocating a user with an associated VMB to a new TN will not affect the VMB. The VMB remains logged in and continues to receive incoming voice messages while the set is being relocated.

  A telephone that is relocated out but not relocated back in can still have an active VMB. A relocated set must be deleted manually on the Meridian 1 before its associated VMB is removed.

- CPND
  There is significant interaction between the Meridian 1 CPND database and the Meridian Mail VMB database. The sections entitled "Common data elements" on page 108-4 and "Name processing considerations" on page 108-4 describe these interactions.

- Meridian Mail 8
  Although there is no user impact, unsolicited link messages will appear when VMBA is equipped.

## Common data elements

Table 108-1 shows the data that is stored and synchronized between Meridian 1 and Meridian Mail.

**Table 108-1**
**Data stored by both the Meridian 1 and Meridian Mail**

| Meridian 1 | Meridian Mail | Description |
|---|---|---|
| DN | Mailbox number | Meridian 1 DN to which a VMB is assigned |
| VMB Class of Service | Class of Service | Specific set of Meridian Mail options |
| CPND name | First name/Last name/Initial | Name associated with a VMB (optional) |
| Second DN | Second DN | Second DN sharing a mailbox (optional) |
| Third DN | Third DN | Third DN sharing a mailbox (optional) |

VMB data configured on the Meridian 1 and downloaded to Meridian Mail is subject to the same validation routines as data entered directly at the Meridian Mail administration terminal. When downloaded VMB data fails Meridian Mail validation, a message prints on the Meridian 1 TTY.

## Name processing considerations

There are basic differences in how Meridian 1 CPND and Meridian Mail process name data. This section describes those differences and makes specific recommendations for minimizing their impact on your system.

> *Note:* Because this feature may affect your name data, print the Meridian 1 and Meridian Mail name databases *before* beginning to implement VMBA on a system with VMBs already implemented. (Use the appropriate administrative overlays to print the databases.)

## Name lengths

### *X11 release 18 versus X11 release 19*

In X11 release 18 and earlier, CPND stores names on the Meridian 1 in a single 27-character field. In X11 release 19 and later, CPND stores names in two fields (first name and last name) with a combined length of up to 27 characters. A conversion from X11 release 18 to X11 release 19 includes the following name processing:

- The entire contents of the X11 release 18 CPND name field is placed in the X11 release 19 first name field.
- The contents of the X11 release 19 last name field is set to blanks.

Although this processing preserves existing name data, no automated way is provided for separating name data into first and last name. Therefore, after completing the conversion, you may want to consider using the upload function of VMBA. This function replaces Meridian 1 CPND name data with Meridian Mail name data, which is separated into first and last name.

### *Meridian 1 versus Meridian Mail*

Because the allowable name lengths differ between Meridian Mail and Meridian 1, it is recommended that you use the most restrictive case for name lengths on both systems.

Meridian Mail accepts the following name lengths:

- Up to 21 characters for first name
- Up to 40 characters for last name
- Up to 61 characters for combined first and last names

In X11 release 19, Meridian 1 CPND accepts the following name lengths:

- Up to 27 characters for first name
- Up to 27 characters for last name
- Up to 27 characters for combined first and last names

When the VMBA application is installed, the recommended name lengths on both Meridian 1 and Meridian Mail are as follows:

- Up to 21 characters for first name. Meridian Mail truncates a Meridian 1 first name that is longer than 21 characters.
- Up to 27 characters for combined first and last names. If names on Meridian Mail exceed a combined length of 27 characters, they are truncated on the Meridian 1 during an upload.
- Up to 27 characters for last name. Last names are truncated to 27 characters when uploaded.

### Name handling during an upload

If the CPND package is equipped and CPND is configured for the customer, the following name processing occurs during an upload:

1. If a name already exists on the Meridian 1, it is replaced with the uploaded name using the expected length (XPLN) and display formats configured for that name.
2. If a name does not exist on the Meridian 1, the uploaded name is added using the default length (DFLN) specified for the customer and the default display format of FIRST,LAST.
3. If the names received from Meridian Mail are longer than the expected or default length, the first name is truncated until both names fit into the configured length. If necessary, the last name is also truncated.

For example, if Meridian Mail sends the name JACK FROST and XPLN is 8, the name is truncated to JA FROST. If XPLN is 4, the name is truncated to FROS.

A subsequent audit with DATA_CORRECT set to ON causes the name on Meridian Mail to be updated with the Meridian 1 name (either JA FROST or FROS).

### Character sets

Meridian Mail supports a subset of the characters that Meridian 1 supports. When Meridian Mail encounters a name from the Meridian 1 that contains characters outside its supported character set, it rejects the name. Therefore, it is recommended that you use the most restrictive character set.

The character sets supported by the Meridian 1 and Meridian Mail are as follows:

- Meridian 1: ASCII H.20 through H.7E, excluding asterisk (*) and exclamation point (!)
- Meridian Mail: ASCII H.20 through H.7E excluding the plus sign (+), underscore (_), and question mark (?)

Therefore, on a system with VMBs, the Meridian 1 user should avoid using the asterisk (*), exclamation point (!), plus sign (+), underscore (_), and question mark (?) in CPND names.

## Database synchronization considerations

As you configure and implement VMBA, keep the following points in mind.

- Meridian 1 and Meridian Mail each has its own name database. Therefore, to ensure synchronization, enter and change name information from the Meridian 1 *only*. VMBA facilities ensure that corresponding changes are made to the Meridian Mail database. However, remember that changes made directly to the Meridian Mail are *not* made to the Meridian 1 database.
- The VMBA Audit facility not only detects VMB database mismatches. With Data Correction enabled, the Audit facility invokes processing to make the Meridian Mail VMB database match the Meridian 1 VMB database. See Table 108-2.

**Table 108-2**
**Effect of running Audit with Data Correction enabled**

| Status of VMB | | Effect on VMB databases | |
|---|---|---|---|
| **Meridian 1** | **Meridian Mail** | **Meridian 1** | **Meridian Mail** |
| VMB not configured | VMB not configured | No change | No change |
| VMB not configured | VMB configured | No change | No change |
| VMB configured | VMB not configured | No change | VMB added |
| VMB configured | VMB configured; database matches Meridian 1 | No change | No change |
| VMB configured | VMB configured; database does not match Meridian 1 | No change | VMB database changed to match Meridian 1 database |

– The VMBA Upload facility forces the Meridian 1 VMB database to match the Meridian Mail VMB database. In the case where VMB is not configured on Meridian Mail, an upload will *delete* the Meridian 1 VMB database. See Table 108-2.

**Table 108-3**
**Effect of running Upload**

| Status of VMB | | Effect on VMB databases | |
|---|---|---|---|
| **Meridian 1** | **Meridian Mail** | **Meridian 1** | **Meridian Mail** |
| VMB not configured | VMB not configured | No change | No change |
| VMB not configured | VMB configured | VMB added | No change |
| VMB configured | VMB not configured | VMB deleted | No change |
| VMB configured | VMB configured; database matches Meridian 1 | No change | No change |
| VMB configured | VMB configured; database does not match Meridian 1 | VMB database changed to match Meridian Mail database | No change |

# Feature packaging

Meridian Mail Voice Mailbox Administration (VMBA) is available as package 246. It requires X11 release 19 on the Meridian 1, and Meridian Mail MM9.

Although not required, Calling Party Name Display (CPND), package 95, for the Meridian 1 is recommended. Certain Meridian Mail features, such as name dialing, require that CPND be equipped.

Alarm Filtering, package 243, is recommended because of the additional information that appears in the formatted output.

# Feature implementation

Be sure to print the name databases for both the Meridian 1 and Meridian Mail before beginning to implement the VMBA application.

Implementing VMBA requires that it be installed and equipped on the Meridian 1. (In addition, Meridian Mail must be MM9 or later.) This section includes instructions for three implementation scenarios:

1 A site with no preconfigured database on either the Meridian 1 or Meridian Mail.

2 A site with a preconfigured database on the Meridian 1 but not on Meridian Mail.

3 A site with VMBs configured on Meridian Mail, but not on the Meridian 1.

## Site with no preconfigured database

1 If necessary, configure and enable the AML link to Meridian Mail. For assistance, refer to the *Meridian Link description* (553-3201-110).

2 Configure the VMBA application in LD17 on the VAS link associated with Meridian Mail. Set the DATA_CORRECT and AUTO_AUDIT options to ON to simplify database maintenance and ensure data integrity.

**Table 108-4**
**LD17—Configuring the VMBA application**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | |
| TYPE | CFN, VAS | Configuration Data Block 1 |
| VAS | NEW, CHG | Add or change a value added server link |
| VSID | 0-15 | VAS identifier |
| AML | 0-15 | Application Module Link identifier |
| APPL | NEW VMBA | Configure the VMBA application associated with a VSID |
| CUST | 0-99 | Customer number |
| DATA_CORRECT | ON | Enable automatic database correction during audit; the Meridian Mail database is updated to match the Meridian 1 database. |
| AUTO_AUDIT | ON | Enable automatic database audit; the Meridian Mail database is audited every 5 days as part of daily routines. |

If the AML link is active, the VMBA application is automatically enabled after it is configured in LD17. If the AML link is not active, the VMBA application is placed in the LINKOOS (link out of service) status.

3 Configure the VMB classes of service on Meridian Mail. Transaction errors occur if a class of service specified on the Meridian 1 has not been configured on Meridian Mail.

4 Use LDs 10 and 11 to administer VMBs on the Meridian 1. The database changes are automatically downloaded to Meridian Mail if both the AML and the VMBA application are enabled. If either is disabled, the VMBs that are added or changed are left in the UPDATE PENDING state. They are downloaded when both the AML link and application are enabled. See Tables 108-5 and 108-6.

**Table 108-5**
**LD10—Add a VMB on a 500/2500 telephone**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW, CHG | |
| TYPE | 500, 2500 | DN related data |
| TN | l s c u | Terminal number |
| CUST | 0-99 | Customer number |
| DN | xxxx | Directory number |
| _MARP | YES | Multiple Appearance Redirection Prime |
| _CPND | NEW, CHG | Gateway to change Calling Party Name Display data |
| __VMB | NEW, CHG | Gateway to change VMB data associated with the above DN |
| __VMB_COS | 0-127 | VMB Class of Service; must already be defined on Meridian Mail to avoid transaction errors |
| __SECOND_DN | xxx...x | Second DN sharing this VMB<br>To delete a DN, enter X <cr> |
| __THIRD_DN | xxx...x | Third DN sharing this VMB<br>To delete a DN, enter X <cr> |
| __KEEP_MSGS | YES, (NO) | For a new VMB only, indicates whether messages and current password on Meridian Mail should be preserved if a VMB with the same DN already exists |

**Table 108-6**
**LD11—Add a VMB on a digital telephone**

| Prompt | Response | Description |
|---|---|---|
| REQ | NEW | |
| TYPE | aaaa | Telephone type |
| TN | l s c u | Terminal Number |
| CUST | 0-99 | Customer Number |
| KEY | xx yyy zzzz | Telephone function key assignments |
| _MARP | YES | Multiple Appearance Redirection Prime |
| _CPND | NEW, CHG | Gateway to Calling Party Name Display data |
| __VMB | NEW, CHG | Gateway to change VMB data associated with the above DN |
| __SECOND_DN | xxx...x | Second DN sharing this VMB To delete a DN, enter X <cr> |
| __THIRD_DN | xxx...x | Second DN sharing this VMB To delete a DN, enter X <cr> |
| __KEEP_MSGS | YES, (NO) | For a new VMB only, indicates whether messages and current password on Meridian Mail should be preserved if a VMB with the same DN already exists |

## Site with a preconfigured Meridian 1 database

Typically, this scenario involves a new Meridian 1 installation. The database is created on the Meridian 1 and subsequently downloaded when the AML link and Meridian Mail are operational.

### Configuring the database

1 Configure the VMBA application in LD17 on the VAS associated with Meridian Mail. See Table 108-4 page 108-11. Set the DATA_CORRECT and AUTO_AUDIT options to OFF until the installation is complete.

The AML link does not have to be configured at this point because there is no actual hardware to enable.

2 Configure the telephones and associated VMBs. The VMBs will be left in UPDATE PENDING state. See Tables 108-5 and 108-6.

### Installing the database at the customer site

1 Ensure that the Meridian Mail database is configured with the VMB classes of service that were used when configuring the Meridian 1 database. *Do not proceed with Step 2 until this step is completed.*

2 If necessary, configure and enable the AML link to Meridian Mail. For assistance, refer to the *Meridian Link description* (553-3201-110).

3 Unless the VMBA application is in a manually disabled state, it will be automatically enabled. If it is manually disabled, use LD48 to enable it. See "Enabling the VMBA application" on page 108-17.

4 When the VMBA application is enabled, the system will begin downloading the preconfigured database to Meridian Mail. Use the PRT VMB option in LD20 to monitor the progress of the download.

5 After the download is complete, check the Meridian 1 TTY for errors and make corrections manually.

6 Use LD48 to initiate a manual audit of the entire database. This is to verify that the VMB and CPND data on the Meridian 1 matches the downloaded data on Meridian Mail. See "Starting a manual audit" on page 108-26.

To determine the status of the audit, use the STAT VMBA <vsid> AUDT command in LD48. When the audit is complete, check the audit report for errors; make corrections manually.

7 Configure the DATA_CORRECT and AUTO_AUDIT options as desired. It is recommended you set them to ON to help ensure database integrity.

Installation is now complete. Use the Meridian 1 to perform ongoing administration of VMBs.

## Site with a preconfigured Meridian Mail database

Existing sites installing the VMBA application may have VMBs already configured on Meridian Mail. LD48 includes an upload option that simplifies VMB data configuration on the Meridian 1.

**CAUTION**

The upload option also causes name data configured on Meridian Mail to be uploaded to the Meridian 1. Any existing names on the Meridian 1 are replaced with names currently configured on Meridian Mail. See "Name processing considerations" on page 108-4 for an explanation of the changes that may result.

1 If necessary, configure and enable the AML link to Meridian Mail. For assistance, refer to the *Meridian Link description* (553-3201-110).

2 Configure the VMBA application in LD17 on the VAS associated with Meridian Mail. See Table 108-4, on page 11. Set the DATA_CORRECT and AUTO_AUDIT options to OFF until the installation is complete.

If the AML link is active, the VMBA application is automatically enabled after it is configured in LD17. If the AML link is not active, the VMBA application is placed in the LINKOOS (link out of service) state.

3 Initiate the database upload by entering the following command in LD48:

ENL VMBA <vsid> UPLD ALL

To check the status of the upload, enter the following command in LD48:

STAT VMBA <vsid> UPLD

4 When the VMB UPLOAD COMPLETE message appears, investigate and resolve any errors that occurred during the upload.

5 Initiate a manual database audit using the following command in LD48:

ENL VMBA <vsid> AUDT ALL

This will verify that the VMB and CPND data on the Meridian 1 matches the data on Meridian Mail.

6 Manually resolve any errors detected by the audit. Perform any necessary name cleanup.

7 Configure the DATA_CORRECT and AUTO_AUDIT options as desired. It is recommended you set them to ON to help ensure database integrity.

Installation is now complete. Use the Meridian 1 to perform ongoing administration of VMBs.

# Feature operation

## Enabling the VMBA application

Use the VAS gateway in LD17 to configure the VMBA application. See Table 108-4, on page 11. After configuring the VMBA application, the Meridian 1 sets the VMBA application state to INACTIVE and immediately attempts to establish a VMBA session with Meridian Mail. If successful, the Meridian 1 changes the VMBA application state to ACTIVE and prints an APPLICATION ENABLED message on the TTY. If unsuccessful, the following actions occur:

- If the AML link is down:
  - The system issues a FAILED TO ENABLE APPLICATION message to the TTY.
  - The application's state is changed to LINKOOS (link out of service).
  - The application is automatically enabled when the link becomes available.
- If the AML link is up but the application is not responding on Meridian Mail:
  - The system attempts to establish a session every two minutes until successful or until the user disables the application using LD48.
- If the AML link is up but the application is not equipped on Meridian Mail:
  - For MM8 and earlier releases, the system attempts to establish a session as described above. Such attempts obviously fail. Disable VMBA until the upgrade to MM9 occurs.
  - For MM9 and later releases, Meridian Mail indicates to the Meridian 1 that the feature is not configured. The message FAILED TO ENABLE APPLICATION appears on the TTY, indicating that the request is rejected. The application remains in INACTIVE status. Retries continue until the user disables the application in LD48 or until the application is equipped on MM9.

If the VMBA application is not automatically enabled, use the following command in LD48 to enable it:

ENL VMBA <vsid>

where <vsid> is the VAS identifier, in the range of 0-15.

## Disabling the VMBA application

LD48 accepts the following command to disable the VMBA application:

DIS VMBA <vsid>

where <vsid> is the VAS identifier, in the range of 0-15.

The following actions occur when the application is disabled:

1 The VMBA application state is changed from ACTIVE to MANDIS.

2 All VMB transactions in progress with Meridian Mail are aborted. VMBs defined on the Meridian 1 but not successfully updated on Meridian Mail remain in the UPDATE PENDING state. They will be processed when the application is reenabled.

3 Database audit or upload activities are aborted.

4 The VMBA session established with Meridian Mail is released.

## Determining the status of the VMBA application

LD48 accepts the following command to print the status of the VMBA application:

STAT VMBA <vsid>

where <vsid> is the VAS identifier, in the range of 0-15.

Output from this command, shown in the following example, indicates the status of the application, the audit function, and the upload function:

VMBA ACTIVE
AUDIT INACTIVE
UPLOAD INACTIVE

Valid application states for VMBA appear in Table 108-7.

**Table 108-7**
**VMBA Application States**

| State | Explanation |
|---|---|
| INACTIVE | The application has been configured in LD17 but is inactive for one of the following reasons:<br>— An application session request was sent to Meridian Mail but confirmation has not yet been received.<br>— Meridian Mail is not configured to support the VMBA application (it does not have the application equipped, or it is running on MM8 or earlier).<br>— A FAILED TO ENABLE APPLICATION message on the TTY indicates a reason why the application is inactive. |
| MANDIS | The application was manually disabled using LD48. |
| LINKOOS | The application is inactive because the link to Meridian Mail is out of service. |
| ACTIVE | The application is enabled and operational. |

## Managing voice mailbox data

### Adding or changing a VMB

Use LDs 10 and 11 to add or change a VMB. See Tables 108-5 on page 108-12 and Table 108-6 on page 108-13. Use LDs 10, 11, or 95 to add or change a name.

When a VMB is added or changed, the system places the VMB in the UPDPEND (update pending) state and informs a background process that an update is pending. The background process initiates an update transaction with Meridian Mail, with one of these outcomes:

- The operation is successful; the VMB state becomes CONFIGURED.
- The operation fails (perhaps because of bad data); the VMB state becomes UPDFAIL (update failed) and a craftsperson must manually intervene to correct the error condition.
- If the VMB already exists on Meridian Mail when the Meridian 1 requests a VMB add, one of the following outcomes results.
  - If the response to the KEEP_MSGS prompt in LDs 10 and 11 was NO, Meridian Mail deletes the existing VMB and creates a new one using the configuration information specified by the Meridian 1. All existing messages and passwords are deleted.
  - If the response to the KEEP_MSGS prompt in LDs 10 and 11 was YES, Meridian Mail keeps all existing messages and passwords associated with the VMB, but replaces the existing configuration information with the new configuration specified by the Meridian 1. This information includes user name, class of service, and so forth. Meridian Mail automatically enables newly created VMBs.

### Deleting a VMB

There are three ways to delete a VMB:

- When using LDs 10 and 11, enter OUT at the VMB prompt.

  When doing a normal CHG or ECHG on a telephone in LDs 10 and 11, enter OUT at the VMB prompt to delete the telephone's VMB.
- When using LDs 10 and 11 to delete a telephone, enter OUT at the REQ prompt.

If a telephone is configured with a single appearance DN, the DELETE_VMB prompt appears as a prompt after the craftsperson enters OUT at the REQ prompt. A YES response causes the VMB to be deleted on both the Meridian 1 and Meridian Mail. A NO response causes the VMB to be deleted on Meridian 1 but not on Meridian Mail.

The DELETE_VMB and the KEEP_MSGS prompts allow a craftsperson to move a user from one telephone type to another without having to delete and recreate the VMB.

- DELETE_VMB = NO when deleting a DN keeps the old mailbox. KEEP_MSGS = YES when adding a new telephone (with the old, previously deleted DN) keeps VMB messages and password from the old DN intact.
- DELETE_VMB = NO when deleting a DN keeps the old mailbox. KEEP_MSGS = NO when adding a new telephone (with the old, previously deleted DN) deletes the VMB messages and password associated with the mailbox.

When changing a single appearance DN on a telephone, the system automatically deletes the old DN and associated VMB.

When the changed DN is entered, if it is currently assigned to another telephone that has a VMB associated with it, the telephone with the changed DN becomes a user of that VMB. If the changed DN does not currently have a VMB, one can be added.

*Note:* When changing the DN for a member of a multi-appearance DN group, the VMB for the Multi-Appearance DN is unaffected.

## Printing VMB data

LDs 20 and 83 support printing VMB data associated with a telephone. With X11 release 19 and later, LDs 10 and 11 can access LD20 to facilitate printing VMB data after it is entered.

LD20 provides three ways to print VMB data:

– Use the PRT DNB command to print the DN block. See Table 108-8.

**Table 108-8**
**LD20 - Print the DN block**

| Prompt | Response | Description |
|---|---|---|
| REQ | PRT | |
| TYPE | DNB | DN related information |
| CUST | 0-99 | Customer Number |
| DN | xxxx | Directory Number |

– Use the PRT TNB command to print the TN block. See Table 108-9.

**Table 108-9**
**LD20 - Print the TN block**

| Prompt | Response | Description |
|---|---|---|
| REQ | PRT | |
| TYPE | TNB, aaaa | TN block, or any telephone configured in LD11 |
| TN | l s c u | Terminal Number |

– Use the PRT VMB command to print the VMB DN and VMB state. See Table 108-10. For a definition of each state, see Table108-11 .

**Table 108-10**
**LD20 - Print VMB data**

| Prompt | Response | Description |
|---|---|---|
| REQ | PRT | |
| TYPE | VMB | VMB related information |
| CUST | 0-99 | Customer Number |
| DN | xxxx<br>xxxx-yyyy<br>(ALL) | Print data for a single DN<br>Print data for a range of DNs<br>Print data for all DNs with VMBs |
| VMB_STATE | (ALL)<br>UPDPEND<br>CONFIGURED<br>UPDFAIL<br>MISMATCH<br>UPDINPROG<br>INVALID | Print all VMBs regardless of state<br>Print VMBs in update pending state<br>Print configured VMBs<br>Print VMBs whose updates failed<br>Print VMBs with database mismatches<br>Print VMBs with updates in progress<br>Print VMBs in an invalid state |

**Table 108-11**
**VMB States**

| State | Explanation |
|---|---|
| CONFIGURED | The VMB is configured on the Meridian 1 and Meridian Mail. |
| UPDPEND | A VMB update is pending. The VMB has been added or changed on the Meridian 1 but Meridian Mail has not yet been updated. When the AML link comes up (if it is down), or when the backlog of updates (if any) is processed, the VMB will be updated automatically. |
| UPDINPROG | A VMB update is in progress. The request was sent to Meridian Mail but a confirmation has not yet been received by the Meridian 1. |
| UPDFAIL | A transaction with Meridian Mail failed. A VMB UPDATE FAIL error message appears on the Meridian 1 TTY indicating the cause of the failure. A craftsperson must intervene to correct the problem. |
| MISMATCH | There is a database mismatch between the Meridian 1 and Meridian Mail. The mismatch was detected by VMBA Audit but not corrected (because database correction is not enabled in LD17). A VMB MISMATCH FOUND error appears on the Meridian 1 TTY indicating the mismatch. A craftsperson must intervene to correct the problem. |
| INVALID | The VMB is in an invalid state. Verify that the VMB data for the DN is correct on the Meridian 1. Then use LD48 to run VMB Audit on the DN. |

– To print VMB data in LD83, respond with TNB at the REQ prompt. This response causes the TN block to print, including VMB data. See Table 108-12.

**Table 108-12**
**LD83 - Print ODAS data**

| Prompt | Response | Description |
|---|---|---|
| REQ | TNB | Print TN data |
| CUST | 0-99 | Customer Number |

## Determining VMB state

Review the printed VMB data to determine the status of a particular VMB. Valid VMB states appear in Table 108-11.

## Auditing the VMB database

The VMBA application provides both automatic and manual synchronization procedures to help ensure the consistency of the Meridian 1 and Meridian Mail databases. The databases may lose synchronization during one of the following events:

- A craftsperson changes VMBs directly on Meridian Mail rather than through the Meridian 1.
- A transaction error occurs during transmission between the Meridian 1 and Meridian Mail.

**CAUTION**

LD17 includes a data correction setting (DATA_CORRECT = ON). With this option activated when an audit is run, the system resolves any discrepancy by changing the Meridian Mail database to match the Meridian 1 database. If the databases are out of synchronization because VMB data was changed directly on Meridian Mail, the audit replaces the changed Meridian Mail data with the original Meridian 1 data. Therefore, it is advisable to run an audit initially with DATA_CORRECT = OFF to determine what discrepancies (if any) exist.

### *Using automatic audit*

Responding with ON to the AUTO_AUDIT prompt in LD17 causes a detailed database consistency check to run every five days. During this audit, Meridian Mail compares its VMB data with each Meridian 1 DN's data. There are three possible results:

- The data for that DN matches.

  Meridian Mail indicates a match to the Meridian 1.

- The data for that DN does not match, and DATA_CORRECT = ON.

  Meridian Mail changes its data to match the data on the Meridian 1. A message appears on the Meridian 1 TTY indicating that a discrepancy was detected and corrected.

- The data for that DN does not match, and DATA_CORRECT = OFF.

A message appears on the Meridian 1 TTY indicating that a discrepancy was detected. Manual intervention is required to correct the discrepancy.

### *Starting a manual audit*

To start the audit function manually, use the ENL VMBA command with the AUDT option in LD48. The format of the command is as follows:

ENL VMBA <vsid> AUDT <ALL, xxxx>

where:

**<vsid>** is the VAS ID on which the application is configured
**ALL** specifies that all configured VMBs be audited
**xxxx** specifies the DN whose VMB is to be audited

### *Disabling audit*

Use the DIS VMBA with the AUDT option to disable the audit function. The format of the command is as follows:

DIS VMBA <vsid> AUDT

where **<vsid>** is the VAS ID.

This command disables both automatic and manual audits.

### *Determining audit status*

Use the STAT VMBA with the AUDT option to determine the status of an audit. The format of the command is as follows:

STAT VMBA <vsid> AUDT

where **<vsid>** is the VAS ID.

Output from this command takes the following format:

**AUDIT ACTIVE**
**x AUDITED**
**y MISMATCHES FOUND/CORRECTED**
**z ERRORS**

where:

**x** is the number of VMBs audited
**y** is the number of mismatches found (and corrected, if DATA_CORRECT = ON
**z** is the number of failed audit operations

### Uploading the Meridian Mail VMB database

Existing sites installing the VMBA application may already have VMBs configured on Meridian Mail. To eliminate the need for a craftsperson to add each VMB manually on the Meridian 1, the VMBA application includes the ability to upload the Meridian Mail VMB database to the Meridian 1.

The VMB upload command in LD48 causes the following processing, if the ALL option is specified. The processing is applied to all SCR, SCN, MCR, and MCN DNs configured on the Meridian 1.

1 For each DN on the Meridian 1, Meridian Mail checks to see if a VMB is currently defined.

2 If a Meridian Mail VMB exists for the DN, the VMB data associated with the DN, including the VMB name, is uploaded to the Meridian 1. The Meridian 1 uses the uploaded data to create VMB data and name (or to replace existing VMB data and name) for that DN.

**CAUTION**

If the second or third DNs received from Meridian Mail are greater than four digits (or seven digits, if the DN expansion feature is equipped), they are discarded. A subsequent audit with data correction enabled deletes them from Meridian Mail.

3 If a Meridian Mail VMB does not exist for the DN, and if a VMB is currently configured for the DN on the Meridian 1, the VMB is deleted.

*Note:* A name currently configured for the DN on the Meridian 1 is not deleted.

#### *Starting a database upload*

To start a database upload, use the ENL VMBA command with the UPLD option in LD48. The format of the command is as follows:

ENL VMBA <vsid> UPLD <ALL,xxxx>

where:

**<vsid>** is the VAS ID on which the application is configured
**ALL** specifies that data for all configured VMBs is to be uploaded
**xxxx** specifies the DN whose VMB data is to be uploaded

### *Disabling a database upload*

Use the DIS VMBA with the UPLD option to disable the upload. The format of the command is as follows:

DIS VMBA <vsid> UPLD

where **<vsid>** is the VAS ID.

### *Determining upload status*

Use the STAT VMBA with the UPLD option to determine the status of an upload. The format of the command is as follows:

STAT VMBA <vsid> UPLD

where **<vsid>** is the VAS ID.

Output from this command takes the following format:

**UPLOAD ACTIVE**
**x UPLOADED**
**y DELETED**
**z ERRORS**

where:

**x** is the number of VMBs uploaded
**y** is the number of VMBs deleted
**z** is the number of failed upload operations

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 9 |



# Meridian Manager

*Note:* Meridian Manager is supported with X11 release 17 and earlier only.

Meridian Manager consists of the following three personal computer-based applications:

— **Station Administration** This user-friendly interface to the SL-1 allows additions, moves, and changes within SL-1 Telephone Data Blocks (LD10 and LD11).

— **Work Order System** This application provides administration databases for the handling of inventories, configurations, work orders and cabling records.

— **Traffic Reporting** This application collects, processes, and analyzes traffic data taken from the SL-1 system. The performance of the SL-1 is optimized by providing clear, easy to understand graphs and reports on trunks, attendants, attendant queues, network loops, and processor use.

The three Meridian Manager applications run under MS-DOS. Meridian Manager software is supported on the IBM PC AT and PS/2, Compaq DeskPro and Hewlett-Packard Vectra personal computer families. The applications are available individually or together in one package.

Complete instructions for installing and operating Meridian Manager software packages can be found in the following Northern Telecom documents:

— *Feature Description* (PO707599)
— *Station Administration* (PO707698)
— *Work Order System* (PO707699)
— *Traffic Reporting* (PO707700)

## Operating parameters

Refer to the documents listed.

## Feature interactions

Refer to the documents listed.

## Feature packaging

Not applicable.

## Feature implementation

Not applicable.

## Feature operation

Not applicable.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Meridian MAX/ACD-MAX

Meridian MAX and ACD-MAX are management tools that supplement the Automatic Call Distribution (ACD) feature on the Meridian 1/SL-1. Meridian MAX and ACD-MAX compile and display ACD operations information and generate management reports. Meridian MAX and ACD-MAX are connected to the Meridian 1/SL-1 through one or two Serial Data Interface (SDI) ports.

The specific functions Meridian MAX and ACD-MAX perform include the following:

— receive agent, queue, and trunk status data from the Meridian 1/SL-1

— calculate the necessary statistics

— display data for current performance and store data for past-performance reports

— generate and print all performance reports based on historical data

— offer configuration control

— schedule and create report definitions

— manage current-performance display screens

— provide a menu-driven interface for supervisors

— manage the various parameters set by the system administrator

The following platforms exist. Meridian MAX 4.0 is an AM-base product designed for an Option 21-81. A single-module system supports up to 150 ACD positions and 3000 calls per hour. The dual-module system supports up to 500 ACD positions (which can be increased to 1000 via a purchasable option) and handles 10,000 calls per hour.

The Meridian MAX-IPE 4.6 is an Intelligent Peripheral Equipment module that fits into the Option 11 or the Option 21-81. It is designed to meet the needs of smaller customers. Meridian MAX-IPE 4.6 provides the same functionality as the single-module Meridian MAX 4.0 except that it has flexible ACD position sizing up to 80 positions.

ACD-MAX is an HP-base product designed for the Option 21-81. A single-tower system supports up to 150 ACD positions and 3000 calls per hour. The dual-tower system supports up to 500 ACD positions (which can be increased to 1000 via a purchasable option) and handles 10,000 calls per hour.

## Related documents

For complete information regarding ACD-MAX and Meridian MAX, see the following documents.

### ACD-MAX

- *Master Index* (553-4001-003)
- *ACD-MAX Installation* (553-4001-110)
- *ACD-MAX Operations* (553-4401-510)
- *ACD-MAX System Messages* (553-4001-810)
- *ACD-MAX Overview* (553-4001-910)
- *ACD-MAX 3.0 Supervisor's User Guide* (P0706646)

### Meridian MAX 4.0

- *Application Equipment Module installation guide* (553-3201-200)
- *Master Index* (553-4001-002)
- *Meridian MAX 3.3-AM Installation* (553-4001-101)
- *Meridian MAX 3.3-AM System Messages* (553-4001-801)
- *Meridian MAX 3.3-AM Overview* (553-4001-901)
- *Meridian MAX 3.3 Supervisor's User Guide* (P0734369)

## Meridian MAX-IPE 4.6

- *Master Index* (553-4001-024)
- *Meridian MAX-IPE 4.6 Installation* (553-4001-121)
- *Meridian MAX-IPE 4.6 Maintenance and Diagnostics* (553-4001-821)
- *Meridian MAX-IPE 4.6 Overview* (553-4001-921)
- *Meridian MAX-IPE 4.6 Supervisor's Guide* (PO741145)

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Message Center

Message Center allows an incoming trunk or internal call to be automatically routed to a Message Center if it is not answered at the original destination. The main functions of the Message Center are to

— receive and take messages for calls forwarded to the Message Center

— convey messages to called telephones or consoles on request

— activate and deactivate Message Waiting indication at users' telephones

Automatic and manual diagnostics are provided to clear all active Message Waiting indications when required. Three types of Message Center operations are offered:

— SL-1 and Meridian digital telephone

— attendant console

— Automatic Call Distribution (ACD)

Depending on the packages equipped, you can have any Message Center option or combination of Message Center options.

For complete information, see *Message Center description and operation* (553-2691-100).

**Network Message Services—Message Center (NMS-MC) X11 release 15** introduces Network Message Center. For a complete discussion, see the feature module on Network Message Services.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | All |



# Message Registration

Message Registration (MR) allows customers to meter local calls so that Hospitality administration can read, change, and reset message units stored on the meters.

Software meters accumulate call charges for room phones, administration phones, customer phones, attendant consoles, incoming tie trunks, and Central Office (CO) trunks.

## Operating parameters

Meters are incremented when Reverse Battery (RVB) signals are received from loop start or ground start Central Office (CO) trunks. The meter is incremented once for each completed local call, regardless of duration, against the originating Directory Number (DN). No charge is made to any meter if a call over a metered route is not established.

Metering is applied on a route basis. When provisioning a customer for the MR feature, calls that are to be metered can have access only to routes that are metered. Metered calls cannot be overflowed to a nonmetered route.

One software meter is assigned to every telephone Directory Number (DN), attendant DN, and Trunk Access Code (TRC) that requires metering. Each software meter can count up to 32,766 calls before being automatically reset to zero. Prior to reset, the meter contents are displayed on the system background terminal.

The ATTN meter accumulates charges for all metered calls made by attendant consoles within a customer group. The TRK meter is provided for each incoming tie trunk route and Central Office (CO) route. Charges are registered for tandem call connections made by incoming tie trunks over a meter-assigned route. One overflow meter, the CUST meter, allows each customer to accumulate any charges that cannot be registered to another meter.

With call modification, the party originating the metered call has its meter charged. Once the meter is charged, the charge cannot be transferred to another party's meter through Call Modification.

Attendant-originated calls to metered routes are charged to the party connected to the call source. If no party is connected to the source, then the attendant's meter is charged.

If the attendant originates a call to a CO trunk, and the call is not extended to an internal Directory Number (DN), the attendant's meter is incremented.

Incoming tie trunks involved in metered tandem calls are charged to a meter associated with the route, to allow for billing to a party other than the customer.

Metered calls made within the customer that cannot be charged to any other meter are charged to the overflow meter associated with the CUST meter.

Message Registration (MR) uses only the Reverse Battery (RVB) type of answer supervision. **Periodic Pulse Metering is not supported.**

A QPC219, QPC330, or QPC450 trunk card must be used for the CO trunk routes receiving Reverse Battery Signals (RVB). Also, a QPC330 card must have its signaling set up as for a QPC219 trunk card.

The NT8D14 Universal trunk does not provide MR.

A Background Terminal (BGD) assigned meter access Controlled Class of Service (CCOS) can automatically read, change, or print meter values. The reading, changing, and printing can also be done manually. From a BGD, any meter can be turned on or off (that is, set to accumulate or not accumulate charges), except for the customer meter, which is always on. When the BGD accesses a meter, a classification indicating the meter type is shown. The five possible meter classifications are

- ROOM (room number)
- ADMN (administration)
- ATTN (attendant console)
- TRK (trunk)
- CUST (customer/miscellaneous)

For detailed information regarding Background Terminal (BGD) commands for MR, refer to *Background Terminal user guide.*

Meter contents can also be read or changed by an SL-1 or Meridian digital telephone equipped with a Message Registration key/lamp pair (MRK) and a display. The M2317 telephone can also be used. Three values are shown on the display for MR:

- the Directory Number (DN) of the telephone whose meter value is being changed
- the existing value of the meter
- the new value being entered

An MRK cannot be assigned to Automatic Call Distribution (ACD) agents.

The Call Detail Recording (CDR) feature does not display message registration meter information.

## Feature interactions

- Attendant Administration
  MR service change is not supported by Attendant Administration.
- Automatic Voice Network (AUTOVON)/Coordinated Dialing Plan (CDP)/Centralized Attendant Service (CAS)
  MR is mutually exclusive of AUTOVON, CDP, and CAS.
- Call Transfer/Conference, Call Forward All Calls
  The party that originates a call is charged. The charge cannot be moved to another party using XFER, Conference, or Call Forward All Calls.
- Multiple Appearance Directory Number (MADN)
  For MADNs, the system selects the appropriate meter for the DN based by following this procedure:

  **a** It accesses the meter of the most recently configured telephone having a Prime DN (PDN) appearance and Message Registration Allowed (MRA) class of service.

  **b** If no Terminal Number (TN) in the DN block has MRA class of service, the customer meter is charged. For the Message Registration Key (MRK), the system provides overflow and sets the MRK lamp to flash. For the Background Terminal (BGD), it prints a NO DATA FOUND message.

- Multi-Tenant Services
  The ability to retrieve or update hotel or motel Room Status (RMS) and meter count exists at the customer level, not at the tenant level.
- Maintenance
  Any maintenance testing done on metered trunks does not affect the meter values.

## Feature packaging

Message Registration (MR), package 101, requires

- Controlled Class of Service (CCOS), package 81
- Background Terminal (BGD), package 99

# Feature implementation

**LD16** – Activate Message Registration on routes.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| TKTP | aaa | Trunk route type<br>aaa = ADM, AID, ATVN, AWR, CAA, CAM, COT, CSA, DIC, DID, FEX, FGOT, ISA, MCU, MDM, MUS, PAG, R232, R422, RAN, RCD, RLM, RLR, TIE, WAT |
| _MR | YES, RVB, (NO) | Only prompted if TKTP = COT or FGOT; MR provided on all routes, Reverse Battery (RVB) routes, or no routes (default) |

**LD14** – Change a trunk.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | COT | CO trunks |
| TN | l s c u | Terminal Number (TN) |
| CLS | PSP, (PIP) | Polarity sensitive or insensitive<br>Use PSP for QPC218, QPC219, QPC295<br>Use PIP for QPC330, QPC331 |

**LD10** – Allow or deny 500/2500 telephones access to meters.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number (TN) |
| CLS | MRA, (MRD) | MR allowed or denied |

**LD11** – Allow or deny SL-1 or Meridian digital telephones access to meters.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616 |
| TN | l s c u | Terminal Number (TN) |
| CLS | aaa | Digit Display options<br>aaa = ADD, DDS, NDD |
| | MRA, (MRD) | MR allowed or denied |
| KEY | xx MRK | MR key<br>xx = key number |

## Feature operation

Not applicable.

Issued: 93 10 31
Status: Standard
X11 Release: 19



# Message Waiting Indication (MWI) Interworking

Message Waiting Indication (MWI) Interworking provides a means to pass the Message Waiting Indicator across a private network with the following types of systems: Meridian 1, DMS-100, DMS-250, SL-100. This feature is compatible with Meridian 1 Network Message Services.

*Note:* Throughout this discussion, the phrase "other system" refers to the DMS-100, DMS-250, or SL-100.

MWI Interworking enables Meridian 1 users to subscribe to a the voice message system on the other system, or users on the other system to subscribe to the voice message system on Meridian 1.

With this feature, a single message system can serve a combined network, with either of two configurations:

— Meridian 1 hosts the Message Center, and serves both Meridian 1 users and users of the other system in the same enterprise group. See "Message Center" on page 111-1.

— The other system hosts the Message Center, and serves both Meridian 1 users and users of the other system in the same or different enterprise groups. See Figure 113-2.

**Figure 113-1**
**Private Corporate Network with Meridian 1 hosting the Message Center**

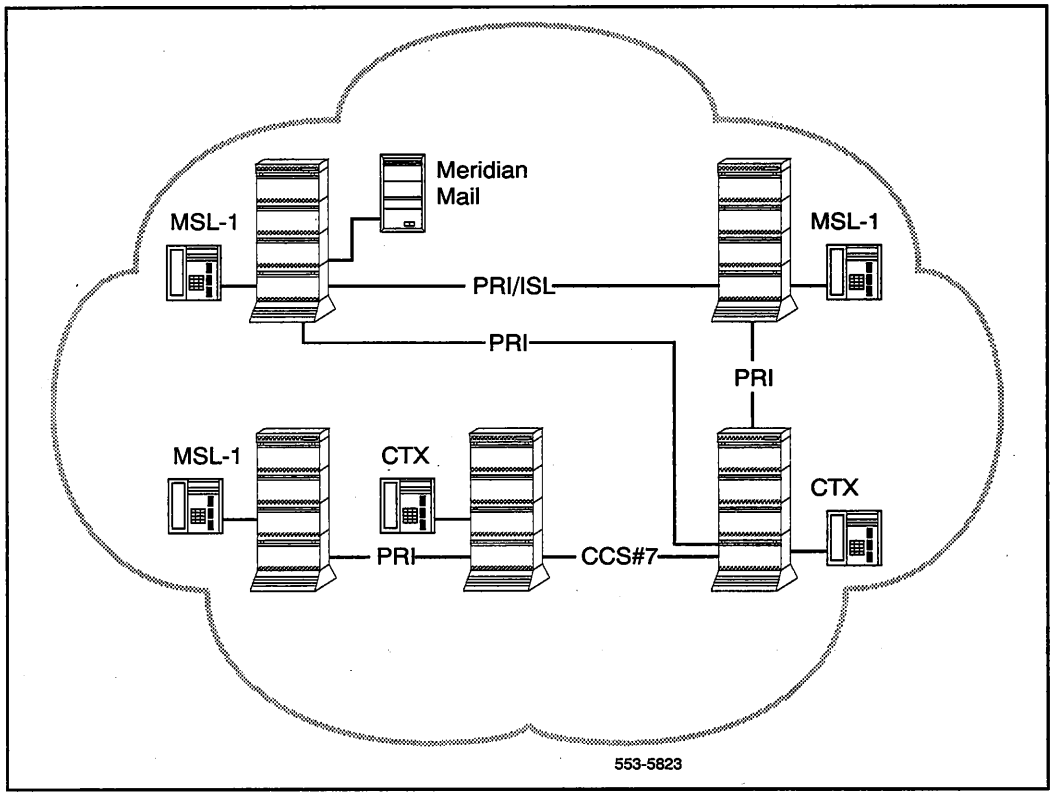
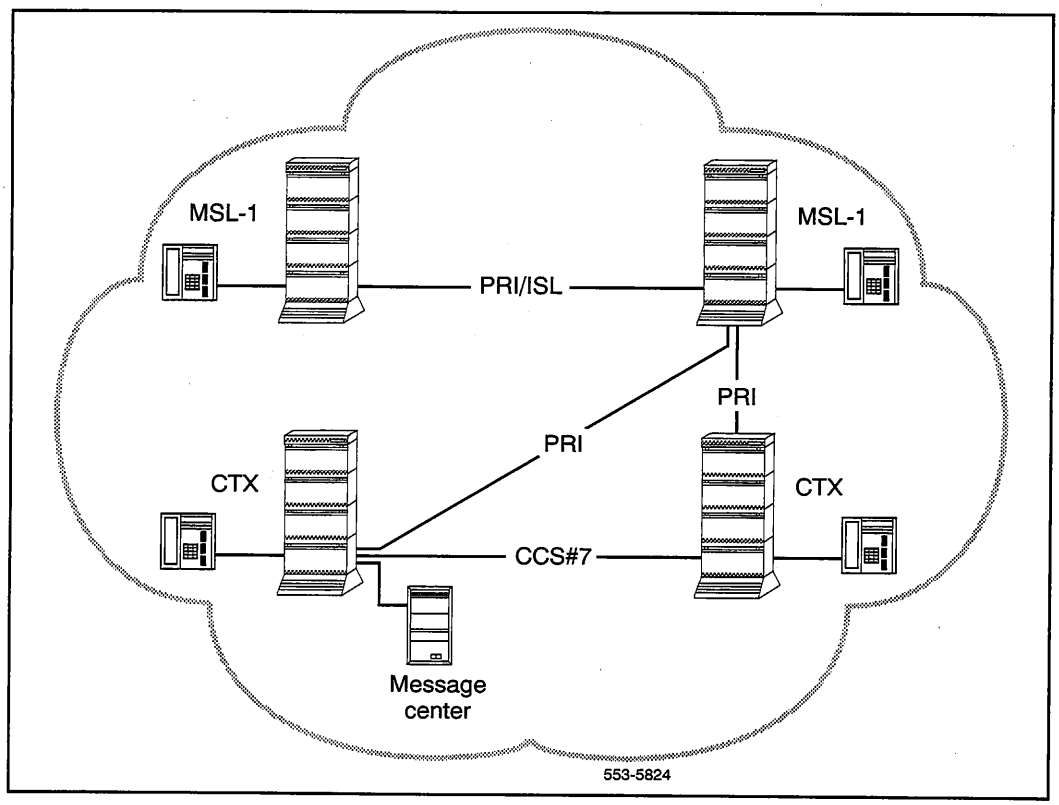


**Figure 113-2**
**Private Corporate Network with DMS hosting the Message Center**



# Operating parameters

The switches in the network are connected as shown in Table 113-1.

**Table 113-1**
**Network switch connections**

| To connect | Use |
|---|---|
| Meridian 1 to Meridian 1 | ISDN/PRI/ISL |
| Meridian 1 to other system | PRI |
| Other system to other system | PRI/CCS#7 |

If the Message Center is on a Meridian-1 and it serves users on DMS, the Meridian-1 must be on X11 release 19 or later.

If the Message Center is on DMS for MWI Interworking, a Meridian-1 that is connected to DMS must be on X11 release 19 or later.

End-to-End Signalling is required to access the Message Center features from a local or remote system.

Only Meridian Mail is supported for use as the Message Center on a Meridian 1. This feature does not support any other messaging system, such as a manual Message Center hosted on a Meridian 1, a non-Meridian product hosting the Message Center, or other server applications (such as FAX servers or E-Mail).

The other system can be a tandem switch. DMS BCS 36 or later supports DMS-100, DMS-250, and SL-100 systems. Only Northern Telecom systems are supported.

# Feature interactions

- Multi Customer MWI
  Interworking does not support multiple customers because Meridian Mail supports only one customer. If multiple customers are required, multiple Meridian Mail servers are required.

- Multi Tenant
  Meridian Mail Phase 8 and later supports Multi Tenant. For MWI Interworking, tenants that belong to the same customer can use one or multiple Message Center servers. Tenants from different customers cannot use the same Meridian Mail. The customer can allow (or disallow) access to this feature for specific tenants by configuring (or not configuring) the tenant's sets for call forwarding to Meridian Mail DN.

- Trunk Optimization Before Answer
  There is no Trunk Optimization when the call is redirected to DMS, or answered by Meridian Mail. This applies to applications such as Auto Attendant.

- Network Message Services–Meridian Mail
  The Facility message for MWI Interworking uses a different Transaction Capabilities Application Part (TCAP) format from that used for other network message services. Message conversion occurs when sending and receiving MWI Facility messages with software earlier than X11 release 19.

- DCH Error Monitoring
  X11 release 17 DCH Error Monitoring monitors ISDN messages on a per feature basis. The conflict between the Service Identifier used by Meridian 1 and DMS for Network Message Services is resolved by providing a different Service Identifier (H70). X11 release 19 supports both the existing (H7C) and new Service Identifiers.

  However, if the MWI RCAP for the D channel is added or deleted in Overlay 17, the D channel message monitoring must be disabled and enabled so that DCH Error Monitoring will work properly for the Network Message Services (NMS) feature.

- ISDN/AP Link Recovery
  Calls in the Meridian Mail ACD queue are redirected to the ACD Night Call Forward DN when the Application Modular Link (AML) goes down.

# Feature packaging

MWI Interworking is available as package 219. It requires the Network Message Service features of Meridian Mail release 7. It also requires that the other system be equipped with BCS 36 at a minimum. The package requirements for each node are described in the following tables.

**Table 113-2**
**Package requirements for the originating node (the node with Message Center users)**

| | |
|---|---|
| MWI package 219 | If connected to DMS (BCS 36) for Interworking |
| NMS package 175 | |
| BACD package 40 and ACDA package 45 | If ACD DN is used as the Message Center DN |
| ISDN Signaling package 145 | |
| ISDN Primary Rate Access package 146 or ISDN Signaling Link package 147 | |
| ISDN Network Service package 148 | |
| Message Center (MWC) package 46 | |
| End-to-End Signaling (EES) package 10 | |

**Table 113-3**
**Package requirements for the host node (the node hosting the Message Center)**

| | |
|---|---|
| MWI package 219<br>NMS package 175<br>Integrated Message System (IMS) package 35<br>ISDN/AP package 77<br>BACD package 40<br>ACDA package 45<br>ISDN Signaling package 145<br>ISDN Primary Rate Access package 146 or<br>ISDN Signaling Link package 147<br>ISDN Network Services package 148<br>Message Center (MWC) package 46<br>End-to-End Signaling (EES) package 10 | X11 release 19 or later is required. |

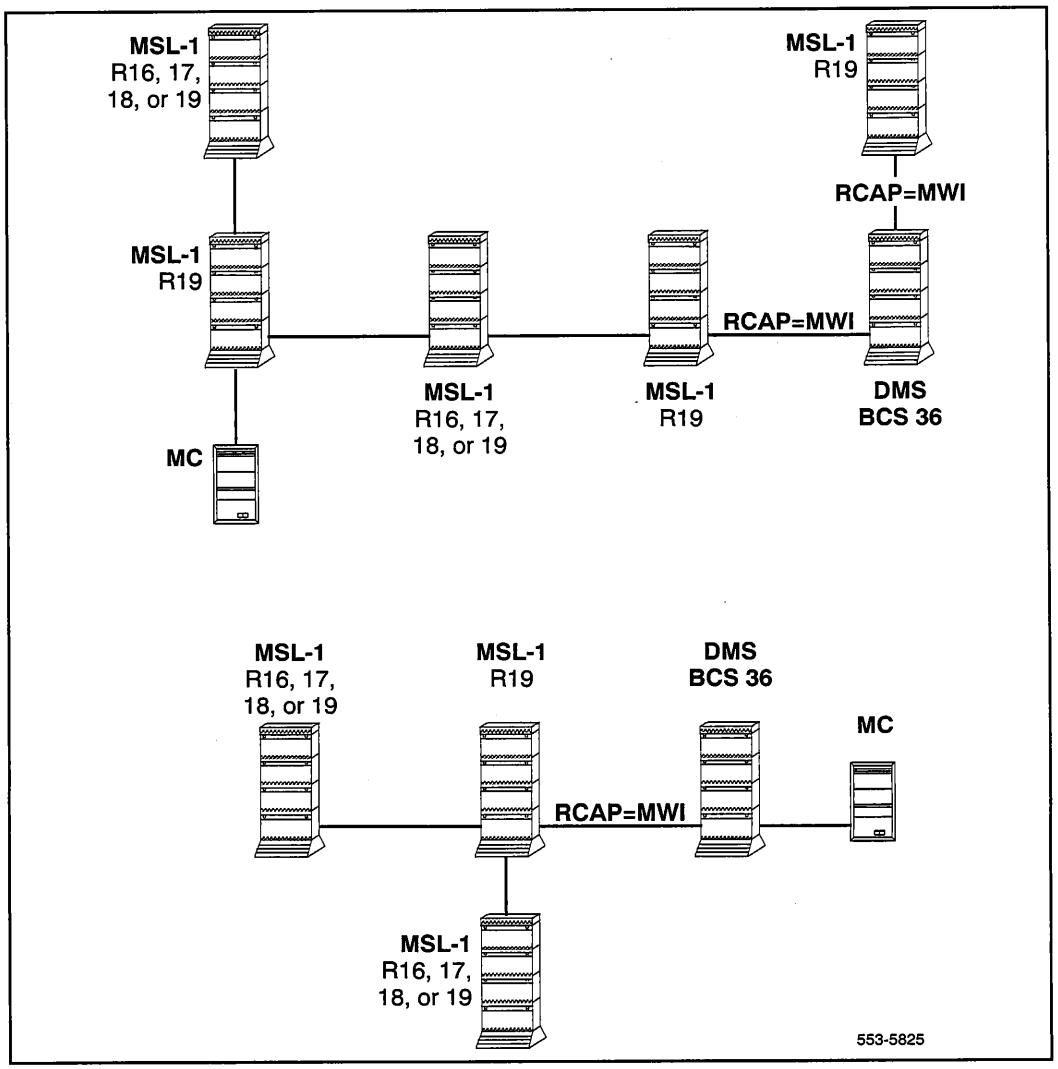
**Table 113-4**
**Package requirements for the tandem node (the node that does not have Message Center users)**

| | |
|---|---|
| MWI package 219<br>ISDN Signaling package 145<br>ISDN Primary Rate Access package 146 or<br>ISDN Signaling Link package 147<br>ISDN Network Services package 148 | If connected to DMS (BCS 36) for Interworking |

# Feature implementation

See Figure 113-3 for the configuration required for MWI Interworking.

**Figure 113-3**
**Configuration Requirements for MWI Interworking**



Response to the following prompts in the listed overlays activates MWI Interworking.

**Table 113-5**
**LD 17—Configuring MWI remote D channel capability**

| | | |
|---|---|---|
| REQ | CHG | |
| TYPE | CFN | |
| RLS | 19 | Release ID of the switch at the far end of the D channel interface |
| RCAP | MWI | Add MWI as a remote D channel capability; use XMWI to remove the capability. |

**Table 113-6**
**LD 23—Configuring a Message Center DN**

| | | |
|---|---|---|
| REQ | NEW/CHG | |
| TYPE | ACD | |
| CUST | xx | |
| ACDN | xxxx | |
| MWC | YES | ACD DN message center DN |
| NCFW | xx.....xx | DMS message center DN, 10-digit public number prefixed by an ESN access code or an ESN number prefixed by an ESN access code (if Uniform Dialing Plan (UDP) is used) |

## Feature operation

Not applicable.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 15 |



# Message Waiting Lamp Maintenance

This maintenance enhancement alleviates the "dark effect" when neon lights are tested in low ambient light conditions.

Because the dark effect is inherent to neon lamps, it is recommended that PBXT Message Waiting Lamp tests not be run during low ambient light conditions. The line card detector circuitry may register lamp failures under these circumstances, and the Message Waiting Lamp test may be unreliable. Lamps are listed as faulty when they fail the test once in three attempts.

The PBXT Message Waiting Lamp tests should be run under one of the following conditions:

— automatically at a system specified time

— manually at any time (LD32)

Automatic scheduling should consider low traffic times, when there is still enough ambient light to avoid the dark affect. To prevent the automatic scheduling of LD32, LD32 must be excluded from the daily routines ("midnights") and the system defined hour must be the default "X" value.

When the hour defined defaults to the "X" value, an error message is output to remind the customer that the PBXT tests are still part of the daily routines, unless LD32 is removed from the list.

## Operating parameters

There are no feature requirements.

## Feature interactions

There are no feature interactions.



## Feature packaging

Message Waiting Lamp Maintenance requires Message Waiting Center (MWC), package 46.

## Feature Implementation

**LD17** – Define the time for the maintenance tests.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration record |
| OVLY | Yes, (No) | Change overlay area options |
| PBXH | hh | PBX Hour for maintenance tests<br>hh = Hour for tests, 0–23 |
| | x | Enter x if no tests are to be performed |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 19 |



# MSDL Serial Data Interface

Serial Data Interface (SDI) is supported by the Multi-purpose Serial Data Link (MSDL) card with X11 release 19 and later. SDI extends the I/O capability of the MSDL card by providing an asynchronous serial data interface. SDI is composed of software components that reside on the Meridian 1 and the MSDL.

For a complete description of MDSL SDI, please refer to *X11 system management application* (553-3001-301).

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Multiple Appearance DN Redirection Prime

With X11 release 18 and later, Multiple Appearance DN Redirection Prime (MARP) standardizes call redirection on Multiple Appearance DNs (MADNs) by using a service changeable Multiple Appearance DN Redirection Prime Terminal Number (MARP TN).

Each defined single or multiple appearance DN has only one associated MARP TN. When a call redirection feature activated against a DN needs Terminal Number (TN)-specific information, the MARP TN is used to determine feature operation. Call redirection always refers to the MARP TN.

MARP provides consistent operation for the following call redirection features:

— Call Forward All Calls

  Refer to the feature interactions section in this module for important information regarding Call Forward (CFW) operations.

— Call Forward Busy

— Call Forward No Answer

— Hunting

# Operating parameters

Short Hunt takes precedence over MARP TN directions.

MARP is activated in LD17. If MARP is not active, call redirection occurs according to the pre-X11 release 18 algorithms. All the MARP prompts and messages appear even if MARP is not active. MARP TNs can still be added, assigned, and changed. Refer to specific call redirection modules in this document for details regarding the pre-X11 release 18 algorithms.

The MARP TN is defined in LD10 or LD11. When activated, only the MARP TN is used to determine call redirection.

If MARP is not activated, the following overlays have this message printed, "MARP NOT ACTIVATED." The message appears only once, when the overlay is loaded. When MARP is active, no message appears. The overlays are

LDs 10, 11, 20, 22, 25, 80, 81, 82, and 83

When MARP is activated in service change (MARP = Yes) calls are immediately directed according to the MARP TN. There is no need to sysload.

Every single or multiple appearance DN has a MARP TN. MARP TNs are also defined for Data DNs, optional incoming two-way Hot Line DNs, and ringing and non-ringing Private Line DNs. Automatic Call Distribution (ACD) DNs are not assigned MARP TNs.

New systems are installed with MARP activated. MARP TNs are assigned to all single and multiple appearance DNs. Call redirection follows the MARP TN assignments.

## Conversion

When converting pre-X11 release 18 software to X11 release 18 or later, a MARP TN is automatically assigned for each single and multiple appearance DN. This conversion does not activate MARP. Call redirection operates according to the pre-X11 release 18 algorithms. All the MARP prompts and messages appear even if MARP is not active. MARP TNs can still be added, assigned, and changed.

When operating on X11 release 18, and converting to an upissue, the MARP TN assignments remain. If MARP was activated, it retains that activity following the upissue. If MARP was deactivated, that status is also maintained following the upissuee.

## MARP TNs assigned at service change

Each DN *must* have an associated MARP TN. After a service change or a telephone relocation, the system assigns a MARP TN to the DN in the following situations:

- The MARP TN containing the DN is removed.
- The DN appearance on its MARP TN is changed to another DN.
- The DN appearance on its MARP TN is no longer the redirection prime.

The "TN list" refers to the list of TNs that appears when you print the DN block in LD20 or LD22 (TYPE = DNB). To determine the order in which your TNs appear, print out the DN block.

When assigning MARP TNs during service change, the system conducts a search beginning at the top of the TN list for the first appearance of the DN as the Prime DN. The MARP TN is assigned based on the following:

1 The first TN found with a primary appearance of the DN is assigned as the MARP TN.

2 If no primary appearance of the DN is found, the first TN encountered with a secondary appearance of the DN is assigned as the MARP TN.

### MARP TNs assigned at conversion and sysload

When converting to X11 release 18, a MARP TN is automatically assigned to each DN at sysload. The MARP TNs are assigned to the DNs based on the following:

1 The lowest numerical TN with a primary appearance of the DN is assigned as the MARP TN.

2 If no primary appearance of the DN is found, the lowest numerical TN with a secondary appearance of the DN is assigned as the MARP TN.

**CAUTION**

MARP assignments made during conversion may change the manner in which calls are redirected. Refer to the individual call redirection modules in this document for details of the pre-X11 release 18 algorithms.

## Feature interactions

### Attendant Administration

MARP TNs cannot be added, moved, or deleted with Attendant Administration. The DN information that displays on the console does include the MARP designation if applicable.

Attendant administration activities, like changing key assignments or DN appearance, may change MARP TN assignments. If so, CSC102 appears on the teletype (TTY) indicating a new default MARP TN, as follows:

CSC102 DN nnnn NEW MARP l s c u
Where:
nnnn = the DN associated with the MARP TN
l s c u = the new MARP TN assigned to DN nnnn

### Automatic Set Relocation and Modular Telephone Relocation

When Automatic Set Relocation is used to move a telephone, the telephone's MARP designations are maintained. During the relocation, a temporary MARP TN is assigned. The original MARP TN is restored when the telephone relocates.

When a set leaves the system due to set relocation, the following Customer Service Change (CSC) message appears:

CSC010 x y
Where:
x = old TN (l s c u) for the telephone
y = ID code entered

The following Service Change (SCH) message appears for any MARP TN reassignment:

SCH5524 DN nnnn NEW MARP l s c u
Where:
nnnn = the DN associated with the MARP TN
l s c u = the new default MARP for DN nnnn

The History File can be configured to store these messages until a printout is requested.

When a telephone reenters the system, the following message appears:

CSC011 x y
Where:
x = old TN (l s c u) for the telephone
y = new TN (l s c u) for the telephone

The following message appears again for *each* changed TN:

SCH5524 DN nnnn NEW MARP l s c u
Where:
nnnn = the DN associated with the MARP TN
l s c u = the new MARP TN assigned to DN nnnn

### Automatic Call Distribution

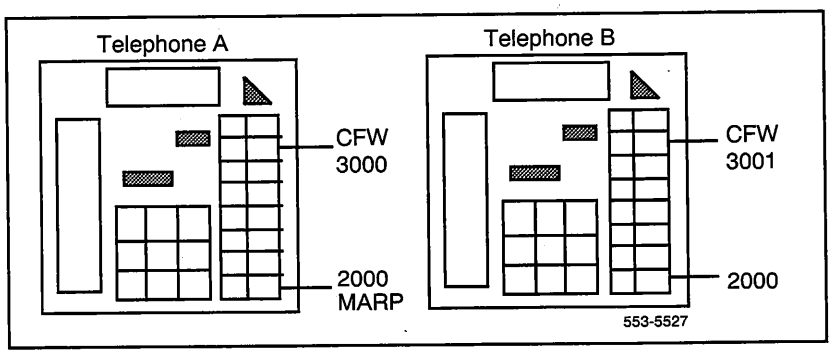
ACD DNs are not assigned MARP TNs. Agent Individual DNs (IDNs) are assigned MARP TNs.

### Call Forward All Calls

If CFW is active for a DN, incoming calls are forwarded if a TN is found that has CFW enabled, and is a single appearance or a Prime multiple appearance of that DN (according to existing operation). The MARP TN is always checked first to meet these criteria. When the requirements are met, the system uses the information associated with the MARP TN to redirect the call.

If the MARP TN is not a prime appearance but *does* have CFW enabled, a search is made for a telephone with a prime appearance of that DN with CFW enabled. When a TN is found, the call is redirected according to the MARP TN's parameters. If the MARP TN is not a prime appearance and *does not* have CFW enabled, the system searches for a prime appearance with CFW enabled. The incoming call is forwarded according to the other telephone's instructions (not the MARP TN's), as shown in Figure 116-1.

**Figure 116-1**
**CFW and MARP**




CFW DN on Telephone A is DN 3000.
CFW DN on Telephone B is DN 3001.

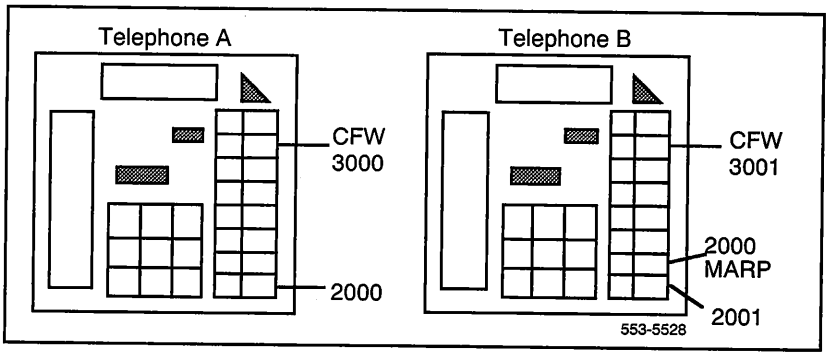
If *only* Telephone A has CWF active, calls to DN 2000 are forwarded to DN 3000.

If *only* Telephone B has CWF active, calls to DN 2000 are forwarded to DN 3001.

If *both* telephone A and B have CWF enabled, calls to DN 2000 are forwarded to DN 3000 because Telephone A is the MARP TN.

At times, even though the MARP TN is actually a secondary DN appearance, it can control where a call is redirected. Due to potential confusion, it is recommended that a secondary appearance not be defined as the MARP TN when a prime appearance is available. Refer to Figure 116-2.

**Figure 116-2**
**MARP control**




CFW DN on Telephone A is DN 3000.
CFW DN on Telephone B is DN 3001.

If *both* Telephone A and Telephone B have CWF active, all calls to DN 2000 go to DN 3001 because Telephone B is the MARP TN.

If *only* Telephone A has CWF active, all calls to DN 2000 go to DN 3000.

If *only* Telephone B has CWF active, no calls to DN 2000 are forwarded.

If all DN appearances are secondary, no calls are forwarded.

### Call Forward No Answer

The MARP TN always controls the call redirection for Call Forward No Answer.

### Hunting

The MARP TN always controls the call redirection for Hunting. Short Hunting takes precedence over Hunting and MARP. The MARP TN is referred to until short hunting is encountered. Short hunting is in control until it expires. When short hunting expires, the MARP TN for the first DN in the short hunt sequence takes control.

## Feature packaging

This feature is included in the base X11 system software.

## Feature implementation

If MARP is not activated, the following overlays have this message printed, "MARP NOT ACTIVATED." The message appears only once, at the very beginning of the overlay. When MARP is active, no message appears. The overlays are

LDs 10, 11, 20, 22, 25, 80, 81, 82, and 83

When changing or adding a new Single Appearance DN to the system, the MARP TN is automatically assigned. The system indicates this TN is the MARP for the new DN with a MARP message.

When adding or changing a Multiple Appearance DN, the system indicates which TN is the current MARP TN. You can reassign the MARP TN if required.

SCH5524 appears at the end of the service change session, when the MARP TN has been changed.

**LD10**—Add a 500/2500 telephone with a Single Appearance DN.

| | | |
|---|---|---|
| REQ | NEW | Add new data to the system |
| TYPE | 500 | 500/2500 set |
| TN | l s c u | Terminal number |
| DN | xxx...x | Directory number |
| _MARP | | MARP prints on the next line indicating this TN is the MARP for DN xxxx |

**LD10** – Add a 500/2500 telephone with a Multiple Appearance DN.

| | | |
|---|---|---|
| REQ | NEW | Add new data to the system |
| TYPE | 500 | 500/2500 set |
| TN | l s c u | Terminal number |
| DN | xxx...x | Directory number |
| _MARP ON TN | l s c u | *MARP ON TN l s c u* prints on the next line indicating TN<br>l s c u is the current MARP. |
| _MARP | Yes, (No) | Set the MARP to this new TN |
| SCH5524 DN nnnn NEW MARP | l s c u | This message indicates the MARP for the old DN nnnn is changed. The new MARP is TN l s c u. |

**LD10** – Changing a 500/2500 telephone with a Multiple Appearance DN.

| | | |
|---|---|---|
| REQ | CHG | Modify existing data |
| TYPE | 500 | 500/2500 set |
| TN | l s c u | Terminal number |
| DN | xxx...x | Directory number |
| _MARP ON TN | l s c u | This message indicates the current MARP is TN l s c u. |
| _MARP | Yes, (No) | Set the MARP to this TN |
| SCH5524 DN nnnn NEW MARP | l s c u | The message indicates the MARP for the old DN nnnn is changed. The new MARP is TN l s c u. |

**LD11** – Add a telephone with a Single Appearance DN.

| | | |
|---|---|---|
| REQ | NEW | Add new data to the system |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal number |
| KEY | xx aaa yyyy | xx is the key number<br>aaa is the DN type:mcn (multi-call nonring)<br>mcr (multi-call ring)<br>scn (single-call nonring)<br>scr (single-call ring)<br>yyyy is the DN |
| _MARP | | *MARP* prints on the next line indicating this TN is the MARP for DN yyyy |
| KEY | | Reprompts until <cr> is entered |

**LD11** – Add a telephone with a multiple appearance DN.

| | | |
|---|---|---|
| REQ | NEW | Add new data to the system |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal number |
| KEY | xx aaa yyyy | xx is the key number<br>aaa is the DN type:<br>mcn (multi-call nonring)<br>mcr (multi-call ring)<br>scn (single-call nonring)<br>scr (single-call ring)<br>yyyy is an existing DN |
| _MARP ON TN | l s c u | *MARP ON TN l s c u* prints on the next line indicating TN<br>l s c u is the current MARP. |
| _MARP | Yes, (No) | Set the MARP to this new TN |
| KEY | | Reprompts until <cr> is entered |
| SCH5524 DN nnnn NEW MARP | l s c u | This message indicates the MARP for the old DN nnnn is changed. The new MARP is TN l s c u. |

**LD11** – Changing a telephone with a Multiple Appearance DN.

| | | |
|---|---|---|
| REQ | CHG | Modify existing data |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal number |
| KEY | xx aaa yyyy | xx is the key number<br>aaa is the DN type:<br>mcn (multi-call nonring)<br>mcr (multi-call ring)<br>scn (single-call nonring)<br>scr (single-call ring)<br>yyyy is the DN |
| _MARP ON TN | l s c u | *MARP ON TN l s c u* prints on the next line indicating TN<br>l s c u is the current MARP. |
| _MARP | Yes, (No) | Set the MARP to the working TN |
| KEY | | Reprompts until <cr> is entered |
| SCH5524 DN nnnn NEW MARP | l s c u | This message indicates the MARP for the old DN nnnn is changed. The new MARP is TN l s c u. |

**LD10/LD11** – Removing a MARP TN.

| | | |
|---|---|---|
| REQ | OUT | Remove data from the system |
| TYPE | aaaa | Telephone type<br>aaaa = 500, 2500, SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | TN l s c u is the MARP for DN nnnn.<br>This is the TN that is being removed. |
| SCH5524 DN nnnn NEW MARP | l s c u | This message indicates the MARP for the old DN nnnn is changed. The new MARP is TN l s c u. |

**LD17** – Activating or deactivating MARP.

| | | |
|---|---|---|
| REQ | CHG | Change data |
| TYPE | CFN | Configuration record |
| PARM | YES | Change system parameters |
| _MARP | YES/NO | Activate or deactivate MARP. There is no default. <CR> retains the previous system data. |

**LD20 or LD22** – Print MARP information.

| | | |
|---|---|---|
| REQ | PRT | Print information |
| TYPE | TNB (DNB, SL1) | Terminal number data block<br>(Can also print out DN data block or telephone type.) |

The printout will look like the following.

– For the DN datablock:

```
DN 2000
TYPE SL1
TN 018 0 02 00 KEY 00  MARP  DES NO DES  NO DATE
TN 018 0 02 01 KEY 01        DES NO DES  NO DATE
```

– For a telephone data block:

```
DES NO DES
TN 001 0 0 00
TYPE SL1
KEY 00 MCR 2000 MARP
01 MRK
```

## Feature operation

Not applicable.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Multiple Console operation

The Meridian 1 permits each customer to have up to 63 attendant consoles. X11 release 7 and earlier software permit each customer to have up to 15 attendant consoles. Incoming calls are routed in a circular fashion to the first idle attendant. If all consoles are busy, calls are held in the attendant queue and are presented to the first idle attendant. Each console is identified by a customer-defined, two-digit attendant console number (01 to 63).

The assignment of Incoming Call Indicators (ICIs) and Trunk Group Busy (TGB) key/lamp pairs is identical for all attendant consoles in the customer group, except when Console Presentation Group Level Services, a multi-tenant feature, is configured. The flexible features key/lamp strip can be assigned on a per console basis.

The features that can be assigned to the flexible features strip include the following:

— Attendant Administration

— Autodial

— Automatic Wake Up

— Barge-In

— Busy Verify

— Call Park

— Calling Party Number

— Charge Account

— Controlled Class of Service, Enhanced

— Display Calls Waiting

- Display Date
- Display/Change Date
- Display Destination
- Display Source
- Display Time
- Display/Change Time
- Do Not Disturb (Individual)
- Do Not Disturb (Group)
- End to End Signaling
- Malicious Call Trace
- Message Cancellation
- Message Indication
- Mini-CDR Low Tape Alarm (SL-1M only)
- Paging
- Routing Control
- Speed Call Controller
- System Speed Call Controller
- Stored Number Redial

## Operating parameters

Prior to X11 release 8, only 15 attendant consoles per customer were permitted. X11 release 8 and later software allows 63 consoles to be defined per customer.

## Feature interactions

- Departmental Listed Directory Number (DLDN)
  DLDN supports the assignment of 63 consoles per Departmental LDN.
- Multi-Tenant Services
  Up to 63 consoles may be defined in a single Console Presentation Group (CPG).

## Feature packaging

This capability is included in basic X11 system software.

## Feature implementation

The following overlays have been modified to allow input of 63 consoles on X11 release 8 and later software:

- Attendant Console LD12
- Customer Data Block LD15
- Tenant-to-Tenant Access LD93

## Feature operation

There is no specific procedure required to operate this feature.

Issued: 92 12 31
Status: Standard
X11 Release: All



# Multiple Customer Operation

The Meridian 1 system can serve up to 32 (customer numbers 0–31) individual customers from the same machine. X11 release 14 and later software supports 100 customer groups (numbered 0–99). Customers have their own features, restrictions, numbering plans, trunks, and special services. They are granted access to the system as if they are the sole user.

## Operating parameters

Only XN, NT, XT, 61, 71, and 81 systems on X11 release 14 and later software can implement 100 customer groups.

## Feature interactions

System hardware, like serial data interface (SDI), Digitone Receiver (DTR), Tone and Digit Switch (TDS), and Conference, are shared among all the customers on the machine.

The Speed Call list parameter (8191) applies to the machine, not the customer. It is shared among all customers on the system.

## Feature packaging

Multiple Customer Operation (CUST), package 2, has no feature package dependencies.

## Feature implementation

Not applicable.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Multi-Tenant Service

The Multi-Tenant Service feature facilitates the resale by Meridian 1 customers of Meridian 1 services and resources. Telephones belonging to a customer may be divided into customer sub-groups known as tenants. The groups are separated by group access restrictions. Access to other tenants, to attendant consoles, and to trunk routes can be programmed in such a way that tenants can have private use of some facilities, share some, or be denied access to others. Call Detail Recording (CDR) records include the tenant number as well as the customer number.

The number of tenants that can be configured per customer depends on the number of configured customers and the amount of available memory. The maximum is 512 tenants per customer. All telephones default to Tenant 0 (zero).

All tenants share the customer's numbering plan and service-changeable features. Because the features are defined at the customer level, they are identical for each tenant. Possible features are outlined in the following paragraphs.

— Tenant-to-Tenant Access
A tenant's relationship with other tenants of the same customer is defined by Tenant-to-Tenant Access. A tenant can be configured to allow direct internal call access to some or all tenants of the same customer. Likewise, the tenant can be denied direct access to other tenants. To reach these tenants, a trunk call must be placed.

- Tenant-to-Route Access
  Meridian 1 supports up to 128 trunk routes per customer. XN, NT, XT, 61, 71, and 81 systems support 512 trunk routes per customer on X11 release 14 and later software. Each tenant can share or have private access to any or all of these routes. Tenant access applies only to outgoing calls. All tenants have access to incoming calls on any route.

- Attendant Console Groups
  Within the Multi-Tenant Service feature, all attendant consoles are placed into groups that are associated with specific tenants and specific incoming trunk routes. The group number range is from zero through 63. All attendant consoles configured for a customer are automatically members of group zero. The other groups are defined in service change to fit tenant requirements.

The Multi-Tenant feature functions as follows:

- Internal Attendant DN Calls
  When a tenant telephone dials the attendant DN, the call is presented to an idle attendant console. The call is routed to an attendant group associated with the tenant of the calling telephone, if attendant console groups attendant console group number (AGNO) have been specified for the tenant.

- Incoming External Calls
  Incoming external calls are presented only to the attendant console group specified to serve the trunk group.

- Attendant Initiated Calls
  All attendants have access to the customer's numbering plan and can initiate calls to any customer's tenants.

- Attendant Overflow Position
  The Attendant Overflow DN (AODN) is accessible to all tenants on incoming trunk calls. Attendant calls from tenants who do not have tenant access to the AODN do not divert to AODN but remain in the attendant queue.

- Attendant Recall
  When a tenant telephone recalls the attendant, the call is presented to an attendant in a group specified for the tenant of the calling telephone.

- Attendant Extended Call
  Internal attendant calls from tenant A to tenant B may be extended only if tenant A and tenant B are allowed Tenant-to-Tenant Access.

- Access to Incoming Trunk Route
  Any tenant can be accessed on an incoming call from any incoming trunk route. Attendant console groups can be specified to receive automatic presentation of incoming calls from specified routes. This includes calls that terminate at an attendant console and calls that intercept to an attendant console.

- Access to Outgoing Trunk Routes
  Tenants dial the appropriate trunk route access code to connect to a trunk route. Access codes are assigned on a trunk route basis. Therefore all tenants use the same access code to connect to a particular route. Customer telephones have access to all outgoing trunk routes belonging to their tenants. Access to specific trunk routes is allowed or denied to individual tenants through service changes. Tenants who try to access denied routes receive normal intercept treatment.

## Operating parameters

Refer to *Multi-Tenant Service description* (553-2831-100).

## Feature interactions

Multi-Tenant access restrictions affect the way that tenants interact with other tenants, trunk routes, and attendant consoles.

In general, Multi-Tenant access restrictions take precedence over the Meridian 1 features with which they interact.

## Feature packaging

Multi-Tenant Service (TENS), package 86, has no feature package dependencies.

# Feature implementation

**LD93**—Enable, disable, or print Multi-Tenant Service for a specified customer.

| | | |
|---|---|---|
| REQ | NEW, OUT, PRT | |
| TYPE | TENS | Tenant service data block |
| CUST | 0–99 | Customer number |
| ***Note:*** Ensure that the customer night DN and the attendant overflow DN (if assigned) are accessible by all tenants | | |

**LD93**—Allow, deny, or print tenant-to-tenant access for a specified tenant.

| | | |
|---|---|---|
| REQ | CHG, PRT | Change or print |
| TYPE | TACC | Tenant-to-tenant access data block |
| CUST | 0–99 | Customer number |
| TEN | 1–511 | Tenant number |
| ACC | DENY | Access denied tenants are to be entered |
| | ALOW | Access allowed tenants are to be entered |
| DENY | 1–511 1–511 | Tenant numbers denied access to and from this tenant (prompted if ACC=DENY) |
| | ALL | All tenant numbers denied access to and from this tenant (tenant can only access itself) |
| ALOW | 1–511 1–511 | Tenant numbers allowed access to and from this tenant (prompted if ACC=ALOW) |
| | ALL | All tenant numbers allowed access to and from this tenant |
| ***Note:*** Tenant 0 is reserved for telephones with a TEND Class of Service | | |

**LD93** – Allow, deny, or print tenant-to-route access for a specified trunk route.

| | | |
|---|---|---|
| REQ | CHG, PRT | Change or print |
| TYPE | RACC | Tenant-to-route access data block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| ACC | DENY | Tenants denied access to the route are to be entered |
| | ALOW | Tenants allowed access to the route are to be entered |
| DENY | 1–511 1–511 | Tenant numbers denied access to this route (prompted if ACC=DENY) |
| | ALL | All tenant numbers denied access to this route |
| ALOW | 1–511 1–511 | Tenant numbers allowed access to this route (prompted if ACC=ALOW) |
| | ALL | All tenant numbers allowed access to this route |
| ***Note:*** Tenant 0 is reserved for telephones with a TEND Class of Service | | |

**LD93** – Add or change attendant console group.

| | | |
|---|---|---|
| REQ | NEW, CHG, OUT, PRT | |
| TYPE | ACG, CPG | Attendant console group data block |
| CUST | 0–99 | Customer number |
| AGNO | 1–63 | Attendant console group number<br>***Note:*** Attendant group 0 (AGNO 0) always exists and contains all attendant consoles configured for the customer. |
| ANUM | 1–63 1–63 | Add attendant console numbers (before X11 release 8, only 15 attendant consoles are allowed) |

**LD93** – Assign or print tenant-to-attendant console access.

| | | |
|---|---|---|
| REQ | CHG, PRT | Change or print |
| TYPE | TACG, TCPG | Tenant-to-attendant console access data block |
| CUST | 0–99 | Customer number |
| TEN | 1–511 | Tenant number |
| AGNO | 0–63 | Attendant console group number |
| ***Note:*** Tenant 0 is reserved for telephones with a TEND Class of Service | | |

**LD93** – Assign or print route-to-attendant console access.

| | | |
|---|---|---|
| REQ | CHG, PRT | Change or print |
| TYPE | RACG, RCPG | Route-to-attendant console access data block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| AGNO | 0–63 | Attendant console group number |

**LD10** – Add or change Multi-Tenant Service assignments on 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | (TENA) | Tenant service allowed |
| | TEND | Tenant service denied (station shares customer resources and is a non-tenant) |
| TEN | 1–511 | Tenant number (prompted if CLS=TENA) |
| ***Note:*** Tenant 0 is reserved for telephones with a TEND Class of Service | | |

**LD11** – Add or change Multi-Tenant Service assignments on SL-1 and digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CLS | (TENA) | Tenant service allowed |
| | TEND | Tenant service denied (station shares customer resources and is a non-tenant) |
| TEN | 1–511 | Tenant number<br>Prompted if CLS = TENA. |
| ***Note:*** Tenant 0 is reserved for telephones with a TEND Class of Service | | |

## Feature operation

Not applicable.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 19 |



# Multi-User Login

Meridian-1 Multi-User Login (MULTI_USER) (package 242) enables up to three users to log in, load, and execute overlays simultaneously. These three users are in addition to an attendant console or maintenance terminal. The Multi-User Login capability increases the efficiency of craftspersons by enabling them to perform tasks in parallel.

For a complete description of Multi-User Login, please refer to *X11 system management application* (553-3001-301).

Issued: 93 08 01
Status: Standard
X11 Release: All



# Music

The Music Package supports Music on Hold and Automatic Call Distribution (ACD) Music on Delay. One or more music sources can be connected to one or more music trunks on peripheral equipment. Each music trunk is assigned to a music route and to a conference loop. Incoming callers are bridged into a listen-only conference and provided with music when on hold or when waiting for an ACD call to be answered.

## Music on Hold

This feature allows incoming calls over a CO, FX, WATS, DID, or Tie trunk to receive music if placed on hold. Music is provided only if the trunk route is defined to receive music. The trunks selected to receive music are provided with a listen-only path to a music conference connection.

Music is provided by a dedicated music trunk by means of the conference circuit.

To minimize blocking of the music conference, at least two conference loops should be assigned in each network group requiring music. The loop with the higher number should not be assigned to music trunks.

### Operating parameters

Music is provided by a Recorded Announcement (RAN) or universal trunk circuit card.

Only trunks assigned to a route specified by service change receive Music on Hold.

When a call is held, the system looks for a network path to provide the music. If one is not found, no music is heard.

When a Universal trunk card is used, Music and RAN trunks can be assigned to the same card.

Connections blocked once are not automatically attempted again.

Simple source-only connections on the attendant console receive music; all others do not.

Main Release Link Trunks do not receive music.

Calls to special trunks (such as Paging or Dictation) do not receive music if placed on hold.

The music trunk Terminal Number (TN) must be within the same network group as the conference circuit to which it is assigned.

One music trunk per customer must be located in each network group requiring music.

Music is not supplied across groups (if group 4 does not have a music trunk and groups 0-3 have music trunks, then an incoming call to group 4 placed on hold will not receive music).

A single conference loop with one music trunk assigned can support up to 29 simultaneous listeners.

If more than one music trunk is assigned to one conference loop, they must use different routes. The total number of possible listeners is 30 minus the number of assigned trunks. Additional music trunks and conference loops can be configured if required.

The music source must be compatible with the music trunk circuit pack.

## Feature interactions

- Attendant Trunk Group Busy Indication
  A music route that appears on a Trunk Group Busy key on the attendant console cannot be controlled by activation of the Trunk Group Busy key. In addition, the associated lamp will not reflect the status of the music trunks.

- Conference
  With enhanced music on hold, when a call is placed on consultation hold while a conference is being established, music plays. Once the conference is established, music no longer plays. If the call returns to a two-party call, music plays whenever the call is held.

  With basic music on hold. when a call is placed on consultation hold while a conference is being established, music does not play.

- Call Park
  When a call is parked, music is not heard. When a trunk is parked, music plays if music is enabled for the route.

## Feature packaging

Music (MUS), package 44, requires:

- Recorded Announcement (RAN), package 7

# Music on Delay

Music on Delay presents a listen-only path to a music source for calls waiting in ACD queues. Music on Delay sources are identified separately for each Automatic Call Distribution Directory Number (ACD DN). Complete details are described in *Automatic Call Distribution advanced features description* (553-2671-101).

# Feature implementation

**LD17**—Add or change conference loops for Music on Hold.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration record |
| CEQU | Yes, (No) | Change to CE parameters |
| XCT | 0–158 | Loop number for NT8D17 Conference/TDS/MFS card. Enter an even network loop number for TDS/MFS functions. The conference function is automatically assigned the next higher (odd) loop number. |
| CONF | 0–158 | Loop number for conference card |

**LD16**—Add or change a music route.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route data block |
| CUST | 0–99 | Customer number |
| TKTP | MUS | Music route |
| ICOG | OGT | Outgoing route only |
| ACOD | xxxx | Trunk route access code |
| ***Note:*** All other prompts can be set to default values. | | |

**LD14**—Add or change a music trunk.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | MUS | Music trunk |
| TN | l s c u | Terminal number |
| CUST | 0–99 | Customer number |
| RTMB | xxx yyy | Route number and member number |
| CFLP | 0–158 | Conference loop assigned to music in LD17 |

**LD16** – Enable/disable Music on Hold for trunk routes.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route data block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| TKTP | COT, DID, FEX, TIE, WAT | Route type |
| MUS | Yes, (No) | Music on Hold is or is not to be provided for this trunk route |
| MRT | xxx | Music route number |

**LD23** – Enable/Disable Music for an Automatic Call Distribution Directory Number.

| | | |
|---|---|---|
| REQ | NEW, CHG | Add or change |
| TYPE | ACD | Update the ACD data block |
| CUST | 0–99 | Customer number |
| ACDN | xxx...x | ACD DN |
| MURT | X, 0–511 | Music route number<br>X = remove route |

## Feature operation

There is no specific procedure required to operate this feature.

Issued: 92 12 31
Status: Standard
X11 Release: 12



# Music, Enhanced

Enhanced Music (EMUS) provides music for internal and external calls. Music is provided when telephones are placed on Hold, Consultation Hold, and Camp-On and when calls at the attendant console are split using the "Exclude Source/Destination" keys.

Enhanced Music (EMUS) provides music in situations described in Table 122-1.

**Table 122-1**
**Features vs. No Music, Music, and Enhanced Music**

| | Without Music | | Music Only | | Enhanced Music | |
|---|---|---|---|---|---|---|
| | Sets | Trunks | Sets | Trunks | Sets | Trunks |
| ROA Waiting | No | No | Yes | Yes | Yes | Yes |
| Call Park | No | No | Yes | Yes | Yes | Yes |
| ACD Music | No | No | Yes | Yes | Yes | Yes |
| Hold Key | No | No | No | Yes | Yes | Yes |
| Permanent Hold | No | No | No | Yes | Yes | Yes |
| Consultation Hold | No | No | No | Yes | Yes | Yes |
| Splitting | No | No | No | Yes | Yes | Yes |
| Camp-On | No | No | N/A | Yes | N/A | Yes |

## Operating parameters

The requirements for Enhanced Music on Hold are the same as for Music on Hold. See "Music" on page 121-1.

Trunks receive music on a route basis. Telephones receive music on a customer basis.

## Feature interactions

Enhanced Music on Hold has the same feature interactions as Music on Hold. In addition, it has interactions with the following features:

- Busy Verify
  When the attendant attempts to Busy Verify a telephone receiving music, the music is removed. When the attendant releases, music is returned.
- Call Transfer
  The held party receives music when the other party presses the Call Transfer key. The music connection remains until the Call Transfer key or the DN key is pressed, ending the Consultation Hold state.
- Charge Account and Calling Party
  The Charge Account (CHG) and Calling Party (CPN) keys place the far end party on Hold while a charge number is entered. The held party receives music during this period.
- Conference
  The held party receives music when the conference key is pressed, while the conference is being established, and whenever the conference is reduced to two parties with one party on hold. Once the conference is established, music is no longer provided.

A Six-Party Conference operates the same as a Three-Party Conference.

- Deluxe Hold
  A caller placed on Hold by a member of a multiple appearance group receives music regardless of whether the call is on Hold or Exclusive Hold.
- Privacy Release
  When using Privacy Release to add one or more members to a call already receiving music, the music is removed.
- M3000 telephones
  The Switch Parties key allows music to the party on hold and ends music to the other party each time it is pressed.

## Feature packaging

Enhanced Music (EMUS), package 119, requires:

- Music (MUS), package 44
- Recorded Announcement (RAN), package 7

# Feature implementation

**LD17** – Add or change conference loops for Music on Hold.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration record |
| CEQU | Yes, (No) | Change to CE parameters |
| XCT | 0–158 | Loop number for NT8D17 Conference/TDS/MFS card. Enter an even network loop number for TDS/MFS functions. The conference function is automatically assigned the next higher (odd) loop number. |
| CONF | 0–158 | Loop number for conference card (must be an even numbered loop) |

**LD15** – Enable/disable Music for a customer.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer data block |
| CUST | 0–99 | Customer number |
| MUS | Yes, (No) | Enhanced music for telephones |
| MUSR | 0–511 | Music route for telephones |

**LD16** – Add or change a music route.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | RDB | Rout data block |
| CUST | 0–99 | Customer number |
| TKTP | MUS | Music route |
| ICOG | OGT | Outgoing route only |
| ACOD | xxxx | Trunk route access code |
| ***Note:*** All other prompts can be set to default values. | | |

**LD14** – Add or change a music trunk.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | MUS | Music trunk |
| TN | l s c u | Terminal Number |
| RTMB | xxx yyy | Route and member number |
| CFLP | 0–158 | Conference loop assigned to music in LD17 |
| ***Note:*** At least one music trunk per network group is required for each customer requiring music. | | |

**LD16** – Enable/disable Music on Hold for trunk routes.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | RDB | Rout data block |
| CUST | 0–99 | Customer number |
| TKTP | COT, DID, FEX, TIE, WAT | Trunk type |
| MUS | Yes, (No) | Music on Hold is/is not to be provided for this trunk route |
| MRT | 0–511 | Music route number |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Network Message Services

The Network Message Services (NMS) uses signaling capabilities from the Integrated Services Digital Network (ISDN) to provide messaging services over a network link. Networks with Primary Rate Interfaces (PRI) or Integrated Services Links (ISL) can extend existing message services to users supported by that network, on a customer basis. Access to the Network Message Services (NMS), and feature activation from the messaging system, is transparent to the end user.

Network Message Services (NMS) is composed of two distinct applications: NMS-Message Center (NMS-MC) and NMS-Meridian Mail (NMS-MM).

### Network Message Services-Message Center (NMS-MC)

With X11 release 15 and later, NMS-MC provides centralized Message Centers for switches on ISDN Primary Rate Interface (PRI) and Integrated Services Link (ISL) networks. This feature carries the networking capabilities for a caller to access the Message Center attendant or Automatic Call Distribution (ACD) agent. The NMS-MC provides two types of functions over the ISDN PRI/ISL network:

— Message Center Access

— message waiting indication

Three types of Message Centers are supported:

— Automatic Call Distribution (ACD) Message Centers

— DN-type Message Centers

— Attendant Message Centers

### Network Message Services-Meridian Mail (NMS-MM)

With X11 release 16 and later, NMS-MM enhances Meridian Mail by providing transparent access to Meridian Mail across the network. Two types of functions are provided over the ISDN PRI/ISL network:

- Message Center access
- message waiting indication and cancellation

For further information refer to the following modules in this document:

- Integrated Services Digital Network (ISDN)
- Meridian Mail applications
- Message Center

## Operating parameters

Refer to the X11 features and services modules listed previously.

## Feature interactions

Refer to the X11 features and services modules listed previously.

## Feature packaging

Network Message Services (NMS), package 175, requires:

- Message Center (MWC), package 46

For Network Message Services-Meridian Mail (NMS-MM), the following software is required:

- X11 release 16 software
- Meridian Mail version SP7

The NMS feature requires ISDN to operate, with all the packages necessary to support ISDN. The minimum requirement is:

- Advanced Network Services (NTWK), package 148

Message Services in the Automatic Call Distribution (ACD) environment require the following ACD packages:

- Basic Automatic Call Distribution (BACD), package 40
- ACD Package A (ACDA), package 45
- ACD Package B (ACDB), package 41
- ACD Package C1 (ACDC), package 42

NMS in X11 release 15 does not support the following packages:

- Integrated Voice Messaging (IVMS)
- Multiple Message Center interworking

The user network must be equipped with either a universal dialing plan or the Coordinated Dialing Plan throughout, but not a mixture of both, as an ISDN requirement.

## Feature implementation

Refer to the X11 features and services modules listed previously. For a complete description of the prompts and responses required, see the *X11 input/output guide* (553-3001-400).

## Feature operation

There is no specific procedure required to operate this procedure.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 2 |



# New Flexible Code Restriction

New Flexible Code Restriction (NFCR) controls the access of toll denied telephones to outgoing trunk routes. Calls are allowed or denied based on the specific digit sequence dialed.

Toll denied (TLD) telephones and trunks that have been assigned a Network Class of Service (NCOS) are allowed or denied calling privileges according to the Facility Restriction Level (FRL) assigned to the NCOS. Up to eight FRL codes are allowed per trunk route.

When accessing an outgoing route, the assigned Facility Restriction Level (FRL) of the user determines which digits are allowed or denied on that route. When the user dials a digit that is denied, intercept treatment is invoked.

This feature also applies to telephones with a Conditionally Toll Denied (CTD) or Conditionally Unrestricted (CUN) Class of Service unless Basic Alternate Route Selection/Network Alternate Route Selection (BARS/NARS), Coordinated Dialing Plan (CDP), or Automatic Number Identification (ANI) is activated for the call.

New Flexible Code Restriction (NFCR) can be programmed to analyze each digit individually and allow or deny a call on the basis of any digit or digit sequence dialed. Code restriction trees are used to analyze the digits dialed. The construction and maintenance of up to 255 code restriction trees is provided in service change. When entered in the bypass field, specified numbers are allowed to process without restriction. Each trunk route can access up to eight code restriction trees and each code restriction tree can be used by more than one trunk route. The code restriction tree corresponding to the station user's Facility Restriction Level (FRL) is defined by the trunk route.

## Operating parameters

New Flexible Code Restriction (NFCR) can be programmed to count the number of digits dialed and deny any call exceeding the specified number of digits.

Only the digits zero through nine are considered. If a user dials an asterisk (*), it is not counted as a dialed digit. If the user dials an octothorpe (#) before NFCR has finished digit counting, the call is disallowed and the appropriate intercept treatment is provided. This prevents digits from 2500-type telephones or dual tone multifrequency (DTMF) trunks from being outpulsed before being counted or analyzed by code restriction.

As many as 255 code restriction trees are available per customer. Eight code restriction trees can be referenced by each trunk route.

Up to 50 digits can be analyzed by NFCR.

When Code Restriction (LD19) and NFCR (LD49) are both enabled for the same customer, NFCR takes precedence. Any parameters required for Code Restriction are ignored.

## Feature interactions

- Authorization Code
  If the class of service of the authorization code is Toll Denied (TLD), NFCR is applied. If the class of service is Conditionally Unrestricted class of service (CUN) or Conditionally Toll Denied (CTD) and the call is not routed through BARS/NARS, CDP or ANI, NFCR is applied.
- Automatic Number Identification (ANI)
  Calls from Toll Denied (TLD) stations routed by ANI are subject to NFCR. Calls placed by Conditionally Toll Denied (CTD) and Conditionally Unrestricted class of service (CUN) stations subject to ANI are treated as unrestricted calls.
- BARS/NARS/CDP
  Only TLD telephones are subject to NFCR when calls are routed by BARS/NARS/CDP. CTD and CUN calls routed by BARS/NARS/CDP are not subject to NFCR treatment.

- Direct Inward System Access (DISA)
  If the DISA DN has a TLD, CUN or CTD class of service, calls made through DISA are eligible for NFCR treatment.
- Forced Charge Account
  Calls placed through the Forced Charge Account feature are not eligible for NFCR treatment.
- Network Class of Service (NCOS)
  Toll Denied stations and trunks must have an NCOS assigned to be allowed or denied calling privileges by NFCR. This is because the FRL associated with the NCOS of the user determines which codes are allowed or denied on an outgoing trunk call. The range of NCOS groups varies as follows:

  (0)–3 for standalone CDP
  (0)–7 for BARS/CDP and NFCR
  (0)–15 for NARS and NFCR
  (0)–99 for BARS/NARS/CDP/NFCR in X11 release 13 and later software

## Feature packaging

NFCR, package 49, requires:

- Network Class of Service (NCOS), package 32

# Feature implementation

**LD15** – Enable NFCR for a customer.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer Data Block |
| CUST | 0-99 | Customer number |
| NFCR | Yes, (No) | Enable (disable) NFCR |
| MAXT | 1–255 | Maximum number of code restriction trees |

**LD87** – Define NCOS groups and associated FRL.

| | | |
|---|---|---|
| REQ | NEW, CHG | Create new or change |
| CUST | 0-99 | Customer number |
| FEAT | NCTL | Network Control |
| NCOS | (0)–99 | NCOS group |
| FRL | 0–7 | FRL is assigned to each NCOS. It determines the entries in an route list (RLI) to which it has access. 0 is the most restrictive, 7 is the least restrictive and can access more entries. |

**LD49** – Add, change, or print code restriction trees.

| | | |
|---|---|---|
| REQ | NEW, CHG, PRT | Create new, change or print data |
| TYPE | FCR | NFCR data block |
| CUST | 0-99 | Customer number |
| CRNO | (0)–254 | Code restriction tree number (0–254) |
| INIT | ALOW, DENY | Allow or deny all codes |
| If INIT = ALOW the following prompts appear: | | |
| DENY | xx...xx | Digit sequence to be denied |
| ALOW | xx...xx | Digit sequence to be allowed |
| BYPS | xx...xx | Digit sequence to be bypassed |
| If INIT = DENY the following prompts appear: | | |
| ALOW | xx...xx | Digit sequence to be allowed |
| DENY | xx...xx | Digit sequence to be denied |
| BYPS | xx...xx | Digit sequence to be bypassed |

**LD16** – Associate a FRL with a code restriction tree.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| FRL | x yyy | x = FRL number (0–7)<br>yyy = code restriction tree number (1–255)<br>FRL is reprompted to allow input of eight FRLs. A carriage return causes the next prompt to appear. |

**LD10** – Assign a 500/2500 telephone a Toll Denied and Network Class of Service.

| REQ | CHG | Change |
|---|---|---|
| TYPE | 500 | Telephone type<br>a |
| TN | l s c u | Terminal Number |
| NCOS | (0)–99 | NCOS |
| CLS | TLD | Toll Denied class of service |

**LD11** – Assign SL-1 and digital telephones a Toll Denied and Network Class of Service.

| REQ | CHG | Change |
|---|---|---|
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| NCOS | (0)–99 | NCOS |
| CLS | TLD | Toll Denied class of service |

**LD1** – Assign a trunk a Toll Denied and Network Class of Service.

| REQ | CHG | Change |
|---|---|---|
| TYPE | aaa | Trunk type<br>aaa = CSA, TIE, WAT |
| TN | l s c u | Terminal Number |
| NCOS | (0)–99 | NCOS |
| CLS | TLD | Toll Denied class of service |

**LD24** – Assign a DISA data block a Toll Denied and NCOS.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | DIS | DISA data block |
| CUST | 0–99 | Customer number |
| SPWD | xxxx | Security password |
| DN | xxx....x | DISA Directory number |
| NCOS | (0)–99 | NCOS |
| COS | TLD | Toll Denied class of service |

**LD88** – Assign an Authorization code a Toll Denied and NCOS.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | AUB | Authorization code data block |
| CUST | 0–99 | Customer number |
| SPWD | xxxx | Security password |
| CLAS | (0)–115 | Classcode to be assigned |
| NCOS | (0)–99 | NCOS |
| COS | TLD | Toll Denied class of service |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Night Key for DID Digit Manipulation

The Night Key for DID Digit Manipulation (NKDM) uses DID Incoming Digit Conversion (IDC) to convert received DID digits into Night Service Directory Number (DN). NKDM is used to switch between a Night and Day modes.

The Day/Night mode is controlled by a DID Route Control (DRC) key on an attendant console, SL-1 telephone, or digital telephone. There can only be one DRC key for each DID route.

The Night tree table is invoked in any of the following ways:

— when the attendant goes into Night Service, or the last attendant activates the POS BUSY key (provided that Attendant Overflow Position (AOP) is not equipped)

— when an attendant activates the DID Route Control (DRC) key

— when a Console Presentation Group (CPD) attendant goes into Night Service

— when an SL-1 or digital telephone activates the DRC key

In each case, only the DID routes controlled by the initiating source (console or telephone) are affected.

## Operating parameters

The maximum number of conversion tables per customer is 255. These tables are shared between the Incoming Digit Conversion (IDC) and the New Flexible Code Restriction (NFCR) trees.

The DID Route Control (DRC) key can only be configured on keys with lamp indicators.

When using the Night tree table, the same assumptions that apply to Incoming Digit Conversion (IDC) apply to this feature.

The Night tree table for DID Digit Manipulation (NKDM) applies only to DID routes.

For each DID route, there is only one configured DRC key per telephone.

For a Dialed Number Identification Service (DNIS) route, make sure that the correct table is selected for the conversion of incoming digits.

## Feature interactions

- Attendant Administration
  The DID Route Control (DRC) key is not supported by Attendant Administration.
- Attendant Overflow Position (AOP)
  When the last attendant activates the POS BUSY key, the system does not go into Night Service if an AOP Directory Number (DN) is available.
- Automatic Set Relocation
  Delete the DRC key from a telephone before performing Automatic Set Relocation. If this is not done, the DRC lamp is activated on the wrong telephone.
- Console Presentation Group (CPG)
  The Day/Night table can be activated with the DRC key by any attendant in the CPG group.
- Pretranslation
  The Trunk Access Code (from the attendant console)

# Feature packaging

The night Key for DID Digit Manipulation (NKDM) is not a packaged feature; however, the following packages are required:

- Network Class of Service (NCOS), package 32
- New Flexible Code Restriction (NFCR), package 49
- Incoming Digit Conversion (IDC), package 113

# Feature implementation

**LD15** – Enable Incoming Digit Conversion for Night mode.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer Data Block |
| CUST | 0-99 | Customer number |
| NFCR | Yes, (No) | Enable New Flexible Code Restriction (NFCR) |
| MAXT | 1–255 | Maximum number of NFCR trees |
| IDCA | Yes, (No) | Enable IDC |
| DCMX | 1–255 | Maximum number of IDC conversion tables. The sum of the values of MAXT and DCMX cannot exceed 255 per customer. |
| ***Note:*** IDC cannot be disabled if any telephone has a DCR key. | | |

**LD49** – Add, change, or print code restriction trees.

| | | |
|---|---|---|
| REQ | NEW, CHG, PRT | Create new, change, or print data |
| TYPE | IDC | NFCR data block |
| CUST | 0–99 | Customer number |
| DCNO | 0–254 | IDC tree number |
| IDGT | 0–9999 0–9999 | Directory Number (DN) or range of DNs to be converted. The external DNs to be converted is output and the user enters the internal DN. For example, to convert the external DN 3440 to 510, enter: 3440. The system prompts: 3440 and you enter 510. |

**LD16** – Set IDC tree for Night mode. Note that a DID route cannot be removed if it is controlled by a DCR key.

| REQ | CHG | Change |
|---|---|---|
| TYPE | RDB | Route Data Block |
| TKTP | DID | DID route |
| IDC | Yes, (No) | Enable IDC |
| DCNO | 0–254 | IDC tree for Day mode |
| NDNO | 0–254 | IDC tree for Night mode |
| | <CR> | Set tree to the same number as Day mode (default) |

**LD12** – Define a DID Route Control key (DRC) on an attendant console.

| REQ | CHG | Change |
|---|---|---|
| TYPE | ATT, 1250, 2250 | Console type |
| TN | l s c u | Terminal Number |
| KEY | xx DRC yyy | DRC<br>xx = key number 0–9 (0–19 on M2250)<br>yyy = route number (0–511) |

**LD11** – Define a DRC key on an SL-1 or Meridian digital telephone.

| REQ | CHG | Change |
|---|---|---|
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx DRC yyy | DRC<br>xx = key number<br>yyy = route number (0–511) |

## Feature operation

Follow these steps to change one DID route to Day/Night mode from the attendant console:

1 Select an idle loop key.

2 Press **DRC** and dial the access code of the DID route (ACOD).

If the DRC indicator is on steadily, the route is in Day mode.

If the DRC indicator is flashing, the route is in Night mode.

3 Press **DRC** again.

If the DRC indicator was on steadily, the route is put into Night mode

If the DRC indicator was flashing, the route is put into Day mode.

Follow these steps to change all DID routes to Day/Night mode from the attendant console:

1 Select an idle loop key.

2 Press **DRC** and dial the octothorpe (#).

If the DRC indicator is on steadily, all routes are in Day mode.

If the DRC indicator is flashing, one or more routes are in Night mode.

3 Press **DRC** again.

If the DRC indicator was on steadily, all routes are put into Night mode.

If the DRC indicator was flashing, all routes are into Day mode.

*Note:* To change from "some routes in Night mode" to "all routes in Night mode", you must first put all routes into Day mode.

Follow these steps to change one DID route to Day/Night mode from a telephone:

1 Check the **DRC** indicator.

If the DRC indicator is on steadily, the route is in Day mode.

If the DRC indicator is flashing, the route is in Night mode.

2 Press **DRC**.

The route toggles between Night and Day mode.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Night Service

Night Service permits incoming calls normally directed to the attendant to be routed to a defined destination. A separate Night key/lamp pair allows the attendant to put the system into Night Service.

Three types of Night Service are provided the customer can specify separately or in any combination:

— Selected Trunks to Selected Directory Number (DNs): Some or all of the trunks can be assigned to ring selected DNs when the system is in Night Service. The assignment of trunks to stations can be modified by the attendant or by a service change.

— Night Answer Telephone: All calls normally routed to the attendant console can be routed to one particular DN that is designated as the night answer destination for the customer. Trunk Answer From Any Station (TAFAS) can be used to pick up calls routed to this number.

— TAFAS: Incoming calls activate a common alerting device, such as a bell, when the system is in Night Service. Any user can answer the call by dialing the Special Prefix (SPRE) code and then pressing 4.

— Night Service by Time of Day (NSTD): Available in X11 release 12 and later, NSTD allows one of a group of Directory Numbers (DNs) to be selected for call routing based on the time of day instead of all calls being routed to a fixed Night Service DN. NSTD allows the definition of up to four Night DNs with a time associated with each. Calls are forwarded to the appropriate DN by the associated time.

# Operating parameters

Night Service can only be activated from the attendant console.

Any restrictions or features assigned to the night answering station apply. Therefore, a fully restricted (FRE) class of service should not be used for Night Service Directory Numbers (DNs), unless the FRPT prompt in LD17 is OLFR (allow FRE telephones to serve as a Night DN).

A bell circuit or alerting device must be provided by the customer for TAFAS. This device must be compatible with the 20 Hz ringing signal (2 sec. on, 4 sec. off).

If a trunk is assigned a Night DN other than the Night Answer Number defined in the Customer Data Block, incoming calls to that trunk cannot be picked up with the TAFAS feature. Assignment in LD14 on page 123-4 takes precedence over the Customer Data Block.

If an attendant is not assigned to a customer, the customer is automatically in Night Service upon system start-up.

The following tables show how calls are directed during Night Service, depending on the time of day:

| Call is directed to Night DN | Between times: |
|---|---|
| NIT1 DN | TIM1 and TIM2 |
| NIT2 DN | TIM2 and TIM3 |
| NIT3 DN | TIM3 and TIM4 |
| NIT4 DN | TIM4 and TIM1 |

It is possible to remove a defined night DN without modifying the other DNs. For example, if NIT3 is removed, calls are directed as follows:

| Call is directed to Night DN | Between times: |
|---|---|
| NIT1 DN | TIM1 and TIM2 |
| NIT2 DN | TIM2 and TIM4 |
| NIT4 DN | TIM4 and TIM1 |

## Feature interactions

– Position Busy
When all attendants activate the Position Busy key, Night Service is in effect unless the Attendant Overflow Position (AOP) feature is equipped. If AOP is equipped, the Night key must be pressed to invoke Night Service. A call that is rerouted due to AOP is not redirected to the Night DN if the system is subsequently put into Night Service.

– Directory Number Expansion (DNXP)
If the DNXP package is equipped, the Night DNs can be up to 7 digits; otherwise, the DN can be a maximum of 4 digits.

The following interactions apply to Night Service by Time of Day (NSTD):

– Call Park Recall
Calls parked by the attendant recall on the Night Service DN that is current at the time of recall.

– Calls Waiting in Attendant Queue
Incoming calls ringing at the attendant console at the instant of time changeover and routed to the Night DN that just expired. New calls are routed to the new Night DN. If the attendant cancels Night Service, new calls are presented to the attendant console.

Once a call begins ringing at a Night DN, it stays there even if Night Service is cancelled or the timer expires.

– Multi-Tenant Night Service
The same conditions that apply to the customer night number also apply to the Multi-Tenant Night Service. In X11 release 15 and later software, Console Presentation Group (CPG) allows separate night treatment for each tenant.

– Trunk Answer from Any Station (TAFAS)
When a DN changeover occurs while an incoming call is ringing the current Night DN and a new incoming call is ringing the new Night DN, a user activating TAFAS picks up the call from the Night DN that just expired. However, if the ringing call is not picked up within one minute after the Night DN time changeover, then the user can no longer pick up the call using TAFAS.

## Feature packaging

Night Service is included in basic X11 system software.

## Feature implementation

**LD15** – Add or change Night Service for a customer.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer Data Block |
| CUST | 0–99 | Customer number |
| NITE | xxx...x, X | Night Service DN (prior to X11 release 12 only) |
| NIT1 | xxx...x, X | Night Service DN 1 (enter X to remove) |
| TIM1 | 0–23 0–59 | DN 1 time (hour and minute) |
| NIT2 | xxx...x, X | Night Service DN 2 (enter X to remove) |
| TIM2 | 0–23 0–59 | DN 2 time (hour and minute) |
| NIT3 | xxx...x, X | Night Service DN 3 (enter X to remove) |
| TIM3 | 0–23 0–59 | DN 3 time (hour and minute) |
| NIT4 | xxx...x, X | Night Service DN 4 (enter X to remove) |
| TIM4 | 0–23 0–59 | DN 4 time (hour and minute) |
| ***Note:*** Night Service DN times must be defined in ascending order. | | |

**LD14**—Add or change Night Service DN for trunks.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | COT | Trunk type |
| TN | l s c u | Terminal Number |
| NITE | xxx...x, X | Night Service DN for this trunk (enter X to remove) |

## Feature operation

To place a customer into Night Service:

1 Press **Shift** plus  at any console, or unplug all handsets and headsets.

To cancel Night Service when all handsets and headsets are unplugged:

1 Plug in at least one handset or headset.

To cancel Night Service at a console when a handset or headset is plugged in:

1 Press **Shift** plus 

*Note:* If all attendant consoles are put in Position Busy, the system automatically goes into Night Service.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# No Hold Conference

Combined with Conference, Speed Call, System Speed Call, Autodial, and Hotline, No Hold Conference (NHC) allows you to establish a Conference call without placing the current caller on hold.

This feature is available in four forms, merging No Hold Conference (NHC) with Autodial, Speed Call, and Hotline into single key. The new combined keys are the Conference-Autodial (CA), Conference-Speed Call (CS), and Conference-Hotline (CH) feature keys. A No Hold Conference (NHC) key can also be configured, acting as a simple conference key.

Conference-Hotline can be used in the following two ways:

— The Direct CH option has the number stored with the key.

— The List CH option has a pointer that selects an entry from a Hotline list.

When a telephone is connected to another party, you can originate a Conference-Autodial (CA), Conference-Speed Call (CS), or Conference-Hotline (CH) call by pressing the CA, CS, CH, or NHC key. The system determines the destination as if it were a regular Autodial, Speed Call, or Hotline call. The parties are conferenced in without holding.

For example, a call comes in to the customer notifying the customer of a fire. The user wishes to notify the fire department of the emergency without placing the original caller on hold, and the number is stored on the Conference-Autodial key. By pressing the CA key, the customer establishes a conference call. The fire department is notified and the original connection is maintained.

When you press the feature key, one of the following occurs:

- If the destination is an idle internal Directory Number (DN), that DN rings and the CA, CS, CH, or NHC lamp flashes (60 ipm). You hear no ringback tone.
- If the destination is a trunk with answer supervision, the trunk is seized and the key lamp flashes. The voice path is not established until an answer signal is received.
- When the destination is a trunk without answer supervision, the trunk is seized, the voice path established, and the key lamp flashes. All tone signals provided by the far end (ringback, for example) are heard by all parties involved in the conference call.

  *Note:* Calls on trunks without answer supervision are treated as answered after digit outpulsing is completed.

- When the intended destination is a busy internal DN, trunk, or route, the key lamp fast flashes (120 ipm). Press the active call key to cancel the attempt.

  *Note:* The active call key is the key on which the call is established. It can be any key on which a regular conference call can be made, including the DN key, Call Waiting, and Automatic Call Distribution (ACD) Incalls keys.

- In the case of network blocking, or if a conference port is unavailable, the key lamp fast flashes. Press the active call key to cancel the attempt.
- When the destination is an invalid entry (a vacant number, or an illegal list entry, for example) the key lamp fast flashes. Press the active call key to cancel the attempt.

Pressing the active call key at any time before the called party responds cancels the attempt, returning the telephone to the state prior to pressing the CA, CS, CH, or NHC key.

If the call is answered, the key lamp goes off, and the called party is added to the existing conversation. By pressing the active call key, the last added party is released. These operations can be repeated as often as necessary, according to your network configuration, to add new parties to an existing conversation.

If the CA, CS, or CH keys are pressed at any time other than during a conference call, they operate as a regular Autodial, Speed Call, or Hotline key.

Pressing the NHC key allows the user to dial the number desired for the conference call.

## Operating parameters

Assignable keys are limited to the number of keys available on your telephone.

NHC is available on SL-1 and Meridian digital telephones with the CA, CS, CH, and NHC keys. It is not available on the M3000, 500/2500 telephones, or attendant consoles.

The Release (RLS) key has no effect while the key lamps are flashing or fast flashing. Other than during these stages, it can be used to abort the conference call.

The CA key, like the regular Autodial key, is programmable from the telephone.

The CS and CH keys must have the Speed Call and Hotline numbers assigned in LD18 on page 124-5.

Data calls are not supported.

## Feature interactions

All four keys can coexist with each other as well as with other Conference, Autodial, Speed Call, and Hotline features.

This feature can be enabled at any time that a regular Conference-6 feature can be activated.

Whenever the CS key is programmed for a System Speed Call list, all calls made with that key are System Speed Calls.

The CH key supports only one-way Hot Line calls.

Centralized Attendant Service (CAS) attendants are not supported.

## Feature packaging

No Hold Conference capability is available when the following features are equipped:

- Autodial (ADL) for CA key configuration
- Speed Call User (SCU) if the CS key is configured
- Enhanced Hotline (EHOT) for the CH key (package 70)
- System Speed Call to configure CS or CH keys (package 34)

# Feature implementation

**LD18** – Provision Speed Call or Hot Line numbers for CS and CH keys.

| | | |
|---|---|---|
| REQ | NEW, CHG | Add, change, or remove a Speed Call list |
| TYPE | SCL, SSC, HTL | Speed Call, System Speed Call, Hotline |
| CUST | 0–99 | Customer number (when TYPE = HTL) |
| LNSO | 0–8190 | Speed Call list number |
| NCOS | (0)–99 | NCOS (when TYPE = SSC or HTL) |
| DNSZ | xx | Maximum number of digits in a list entry<br>xx = 4, 8, 12, (16), 20, 24, 28, or 31 |
| SIZE | 1–1000 | Maximum number of entries in the Speed Call list |
| WRT | No, (Yes) | Data is correct and list can be updated |
| STOR | xxx<br>yy...yy | xxx = list entry number (0–9, 00–99, or 000–999)<br>yy = digits to be stored against the entry (must be equal to or less than DNSZ) |
| WRT | No, (Yes) | Data is correct and list can be updated |

***Note:*** The WRT prompt follows the SIZE and STOR prompts asking you to confirm the correctness of the data just entered. If data is correct, enter Yes or <CR>. A response of No after the SIZE prompt causes all data entered to be ignored. A response of No after the STOR prompt generates a warning message (SCH3213) indicating that the data was not stored and must be reentered.

A response of **** aborts the program. Only the last STOR value is lost. All previous values to which WRT was Yes are saved.

In X11 release 17 and later, the following information is displayed with the WRT prompt, following SIZE:
ADDS: MEM: xxxxx DISK: yy.y

Where xxxxx is the amount of protected memory and yy.y is the number of disk records required for the new speed call list. Check the MEM AVAIL and DISK REC AVAIL values displayed before the REQ prompt.

**LD11** – Add or change No Hold Conference for SL-1 and Meridian digital telephones.

| REQ | CHG | Change |
|---|---|---|
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx CA 4–(16)–23 y...y | Combined NHC and Autodial key<br>xx = key number<br>y...y = target number stored in the key (maximum 23 digits) |
| | xx CH D yy z...z | Combined NHC and Direct Hotline key<br>xx = key number<br>yy = number of digits in the target number<br>z...z = target number stored within the key |
| | xx CH L 0–999 | Combined NHC and Hotline key<br>xx = key number<br>0–999 = Hot Line list entry |
| | xx CS yyy | Combined NHC and Speed Call key<br>xx = key number<br>yyy = Speed Call list number |
| | xx NHC | NHC key<br>xx = key number |

# Feature operation

## No Hold Conference (NHC)

To establish a NHC call using the NHC key:

1 Establish a call.

2 Press **NHC**. The indicator goes on steadily.

3 Dial the number for conference. The indicator flashes until the call is answered.

4 The conference is complete.

## Conference-Autodial (CA)

To store an Auto dial number:

1 Press **CA** (Conference-Autodial). The CA indicator flashes.

2 Enter the number.

3 Press **CA**. The indicator goes off.

To use Conference-Autodial:

1 Establish a call.

2 Press **CA**. The indicator flashes until the call is answered.

3 The conference is complete.

## Conference-Hot Line (CH)

To establish a NHC call using the CH key:

1 Establish a call.

2 Press **CH** (Conference-Hotline). The indicator flashes until the call is answered.

3 The conference is complete.

## Conference-Speed Call (CS)

To establish a NHC call using the CS key:

1 Establish a call.

2 Press CS (Conference-Speed Call). The indicator goes on steadily.

3 Enter the Speed Call list entry number for the conference number. The indicator flashes until the call is answered.

4 The conference is complete.

*Note:* To disconnect the last NHC conference caller in any of the above procedures, press the DN key once.

| | |
|---|---|
| Issued: | 93 10 31 |
| Status: | Standard |
| X11 Release: | 19 |



# North American Numbering Plan

The North American Numbering Plan (NANP), established in 1947 and currently administered by Bellcore, governs the telephone numbering system throughout the United States, Canada, Bermuda, and the Caribbean.

Two components of the NANP are Interchangeable Numbering Plan Areas (INPAs), and Carrier Access Codes (CACs). NPAs are the three-digit prefixes commonly known as area codes. CACs permit telephone users to access any interexchange carrier or operator service provider. CACs must be supported by any entity, such as a hotel, motel, hospital, university, airport, gas station, or pay telephone owner, that makes telephone services available to the public.

## Interchangeable Numbering Plan Area

The Interchangeable NPA Codes plan was developed in the 1960s to manage the inevitable depletion of available codes. Prior to 1995, all area codes had an N(0/1)X format, where N was any digit from 2 to 9 inclusive and X was any digit, 0 to 9. As of January 1995, area codes have an NXX format, increasing the available codes to 640.

Modifications to X11 software, including changes to LDs that accept NPA or Home NPA codes, have eliminated dependencies and limitations associated with the old NPA code format.

The introduction of Interchangeable NPAs means that an area code (NPA) can appear identical to a Central Office prefix or a private network Location Code (LOC).

It is important to avoid conflicts among NPAs, Central Office prefixes, and LOCs. It is recommended that customers implement 1+ dialing to eliminate ambiguity.

Customers who use the Autodial feature, Speed Call, or the HOT Line feature may need to modify the lists and tables associated with these features to accommodate the new prefixes or to reflect changes to numbers resulting from implementation of 1+ dialing.

The remainder of this section discusses the procedure that Basic Alternate Route Selection (BARS)/Network Alternate Route Selection (NARS) customers need to follow to handle the NPA changes. Although Alternate Route Selection (ARS) and Direct Trunk Access customers need not modify their databases, those who use Call Detail Recording and/or Toll Denied Class of Service should consider the effect of NPA changes on their operations.

## BARS/NARS

BARS/NARS prohibits the entry of identical NPAs, Central Office prefixes, or LOCs. Typically, customers construct translation tables with NPA and LOC codes associated with one Access Code and Central Office codes associated with a second Access Code. Now that LOC and NPA codes may be identical, this option no longer guarantees that codes will not conflict.

Table 128-1 summarizes the options.

**Table 128-1**
**Access Codes and 1+ dialing**

| # of Access Codes | Need LOC? | Use 1+? | Results |
|---|---|---|---|
| 2 | yes | yes | no conflicts |
| 2 | yes | no | may need to check that no LOC is identical to any NPA (depends on access code arrangement) |
| 2 | no | yes | no conflict |
| 1 | no | yes | no conflict |
| 1 | no | no | not recommended |
| 1 | yes | yes | not recommended |

The ideal dialing plan continues to use two Access Codes, with 1+ dialing for NPA calls. (Digit Manipulation can remove the "1" for customers whose Central Office does not support 1+ dialing.)

Customers with two Access Codes that do not want to use 1+ dialing must ensure that no LOCS in the database are identical to existing NPAs. (The database needs to be checked whenever a new NPA is introduced.)

Customers who do not need LOCs can use a single Access Code and 1+ dialing or two Access Codes, one for NPA and one for the Central Office code.

Software modifications enable users to enter the new interchangeable NPAs in the following tables:

- Customer Data Block, LD15. Changed to allow interchangeable NPA entry.
- Electronic Switched Networking (ESN) Translation tables, LD90. Changed to allow interchangeable NPA format to be entered in response to NPA and HNPA prompts. Responses are compared to NARS/BARS call digits to determine call routing.
- Free Calling Area Screening (FCAS) tables, LD87. Changes allow users to enter the interchangeable NPA format in response to the NPA prompt. Prompt values are compared to dial digits to determine if FCAS should screen call.
- Feature Group D (FGD) Code Restriction tables, LD19. Changes allow entry of interchangeable NPA format in response to the NPA prompt. Feature Group D uses the response to restrict certain calls that terminate at, or tandem through, a given node.
- M911Numbering Plan Digit/Information Digit (NPID) tables, LD16. Change allows entry of interchangeable NPA format.

This software is available beginning with X11 release 19. Upgrades may also require hardware modification depending on route selection capabilities, system type, and software release.

## Direct Trunk Access and Alternate Route Selection

Direct Trunk Access and Alternate Route Selection customers need not update software to support interchangeable NPAs. Customers using Direct Trunk Access should continue to monitor local dialing procedures to ensure correct toll call recognition.

## System Upgrades

Upgrade requirements can include hardware and software. For specific information, consult *Upgrade system installation* (553-3001-250).

## Feature implementation

The following prompts have been modified to accept NPA input in the new interchangeable format:

**LD15** – Home Numbering Plan Area modification

| Prompt | Response | Description |
|---|---|---|
| ISDN | YES | Change ISDN options |
| _HNPA | 200-999<br>1200-1999 | Home Numbering Plan Area code |

**LD16** – NPA code definition for the M911 feature

| Prompt | Response | Description |
|---|---|---|
| TYPE | NPID | Numbering Plan Digit/Information Digit table |
| IDTB | 0-7 | NPID table number |
| NPID | 0-9 | NPID to be translated |
| TRMT | NPA | NPID treatment |
| NPA | 200-999 | Numbering Plan Area code |

**LD19** – NPA input for incoming Feature Group D ANI screening

| Prompt | Response | Description |
|---|---|---|
| TYPE | ANI | Feature Group D data block |
| ANIT | (OVF), RAN xxx, DN xxx, NCOS xxx | Invalid ANI treatment |
| NPA | 200-999 | Three ANI digits in NPA format (prompt accepts only three digits even if 1+ dialing is in effect) |

**LD87**—Free Call Area Screening definition

| Prompt | Response | Description |
|---|---|---|
| FCI | xxx | Free Call Area Screening table index number |
| NPA | 200-999<br>200-999 200-999 | Area code or extended NPA code translation (only three digits accepted even if 1+ dialing is in effect) |

**LD90**—NARS/BARS

| Prompt | Response | Description |
|---|---|---|
| TRAN | AC1, AC2, SUM | Access code 1, 2, or summary tables |
| NPA | 200-999<br>200-999 200-999<br>1200-1999<br>1200-1999 1200-1999 | Area code or extended NPA code translation |
| HNPA | 200-999<br>1200-1999 | Home Numbering Plan Area code |

## Carrier Access Codes

A Carrier Access Code (CAC) gives a caller access to any interexchange carrier or Operator Service Provider (OSP). FCC regulations require that Call Aggregators, such as hotels, motels, hospitals, universities, airports, gas stations, and pay telephone owners, provide selective access to the public. Callers dial the CAC to reach their desired carrier or OSP before dialing the telephone number.

Aggregators, although they must allow callers access to any long distance caller, are permitted to block calls *selectively*. Selective equal access lets aggregators choose to block direct-dialed calls that result in charges to the originating telephone. Aggregators cannot block operator-assisted calls.

Northern Telecom provided an up-issue of X11 release 14 in 1992 to conform to FCC Equal Access requirements. Beginning with X11 release 17, all software releases support Equal Access. (X11 releases 15 and 16 do not support Equal Access.) Support for expanded codes, as described in the following paragraph, is available beginning with X11 release 19.

The CAC has included a "10" identifying prefix followed by a three-digit Carrier Identification Code (CIC) for a total of five digits. New FCC regulations, reflected in X11 release 19, require that the CAC expand to seven digits: a "101" identifying prefix followed by a four-digit CIC. The regulations require that both the old five-digit format and the new seven-digit format be supported for an 18 month permissive period during 1995 and 1996. After this period, only the longer format will be supported.

X11 software allows the following operator-assisted North American and international dialing sequences:

- CAC + 0
- CAC + 0 + (NPA) + NXX + XXXX
- CAC + 01 + CC + NN

X11 software allows or denies these direct-dialed calls:

- CAC + 1 + (NPA) + NXX + XXXX
- CAC + 011 + CC + NN

**where:**

**CAC** = Carrier Access Code (10XXX or 101XXXX)

**NPA** = Numbering Plan Area (area code)

**NXX** = Central Office code format
(N = any digit except 0 or 1; X = any digit (0–9))

**XXXX** = any four digits

**CC** = Country Code

**NN** = National number

## Feature packaging

Equal Access compliance is included in basic X11 software. The Network Class of Service package (NCOS, package 32) is required to configure Equal Access.

## Feature implementation

Current Equal Access users who install new software prior to the end of the 1995/1996 FCC interim period must set the Original Carrier Access Code (OCAC) flag in LD17 to YES when they upgrade their software or begin using a release that supports the CAC expansion feature.

For complete information on implementation and configuration, refer to "Equal Access Compliance" on page 79-1.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | All |



# Off Hook Alarm Security

With X11 release 18 and later, Off Hook Alarm Services (OHAS) allows any call to be intercepted to a customer defined Directory Number (DN) other than an attendant, for example, a security DN. OHAS treatment is determined on a set basis by assigning a class of service called Alarm Security Allowed (ASCA).

By enhancing line-lockout, telephones with Alarm Security Allowed (ASCA) class of service are intercepted to customer defined Directory Numbers (DNs) when the dial tone/interdigit timer expires or the telephone is Forced Out of Service (FSVC). Telephones without ASCA continue to use the existing line-lockout treatment. (Refer to the Line Lockout module in this document).

An Off Hook Alarm Security (OHAS) DN can be a single appearance Directory Number (DN), Multiple Appearance DN, or an Automatic Call Distribution (ACD) DN. The OHAS DN cannot be an Attendant DN, Listed DN, a SPRE, Virtual ACD Agent, or a Trunk Access Code. To receive OHAS treatment, a telephone must have Alarm Security Allowed (ASCA) class of service. To associate a telephone with an OHAS DN:

— Assign the ASCA class of service in LD10 or LD11.

— Assign an Off Hook Interdigit OHAS number (OHID) in LD10 or LD11.

— *For digital telephones only,* assign a Forced Out of Service (FSVC) OHAS number in LD11.

— Associate the OHID and FSVC (if necessary), and the Alarm Security Timer (ASTM) to an OHAS DN through the ODNx prompt in LD15.

If the ASCA class of service is assigned, but the telephone is not associated to an OHAS DN, an error message appears on the maintenance TTY when the system tries to redirect the call.

The Alarm Security Timer (ASTM) provides dial tone and interdigit timing for telephones with ASCA class of service. The ASTM does not apply to telephones being Forced Out of Service (FSVC).

Telephones associated with OHAS DNs intercept to single-appearance DNs, Multiple Appearance DNs, or ACD DNs. OHAS treatment is provided if one of the following events takes place on a telephone associated with an OHAS DN:

- Dial tone timeout
- Interdigit timeout
- Digital telephones FSVC

### Dial tone and interdigit timeout—call treatment

A telephone associated with an OHAS DN that receives a dial tone or interdigit timeout intercepts to the OHAS DN specified by the telephone's Off Hook Interdigit OHAS number (OHID).

### FSVC—call treatment

A digital telephone is considered FSVC when the line is cut, damaged, or unplugged.

The FSVC OHAS treatment applies *only to digital telephones.* A telephone associated with an OHAS DN that is FSVC intercepts to the OHAS DN specified by the telephone's FSVC number.

## Multiple OHAS DNs

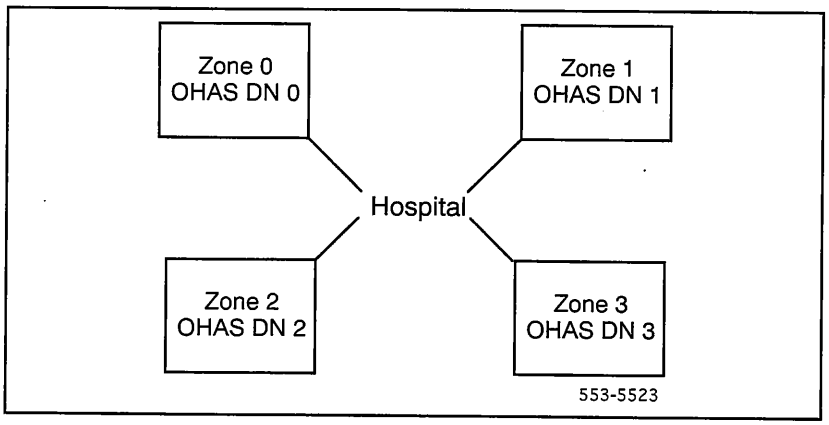
The two methods for handling multiple OHAS DNs are zone and event dependent, and are described in the following sections.

## Multiple OHAS DNs—zone dependent

OHAS allows for multiple OHAS DNs within a single customer, enabling the customer to create multiple zones.

For example, a hospital with several locations can define separate OHAS DNs for each location and define each distinct location as a zone. In Figure 129-1, the hospital has four zones. A separate OHAS DN is defined for each of the four zones. Zone 0 uses OHAS DN 0, Zone 1 uses OHAS DN 1, and so on. Each telephone in Zone 0 defines the OHID and FSVC numbers to 0; each telephone in Zone 1 defines the OHID and FSVC numbers to 1, and so on.

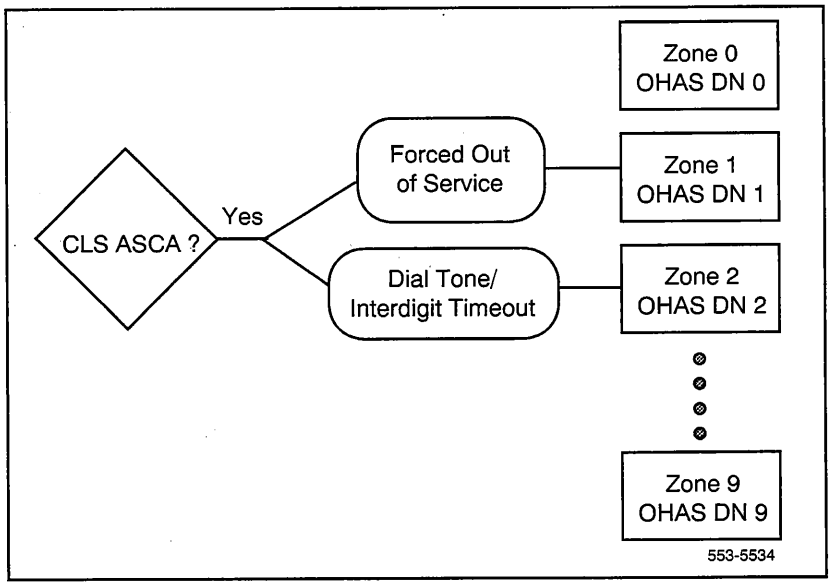
**Figure 129-1**
**Zone Dependent example**



## Multiple OHAS DNs—event dependent

OHAS can distinguish between OHID timeout and the FSVC events by having a single telephone with separate OHAS DNs for OHID timeout and FSVC events. For example, a telephone can be defined with a FSVC number 1 and OHID number 2. If a dial tone/interdigit timeout occurs, the telephone intercepts to OHAS DN 2. If the same telephone is FSVC, OHAS DN 1 is notified.

**Figure 129-2**
**Event Dependent example**



## OHAS TTY display

Every time an OHAS intercept treatment takes place, a message is sent to all maintenance TTYs. This message contains an OHAS message indicator, the originating DN and TN, and a time stamp.

| **Format** | | | |
|---|---|---|---|
| OHASxxxx | <dn> | l s c u | time stamp |
| **Output example** | | | |
| OHAS0000 | 5003 | 1 0 1 0 | 04:30:21 |

***Note:*** The two possible OHAS messages are:
OHAS0000OHAS treatment due to dial tone/interdigit timeout
OHAS0001OHAS treatment due to Forced Out of Service call treatment

# Operating parameters

OHAS is not supported for attendants or networks.

OHAS intercept treatment for telephones FSVC is provided only for the following telephones:

- M2009, M2112, and M2018
- M2317
- M3000
- M2006, M2216, M2616, M2008, and M2016

The Alarm Security Timer (ASTM) does not apply to telephones being FSVC.

The timing for recognizing a FSVC condition depends on the type of card that the system is using:

- The Integrated Services Data Line Cards (ISDLCs) take approximately 6 sec. to recognize a FSVC condition.
- Peripheral Controller cards take approximately 1 sec. to recognize a FSCV condition.

Once a trunk is seized, OHAS treatment does not apply.

## Feature interactions

– Call Redirection
Call Redirection features defined for telephones with ASCA class of service work as currently defined in the system. The Call Redirection features include the following:

- Call Forward All Calls
- Call Forward No Answer
- Call Forward Busy
- Call Forward by Call Type
- Call Pickup
- Hunting

– Call Transfer
A telephone receives the OHAS treatment if the telephone has ASCA class of service and attempts to transfer a call and the ASTM expires.

– Conference
The OHAS line-lockout treatment occurs when a telephone associated with an OHAS DN initiates a conference call and the ASTM expires. Only the conference initiator receives the OHAS treatment; other conferees remain in conference. If the initiator of the conference call presses the conference key, the OHAS DN is conferenced in with the other conferees.

– Line-lockout
OHAS treatment occurs when a telephone with ASCA class of service receives an interdigit or dial tone timeout. The ASTM is used instead of the dial tone and interdigit timers (DIDT and DIND, respectively) normally used for LLT and DLT line-lockout treatment.

– No Hold Conference (NHC)
OHAS treatment occurs when a telephone with ASCA class of service attempts a NHC call and the ASTM expires. The OHAS DN is conferenced in with the other conferees.

– Last Number Redial/Stored Number Redial
OHAS treatment may apply to these features if the ASTM expires.

- ESN and trunk access codes
  If an ESN or trunk access code is dialed, the dial tone/interdigit timer is stopped and the set will not recall to the designated ODN after the specified time period has elapsed.
- Room Status
  OHAS and Offhook Detection in Room Status feature are mutually exclusive.
- System Speed Call/Speed Call
  OHAS treatment may apply to these features if the ASTM expires. The Alarm Security Timer may expire for the following reasons:
  - A dial tone or interdigit timeout occurs while dialing the speed call access code.
  - The Speed Call being accessed has an asterisk (*) causing a 3-second delay. If the ASTM is 3 seconds or less, the OHAS intercept treatment may occur.

## Feature packaging

OHAS is included in X11 base system software.

## Feature operation

There is no procedure required to operate this feature.

# Feature implementation

**LD15** – Define the Off Hook Alarm Services (OHAS) Directory Numbers (DNs).

| | | |
|---|---|---|
| REQ | NEW, CHG | Add or change a customer |
| TYPE | CDB | Customer Data Block |
| CUST | 0–99 | Customer number |
| LLT | (OVF), ATN, OFA | Flexible line-lockout treatment |
| OHAS | YES, (NO) | Change OHAS parameters.<br>The following prompts occur only if OHAS YES. |
| _ODN0 | xxx...x | OHAS DN 0 |
| _ODN1 | xxx...x | OHAS DN 1 |
| _ODN2 | xxx...x | OHAS DN 2 |
| _ODN3 | xxx...x | OHAS DN 3 |
| _ODN4 | xxx...x | OHAS DN 4 |
| _ODN5 | xxx...x | OHAS DN 5 |
| _ODN6 | xxx...x | OHAS DN 6 |
| _ODN7 | xxx...x | OHAS DN 7 |
| _ODN8 | xxx...x | OHAS DN 8 |
| _ODN9 | xxx...x | OHAS DN 9 |
| _ASTM | 1–(30)–63 | The timer applies to all OHAS DNs and is programmable in one-second increments. |

***Note:*** OHAS DNs must have ASCA class of service assigned in LD10 or LD11.

**LD10** – Assign Alarm Security Allowed (ASCA) class of service

| | | |
|---|---|---|
| REQ | NEW, CHG | Add or change a PBX telephone |
| TYPE | 500, 2500 | Telephone type |
| CLS | ASCA, (ASCD) | ASCA, Alarm Security Denied (ASCD) |
| OHID | (0)–9 | OHID |
| ***Note:*** When ASCA is assigned, the OHAS DN must be defined in LD15. | | |

**LD11** – Assign Alarm Security Allowed (ASCA) class of service

| | | |
|---|---|---|
| REQ | NEW, CHG | Add or change a BCS telephone |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| CLS | ASCA, (ASCD) | ASCA, ASCD |
| OHID | (0)–9 | OHID |
| FSVC | (0)–9 | FSVC OHAS DN number<br>(FSVC prompt is given only to digital telephones) |
| ***Note:*** When ASCA is assigned, the OHAS DN must be defined in LD15. | | |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Off-Premise Extension

The Off-Premise Extension (OPX) feature allows a single line telephone serving as an extension to be located away from the customer premises. The loop limit is 1400 ohms to the station or equivalent long-line circuit interface. Distance varies depending on the gauge of wire used.

Refer to Northern Telecom Publication *500/2500 line cards description and operation* (553-2201-183) for additional information.

## Operating parameters

The Off-Premise Extension (OPX) feature applies only to single line telephones. A QPC192 line circuit pack must be equipped.

## Feature interactions

Refer to *500/2500 line cards description and operation* (553-2201-183).

## Feature packaging

Off-Premise Extension (OPX) is included in basic X11 system software.

## Feature implementation

**LD10**—Add or change Off-Premise Extension class of service for single line telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | OPX, (ONP) | Telephone is an off-premises or on-premises extension |

## Feature operation

There is no specific procedure required to operate this feature.

Issued: 92 12 31
Status: Standard
X11 Release: All



# Office Data Administration System

The Office Data Administration System (ODAS) package provides a method for retrieving administrative information stored in Meridian 1 memory. This feature can expedite administration and billing activities by significantly reducing the need for manual records.

The Station Line Designator (DES) code is any alphanumeric code of one to six characters. The customer selects this number which can help the customer group telephones according to users, floor location, or any other category.

The following table lists the types of data that can be printed using Office Data Administration System (ODAS) and the overlay program to use for each task:

| Type of print required | LD |
|---|---|
| Count telephones with specified feature(s) | 81 |
| List Directory Number (DN) blocks by DATE entry | 22 |
| List DN blocks by station line designator (DES) entry | 22 |
| List Terminal Number (TN) alphabetically by DES | 83 |
| List TN with specified DATE entry | 20 |
| List TN with specified DES entry | 20 |
| Print Multiple Appearance Groups | 82 |
| Print TN to DES correlation for specified feature(s) | 81 |
| Print TN data blocks with specified DATE entry | 20 |
| Print TN data blocks with specified DES entry | 20 |

Refer to the Northern Telecom Publication *Office Data Administration System description and engineering* (553-2721-100) for a complete description of Office Data Administration System (ODAS).

## Operating parameters

It is recommended that 1200 baud printers be used on larger systems to reduce the time required to obtain ODAS printouts. When a system is equipped with a 1200 baud printer, a 300 baud device must not be assigned to perform the same function.

## Feature interactions

Refer to *Office Data Administration System description and engineering* (553-2721-100).

## Feature packaging

ODAS, package 20, has no feature package dependencies.

# Feature implementation

**LD84/85** – Assign or change station line designator (DES) entry for telephones.

| | | |
|---|---|---|
| TN | l s c u | Terminal Number |
| DES | a...x | DES (one to six alphanumeric characters) |

**LD10**—Assign or change DES entry for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| DES | a...x | DES (one to six alphanumeric characters) |

**LD11**—Assign or change DES entry for 500/2500, SL-1, M3000, and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| DES | a...x | DES (one to six alphanumeric characters) |

# Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# On Hook Dialing

The On Hook Dialing feature enables an SL-1 or Meridian digital telephone user to make a call without lifting the handset. Signaling tones and the voice of the called party are heard over the loudspeaker. For two-way communication, the user must lift the handset or activate the Handsfree unit if equipped.

## Operating parameters

The On Hook Dialing feature does not apply to 500/2500 telephones.

## Feature interactions

There are no feature interactions.

## Feature packaging

On Hook dialing is included in basic X11 system software.

## Feature implementation

Not applicable.

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 5 |



# Optional Outpulsing Delay

The Optional Outpulsing Delay (OOD) feature increases to three seconds the Start of Dialing Delay used for automated dialing on loop start Central Office trunks. This feature is required for Meridian 1 connection in some countries.

## Operating parameters

There are no feature requirements.

## Feature interactions

Features that automatically dial digits onto a loop start CO trunk are provided with an additional delay. These features include the following:

— Stored Number Redial

— Autodial

— Speed Call

— Call Forward All Calls

— Basic Alternate Route Selection/Network Alternate Route Selection (BARS/NARS)

— System Speed Call

— Network Speed Call

— Flexible Hotline

## Feature packaging

Optional Outpulsing Delay (OOD), package 79, has no feature package dependencies.

## Feature implementation

Not applicable.

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 18 |



# Overlay Cache Memory

With X11 release 18 and later, Overlay Cache Memory uses Protected Data Storage (PDS) as a cache area for storing overlays loaded from disk. The cache memory overlays are accessed much faster than those on disk, reducing the load time to approximately one second.

A maximum of 32 overlays may reside in Overlay Cache Memory at one time. The CACH prompt in LD17 defines the number of cache memory buffers allocated in protected memory. Each overlay resides in a buffer. A zero entry deactivates this feature and requires all overlays to be loaded from disk.

Each buffer requires 19K of Protected Data Storage (PDS). If there is insufficient memory to store the number of buffers requested, a warning message follows the LD17 prompt sequence. The message indicates that more memory is required to store all the caches requested.

If a small number of cache memory buffers are allocated, frequently used overlays may be removed from protected memory by seldom used overlays. The PRTY prompt in LD17 sets an overlay priority flag. A priority flag prevents the removal of an overlay from cache memory by loading another overlay. The number of priority flags set cannot exceed the number of cache memory buffers specified.

When an LDxx command is entered, the cache memory is checked for the requested overlay. If the requested overlay is in cache memory, its data portion is rapidly copied to the regular overlay area.

A requested overlay that is not in cache memory is loaded from the disk into the normal overlay area and simultaneously stored into a cache memory buffer, if one is available. If one is not available, the new overlay overwrites another in the cache memory.

If an overlay is loaded from disk and no unused buffer area exists, the overlay used longest ago without its priority flag set is removed and replaced by the new overlay.

## Operating parameters

If the feature is deactivated with a zero entry at the CACH prompt in LD17, no cache memory exists and all overlays are loaded from disk.

Cache memory is not affected by a system initialization. After a system initialization, it is *not* necessary to reload overlays from the disk.

Each buffer requires 19K of PDS. The number of cache memory buffers allocated by the system is limited by the availability of spare memory. If enough memory exists, a maximum of 32 cache memory buffers is allowed. Each buffer stores one overlay.

The number of overlay priorities set cannot exceed the number of cache buffers allocated.

To load an overlay from disk use the command LDxx D. This is necessary for the system to determine which overlay to read. The LDxx D command loads the overlay from disk and overwrites the same overlay existing in cache memory.

Using the LDxx D command to force load an overlay from disk does not simultaneously support the peripheral download SUSP command.

When overlays are stored in cache memory, the ENLT and DIST commands are not supported.

The system automatically stores and retrieves overlays from cache memory. If the cache area is full when a new overlay is requested, the overlay gone unused the longest without a priority flag set is removed and replaced by the new overlay. Daily routines and background loaded overlays are not stored in cache memory.

The Overlay Cache Memory feature does not apply to Option 81 telephones.

### Conversion and upgrades

Due to memory requirements, installing a new issue of software or the same issue with additional features may reduce the number of cache buffers that can be allocated. A warning message indicates this reduction has occurred.

If this reduction causes the number of overlay priorities to exceed the maximum number of cache buffers, the overlay priorities are reduced to equal the number of cache buffers. The priorities are automatically reduced by beginning with the highest overlay number and working downward.

## Feature packaging

This feature is included in the base X11 system software.

## Feature implementation

**LD17** – Change system configuration record

| | | |
|---|---|---|
| REQ | CHG | Change data |
| TYPE | CFN | Configuration data block |
| OVLY | YES | Change overlay area |
| CACH | (0), 2-32 | Number of overlay buffers held in cache memory.<br>Entering 0 disables the feature. |
| PRTY | xx xx xx xx... | Set priority for the stored overlays. Priority can be set only for the number of overlays specified in CACH. xx = the overlay number.<br>An X preceding the number deletes the priority flag for that overlay. |

## Feature operation

There is no procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Override

Override allows a user to enter into an established connection. A warning tone notifies the talking parties that a third party is about to enter the conversation. The warning tone is an initial one-second burst, followed by a 256-ms burst repeated every 16 seconds.

The Override feature can be used after a user has dialed a busy Directory Number (DN).

## Operating parameters

On SL-1 and digital telephones, a separate Override key must be assigned. An associated lamp is not required.

On 500/2500 telephones, Flexible Feature Code (FFC) is required to override a call.

Override cannot be used to enter an established connection if any party (telephone or trunk) has Warning Tone Denied class of service. In this case, overflow tone is heard.

The system must have a conference loop.

## Feature interactions

— Conference
Override cannot be used to enter a conference call.

## Feature packaging

Override is included in basic X11 system software.

For 500/2500 telephones, Flexible Feature Code (FFC), package 139, must be equipped.

# Feature implementation

**LD10** – Allow Override for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | OVDA, (OVDD) | Override allowed or denied for this telephone |
| | XFA, (XFD) | Transfer allowed or denied |
| | (WTA), WTD | Warning Tone Allowed or Denied (WTA is required to be overridden) |

**LD11** – Add or change Override for SL-1 and digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CLS | (WTA), WTD | Warning Tone Allowed or Denied (WTA is required to be overridden) |
| KEY | xx OVR | Override key (must be key 34 for M3000) |

**LD14** – Define Warning Tone Allowed for trunks to permit Override.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaa | Trunk type<br>aaa = ADM, AID, ATVN, AWR, CAA, CAM, COT, CSA, DIC, DID, FEX, ISA, MDM, MUS, PAG, RAN, RCD, RLM, RLR, TIE, WAT |
| TN | l s c u | Terminal Number |
| CLS | (WTA), WTD | Warning Tone Allowed or Denied (WTA is required to be overridden) |

**LD57** – Configure Flexible Feature Code (FFC) for Override on 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | FFC | Flexible Feature Codes |
| CUST | 0–99 | Customer number |
| CODE | OVRD | Change Override access code |
| OVRD | xxxx | Override access code |

## Feature operation

To override a call in progress from a SL-1 or digital telephone:

1 Dial the number. You hear a busy tone.

2 Press **Override**. Everyone hears a one-second tone burst.

3 You are connected to the call.

To cancel Override from a SL-1 or digital telephone:

1 Press **Release** or hang up.

2 You are disconnected. The original call remains active.

To override a call in progress from a 500/2500 telephone:

1 Dial the number. You hear busy tone.

2 Flash the switchhook or press **LINK**.

3 Dial the Flexible Feature Code (FFC) for Override. Everyone hears a one-second tone burst.

4 You are connected to the call.

To cancel Override from a 500/2500 telephone:

1 Press **Release** or hang up.

2 You are disconnected. The original call remains active.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Paging

The Meridian 1 provides switching access and trunk circuit interface to a customer-supplied speaker or radio paging equipment. Paging equipment is accessed by dial access or a Page key on attendant consoles. Telephones cannot be assigned a Page key and must dial access this feature.

Attendant consoles using the Page key preempt telephones having only dial access. Telephones preempted by the attendant are disconnected and must re-access the paging trunk.

Time Forced Disconnect (TFD), X11 release 15 and later software provides a variable timer to force disconnect Paging trunks. The timer is defined on a route basis to limit the time a user can keep a Paging trunk seized. When the timer expires, the call is disconnected from the trunk.

The trunk is disconnected when the Time Forced Disconnect (TFD) timer expires in all cases, regardless of the status of the trunk at the time. Timing starts as soon as the trunk is seized (not when the call is established), so the timer must allow some delay for connection time.

The Time Forced Disconnect timer is used on the following trunk types:

- COT Central Office
- DIC Dictation
- FEX Foreign Exchange
- PAG Paging trunks
- TIE Tie direct lines
- WAT Wide Area Telephone Service

## Operating parameters

Station dial access to the Paging trunk is restricted by the Trunk Group Access Restriction (TGAR) code entered in LD10 or LD11.

Unique access codes are required for each Paging route.

Unique feature keys are assigned for each Paging route.

All Zone Paging is not available with Meridian 1 unless the customer provided paging equipment is equipped with separate "all-zone" input.

The following requirements apply to the X11 release 15 Time Forced Disconnect (TFD) feature:

- The timer can only be assigned on a route basis and not to individual trunks. All trunks in a route have the same timer value.
- After a timer value is changed, it does not take effect on a given trunk until that trunk is released and seized again.
- Changing a timer value to zero effectively removes the TFD timer from all the trunks in that route.
- The range of the timer is 1 hour, in 30-second increments (0–3600). The TFD timer is independent of all other timers.

## Feature interactions

- Private Line Routes
  Route 31 cannot be assigned as a paging route on X11 release 13 and earlier software.

Trunks forced off by TFD are disconnected normally, accompanied by an error message (ERR4054) output on the system terminal. The error message identifies the Originating Terminal Number (TN), Terminating Terminal Number (TN), date, and time for the following trunk types:

- analog trunks
- Digital Trunk Interface (DTI) trunks
- ISDN ISL/PRI trunks

# Feature packaging

Paging is included in basic X11 system software.

# Feature implementation

**LD16** – Add or change a Paging trunk route.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer Number |
| ROUTE | 0–511 | Route Number |
| TKTP | PAG | Paging trunk route |
| ICOG | OGT | Outgoing trunk |
| ACOD | xxx...x | Trunk route access code (if the Directory Number Expansion package is equipped, this access code can have up to seven digits) |
| TARG | 1–31 | Trunk access restriction group number |

**LD16** – Define the timer for the Time Forced Disconnect feature.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer Number |
| ROUTE | 0–511 | Route Number |
| CNTL | Yes, (No) | Changes to controls or timers (default is No) |
| TIMR | TFD xxxx | TFD timer<br>xxxx = 0–(30)–3600 seconds, in 30-second increments |

**LD14** – Add or change a Paging trunk within the Paging trunk route.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | PAG | Paging trunk |
| TN | l s c u | Terminal Number |
| XTRK | XUT, XEM | Universal Trunk Card (NT8D14), E&M Trunk Card (NT8D15). Prompted only for superloops and the first unit on the card. |
| CUST | 0-99 | Customer Number |
| SIGL | DX2<br>DX4<br>EAM<br>EM4<br>LDR<br>OAD | DX signalling (2-wire) — QPC71 only<br>DX signalling (4-wire) — QPC71 and NT8D15<br>E&M signalling (2-wire) — QPC71 and NT8D15<br>E&M signalling (4-wire) — QPC71 and NT8D15<br>Loop dial repeating — QPC71 and NT8D14/15<br>Outgoing automatic, incoming dial — QPC71, NT8D14/15 |
| STRO | IMM<br>WNK<br>DDL | Immediate start outgoing<br>Wink start outgoing<br>Delay dial outgoing |
| SUPN | Yes, (No) | Answer and disconnect supervision required |

**LD12** – Assign Paging key for an attendant console. No programming is required to allow the attendant dial access to Paging.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | ATT, 1250, 2250 | Console type |
| TN | l s c u | Terminal Number |
| KEY | xx PAG yyy...y | Paging key<br>xx = key number (0–9 on M1250, 0–19 on M2250) yy...y = access code of Paging trunk route |

**LD10** – Allow or deny dial access to Paging for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| TGAR | xx | Allow/deny access to Paging trunk |

**LD11** – Allow or deny dial access to Paging for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| TGAR | xx | Allow/deny access to Paging trunk |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 8 |



# Pretranslation

In a business or hospitality environment, many communications situations can be simplified with a flexible dialing plan. Pretranslation lets you create a such a plan by using Speed Call lists as Pretranslation Tables.

Some typical uses of Pretranslation are:

— room number to DN correlation

— Partitioning of telephones by category, group, department, floor, building, room, special service, and so on

— internal call restrictions

— expanded customer dialing capability

The dialing capabilities and/or restrictions of each Pretranslation group are defined in Pretranslation Tables. The tables are Speed Call lists modified for Pretranslation.

With Pretranslation, only the first dialed digit of a call is pretranslated. The translation choices are:

— **Pass** the digit as dialed with no changes

— **Replace** the first dialed digit with a specified substitute digit or digits, and pass the remaining digits unchanged

— **Delete** the first dialed digit and pass the remaining digits unchanged

— **Block** the call based on the first digit dialed

The pretranslator must deal with all telephones, trunks and consoles capable of delivering a dialed digit to the Meridian 1 digit processor. Each of these must be assigned to one of 255 Pretranslation groups. The groups are generally set up as follows:

- trunk and DISA calls default to group 0
- attendant consoles are always unrestricted and are unaffected by pretranslation
- telephones and terminals default to group 0, but may be assigned to groups 1-254.

  *Note:* Before X11 release 14, there are a maximum of 8 Pretranslation groups (0-7).

The dialing capabilities of each group are reflected by the codes stored against entries in the Pretranslation table. The four possible codes are:

| Code | Function |
|---|---|
| * | Block call |
| *** | Delete Pretranslation (first dialed) digit, pass remaining digits unchanged |
| space <CR> | Pass Pretranslation digit unchanged |
| xxxx...x | Pretranslate digit into xxxx...x<br>(xxxx...x = replacement DN) |

Only the first dialed digit is sent from the digit processor to the pretranslator. The pretranslator looks up the stored code for the dialed digit in the Pretranslation table associated with the calling terminal, applies the treatment specified by the entry and passes the result to the DN translator. From then on, the call is processed normally. Pretranslation of the call is finished at this point, unless call modification procedures, such as a Call Transfer, are involved.

## Setting up dialing plans and Pretranslation tables

Steps needed to set up pretranslation:

1 Identify the customer numbering plan.

2 Determine access and restrictions for each pretranslation calling group.

3 Determine dialing requirements and instructions for the pretranslation calling groups and create a Pretranslation Table for each group.

4 Implement the feature.

A hotel has been chosen as a model to illustrate the principles of Pretranslation and how to set up Pretranslation. However, Pretranslation can be applied to many other business environments.

**Table 137-1**
**Description of model**

| |
|---|
| Hotel with 12 floors containing administrative offices, hotel services and guest rooms. |
| **Floor 1** — Lobby, gift shop, restaurants and administrative offices |
| **Floor 2** — Meeting rooms, salon and additional office space |
| **Floor 3** — Banquet rooms and health club |
| **Floors 4-12** — Guest rooms (floors 4-9 each have 50 rooms, floors 10-12 each have 25 suites) |

## Step 1—Identify the numbering plan

The model hotel's numbering plan is shown in Table 137-2.

**Table 137-2**
**Numbering plan for model**

| Available numbers | Assigned to: | Actual DNs used |
|---|---|---|
| 0 | Operator | 0 |
| 1 | Guest rooms on floor 10 | 1001-1026 |
| | Guest rooms on floor 11 | 1101-1126 |
| | Guest rooms on floor 12 | 1201-1226 |
| 2 | Room service | 2001 |
| | Cafe | 2002 |
| | Restaurant | 2003 |
| | Gift shop | 2004 |
| | Health club | 2005 |
| | Salon | 2006 |
| | Housekeeping | 2007 |
| | Bell Captain | 2008 |
| | Valet | 2009 |
| | Meeting rooms | 2100-2199 |
| | Administrative offices | 2300-2599 |
| | Security | 2700 |
| | Front desk | 2730 |
| | Lobby telephones | 2750-2765 |
| | Miscellaneous | 2800-2899 |
| 3 | SPRE code | |
| 4 | unused | |
| 5 | unused | |
| 6 | Trunk access codes | 620-635 |
| 7 | Guest rooms on floor 4 | 7401-7451 |
| | Guest rooms on floor 5 | 7501-7551 |
| | Guest rooms on floor 6 | 7601-7651 |
| | Guest rooms on floor 7 | 7701-7751 |
| | Guest rooms on floor 8 | 7801-7851 |
| | Guest rooms on floor 9 | 7901-7951 |
| 8 | unused | |
| 9 | BARS access codes | 9 |

## Step 2—Determine access restrictions

Pretranslation calling groups and dialing restrictions are shown in Table 137-3.

**Table 137-3**
**Access and restrictions for model**

| Group number (XLST) | Type of station | Allowed access | Denied access |
|---|---|---|---|
| 0 | Default for DISA trunks and telephones | Operator only | All except Operator |
| 1 | Guest rooms | Other guest rooms, hotel services, local and long distance, operator | Administrative telephones and direct trunk access |
| 2 | Lobby and courtesy telephones | Guest rooms, security and the operator | Hotel services, administrative telephones, local and long distance, direct trunk access, and SPRE |
| 3 | Administrative A | Guest rooms, administrative telephones, direct trunk access, SPRE, operator, BARS access for local and long distance | Direct trunk access |
| 4 | Administrative B | Guest rooms, administrative telephones, SPRE, operator | Direct trunk access, BARS access for local and long distance |

## Step 3—Determine dialing requirements and create Pretranslation Tables

Dialing instructions for Group Zero in this model are shown in Table 137-4 and the corresponding Pretranslation Table is listed in Table 137-5.

For an explanation of the groups used in this model, see Table 137-3.

**Table 137-4**
**Group 0 — Default for unassigned trunks and telephones**

| Actual digits dialed | Desired destination |
|---|---|
| 1 | Operator |
| 2 | Operator |
| 3 | Operator |
| 4 | Operator |
| 5 | Operator |
| 6 | Operator |
| 7 | Operator |
| 8 | Operator |
| 9 | Operator |
| 0 | Operator |

**Table 137-5**
**Group 0 — Pretranslation Table (default)**

| Digit | Code | Function | Destination |
|---|---|---|---|
| 1 | 0 | replace | Operator |
| 2 | 0 | replace | Operator |
| 3 | 0 | replace | Operator |
| 4 | 0 | replace | Operator |
| 5 | 0 | replace | Operator |
| 6 | 0 | replace | Operator |
| 7 | 0 | replace | Operator |
| 8 | 0 | replace | Operator |
| 9 | 0 | replace | Operator |
| 0 | space <CR> | pass | Operator |

Dialing instructions for Group One in this model are shown in Table 137-6 and the corresponding Pretranslation Table is listed in Table 137-7.

**Table 137-6**
**Group 1 — Guest dialing instructions for model**

| Actual digits dialed | Desired destination |
|---|---|
| 1xxx | Guest rooms on floors 10-12 |
| 2 | Security |
| 3 | SPRE (housekeeping staff for Room Status) |
| 4 | Front desk |
| 51 | Room Service |
| 52 | Cafe |
| 53 | Restaurant |
| 54 | Gift shop |
| 55 | Health club |
| 56 | Salon |
| 57 | Housekeeping |
| 58 | Bell captain |
| 59 | Valet |
| 7xxx | Guest rooms on floors 4-9 |
| 8 | Long distance calls |
| 9 | Local calls |
| 0 | Operator |

**Table 137-7**
**Group 1 — Pretranslation Table (Guests)**

| Digit | Code | Function | Destination |
|---|---|---|---|
| 1 | space <CR> | pass | Guest rooms |
| 2 | 2700 | replace | Security |
| 3 | space <CR> | pass | SPRE |
| 4 | 2730 | replace | Front desk |
| 5 (see Note) | 200 | replace | Guest services |
| 6 | * | block call | not used |
| 7 | space <CR> | pass | Guest rooms |
| 8 | 620 | replace | Long distance calls |
| 9 | space <CR> | pass | Local calls |
| 0 | space <CR> | pass | Operator |

***Note:*** When a guest dials 51 for room service, the digit "5" is translated to the entry "200" and the 1 is passed as is, resulting in the extension "2001."

Dialing instructions for Group Two in this model are shown in Table 137-8 and the corresponding Pretranslation Table is listed in Table 137-9.

For an explanation of the groups used in this model, see Table 137-3.

**Table 137-8**
**Group 2 — Lobby and courtesy telephone dialing instructions**

| Actual digits dialed | Desired destination |
|---|---|
| 1xxx | Guest rooms on floors 10-12 |
| 2 | Security |
| 7xxx | Guest rooms on floors 4-9 |
| 0 | Operator |

**Table 137-9**
**Group 2 — Pretranslation Table (Lobby and courtesy telephones)**

| Digit | Code | Function | Destination |
|---|---|---|---|
| 1 | space <CR> | pass | Guest rooms |
| 2 | 2700 | replace | Security |
| 3 | * | block call | not used |
| 4 | * | block call | not used |
| 5 | * | block call | not used |
| 6 | * | block call | not used |
| 7 | space <CR> | pass | Guest rooms |
| 8 | * | block call | not used |
| 9 | * | block call | not used |
| 0 | space <CR> | pass | Operator |

Dialing instructions for Group Three in this model are shown in Table 137-10 and the corresponding Pretranslation Table is listed in Table 137-11.

For an explanation of the groups used in this model, see Table 137-3.

**Table 137-10**
**Group 3 — Administrative A dialing instructions for model**

| Actual digits dialed | Desired destination |
|---|---|
| 1xxx | Guest rooms on floors 10-12 |
| 2xxx | Administrative telephones |
| 3 | SPRE |
| 7xxx | Guest rooms on floors 4-9 |
| 9 | Local/long distance through BARS |
| 0 | Operator |

**Table 137-11**
**Group 3 — Pretranslation Table (Administrative A)**

| Digit | Code | Function | Destination |
|---|---|---|---|
| 1 | space <CR> | pass | Guest rooms |
| 2 | space <CR> | pass | Administrative telephones |
| 3 | space <CR> | pass | SPRE |
| 4 | * | block call | not used |
| 5 | * | block call | not used |
| 6 | * | block call | not used |
| 7 | space <CR> | pass | Guest rooms |
| 8 | * | block call | not used |
| 9 | space <CR> | pass | Local/long distance through BARS |
| 0 | space <CR> | pass | Operator |

Dialing instructions for Group Four in this model are shown in Table 137-12 and the corresponding Pretranslation Table is listed in Table 137-13.

For an explanation of the groups used in this model, see Table 137-3.

**Table 137-12**
**Group 4 — Administrative B dialing instructions for model**

| Actual digits dialed | Desired destination |
|---|---|
| 1xxx | Guest rooms on floors 10-12 |
| 2xxx | Administrative telephones |
| 3 | SPRE |
| 7xxx | Guest rooms on floors 4-9 |
| 0 | Operator |

**Table 137-13**
**Group 4 — Pretranslation Table (Administrative B)**

| Digit | Code | Function | Destination |
|---|---|---|---|
| 1 | space <CR> | pass | Guest rooms |
| 2 | space <CR> | pass | Administrative telephones |
| 3 | space <CR> | pass | SPRE |
| 4 | * | block call | not used |
| 5 | * | block call | not used |
| 6 | * | block call | not used |
| 7 | space <CR> | pass | Guest rooms |
| 8 | * | block call | not used |
| 9 | * | block call | not used |
| 0 | space <CR> | pass | Operator |

## Operating parameters

The following limitations apply to the Pretranslation feature:

- Pretranslation table codes are limited to the four described previously.
- User groups are limited to 255 (8, before X11 release 14).
- Each pretranslation table entry can be up to 31 characters long, however, it is recommended that a maximum of 8 characters is used.

  After pretranslation, any previously loaded (but not pretranslated) digits are added to the end of the pretranslated digits. If the total number of digits exceeds 31, the excess digits will be truncated.
- Each Pretranslation table reduces the number of available Speed Call lists in the system.
- Speed Call Controllers do not have access to Pretranslation tables. Lists must be created and maintained through service change.

## Feature interactions

Pretranslation cannot be used with the following features:

- Automatic Trunk Maintenance
- Private Line
- Telset Messaging

- Authorization Code
  The first digit dialed after a valid Authorization Code is sent to the pretranslator.
- Call Detail Recording (CDR)
  If a number dialed is pretranslated, the translated digits appear in the CDR records, not the dialed digits.
- Call Forward
  The DN dialed-forwarded calls are pretranslated.
- Charge Account
  The first digit dialed after a valid Charge Account Code is sent to the pretranslator.

- Digit Display
  The Pretranslation digit is displayed as it was dialed, but if the call is put on hold, the digits of the pretranslated DN are displayed.
- Direct Inward System Access — DISA calls are automatically assigned XLST 0.
- Electronic Switched Network (ESN)
  The pretranslator is used with calls to HNPA, HLOC, and Home CDP locations.
- Flexible Feature Codes
  FFC codes must be accessible through a Pretranslation Table entry in order for users to activate features in this manner.
- Forced Charge Account
  The first digit dialed after a valid Charge Account Code is sent to the pretranslator.
- Meridian Link Calls
  Pretranslation cannot function with Meridian Link calls if the Hospitality Voice Services (HVS) package is enabled.
- Special Prefix
  The SPRE code must be accessible through a Pretranslation Table entry in order for users to activate features in this manner.
- Speed Call
  Entries must be accessible through a Pretranslation Table entry in order to place a speed call.

## Feature packaging

Pretranslation (PXLT), package 92 has no feature package dependencies.

# Feature implementation

**LD17**—Allocate sufficient Speed Call lists to be used as Pretranslation Tables (X11 release 13 and later software).

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration record |
| MSCL | (0)-8191 | Maximum number of Speed Call lists |

**LD18**—Add or change a Speed Call list to be used for each Pretranslation calling group.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | SCL | Speed Call data block |
| LSNO | 0-8190 | Number of Pretranslation list<br>***Note:*** With X11 release 12 and earlier, up to 255 Pretranslation lists are allowed. |
| DNSZ | 4-(16)-31 | Number of digits that can be in a list entry |
| SIZE | 10 | Maximum number of entries |
| WRT | No, (Yes) | Data is correct and can be updated in data store |
| STOR | | x is the first digit dialed |
| | x * | * = block call |
| | x *** | *** = delete the digit |
| | x space <CR> | space <CR> = pass digit unchanged |
| | x yyyy...y | yyyy...y = replacement digits |
| WRT | No, (Yes) | Data is correct and can be updated in data store |
| STOR | <CR> | Ends input of list entries |

**LD18** – Add or change the Pretranslation data block, defining the calling group to Speed Call list correlation. This procedure is necessary in X11 release 14 and later software.

This list must be configured before Pretranslation (PREO) is enabled in LD15.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | PRE | Pretranslation (X11 release 14 and later software) |
| CUST | 0-99 | Customer number |
| XLAT | xxx yyyy | Pretranslation list<br>xxx = Pretranslation calling group number (0-254)<br>yyyy = corresponding Speed Call list number (1-8190)<br>***Note:*** XLAT appears in LD15 in X11 release 13 and earlier software. |

**LD15** – Activate Pretranslation and define calling groups to Speed Call list correlation.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer Data Block |
| CUST | 0-99 | Customer number |
| PREO | 0, 1 | Allow or deny Pretranslation<br>0 = no Pretranslation<br>1 = Pretranslation |
| XLAT | x yyyy | Pretranslation list<br>x = Pretranslation calling group number (0-7)<br>yyyy = corresponding Speed Call list number (1-8190)<br>***Note:*** XLAT appears in LD18 in X11 release 14 and later software. |

**LD10** – Associate a 500/2500 telephone with a Pretranslation group.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| XLST | 0-254 | Associate telephone with the specified Pretranslation group (0-7 in X11 release 14 and earlier) |
| | <CR> | Default to Pretranslation group 0 (only when REQ = NEW) |

**LD11** – Associate a SL-1 or Meridian digital telephone with a Pretranslation group.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| XLST | 0-254 | Associate telephone with the specified Pretranslation group (0-7 in X11 release 14 and earlier) |
| | <CR> | Default to Pretranslation group 0 (only when REQ = NEW) |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Privacy

SL-1 and Meridian digital telephones automatically provide Privacy for telephones sharing a single call arrangement Directory Number (DN). When a call is in progress on the DN, no other telephone on which the DN appears can enter the call.

## Operating parameters

Privacy is not available for 500/2500 telephones.

If the Directory Number (DN) is shared with any single line telephone, Privacy is not in effect for any appearance of the DN, and anyone sharing that DN can enter an active call.

## Feature interactions

— Privacy Override
The user can override the inherent privacy on SL-1 and Meridian digital telephones. If an appearance occurs on a telephone with Privacy Override enabled, that appearance can bridge into an active call. This pertains to calls on a multiple appearance single call Directory Number (DN) when not mixed with single line telephones.

## Feature packaging

Privacy is included in basic X11 system software.

## Feature implementation

Not applicable.

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | All |



# Privacy Override

An SL-1 or Meridian digital telephone with a Privacy Override Allowed (POA) class of service can enter an established call on a multiple appearance single call Directory Number (DN). However, the call cannot be joined until it is established (that is, the EOD timer has expired).

If all members of a non-mixed multiple appearance single call DN group are allowed Privacy Override, the operation of the feature is equivalent to a mixed multiple appearance single call arrangement.

When a group contains a combination of Privacy Override Allowed (POA) and Privacy Override Denied (POD) classes of service, the telephones denied Privacy Override cannot bridge into established calls.

## Operating parameters

Privacy Override does not apply to single line telephones.

## Feature interactions

- Exclusive Hold
  Telephones with POA class of service cannot bridge into calls on Directory Numbers (DNs) with Exclusive Hold active.
- Call Transfer
  Calls in a Privacy Override conference state cannot be transferred.
- Call Park
  Calls in an Privacy Override conference state cannot be parked.
- Conference
  The Conference feature can be used to add other parties to a Privacy Override connection.
- Multiple Appearance DN, Mixed Mode
  Since the Privacy feature is not active in this mode, telephones with a POD class of service can bridge into an active call.

## Feature packaging

Privacy Override is included in basic X11 system software.

## Feature implementation

**LD11** – Allow or deny Privacy Override on an SL-1 or digital telephone.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CLS | POA, (POD) | Allow or deny Privacy Override |

## Feature operation

To activate Privacy Override, press the multiple appearance single call DN. You are automatically connected to the call.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Privacy Release

In multiple appearance single call arrangements of SL-1 and Meridian digital telephones, Privacy Release allows one other appearance of the Directory Number (DN) to enter the call. Privacy is then reestablished until Privacy Release is activated again.

## Operating parameters

Available only with SL-1 or Meridian digital telephones in multiple appearance single call arrangements.

The system must be equipped with a conference loop.

## Feature interactions

— Exclusive Hold
If the telephone with Privacy Release has Exclusive Hold Allowed in the class of service, and a call is on hold, another telephone with that Multiple Appearance Directory Number (MADN) cannot access the call.

## Feature packaging

Privacy Release is included in basic X11 system software.

## Feature implementation

**LD11** – Allow/deny Privacy Release for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx PRS | Add a Privacy Release key<br>M2317 and M3000 telephones automatically assign the PRS key to key 28. |

## Feature operation

To allow someone with another appearance of the Directory Number (DN) to enter a call:

1 Press **Priv Rls**. All appearances of that DN flash. One other party can enter the call by pressing the flashing DN key that has the call.

2 You must press **Priv Rls** again to allow another appearance of the DN to enter the call.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Private Line Service

Private Line Service enables the customer to assign private Central Office (CO) lines to selected telephones or power fail transfer equipment. When associated with an SL-1 or Meridian digital telephone, the following features are available to Private Line Service:

— Automatic Dialing

— Automatic Preselection

— Call Pickup

— Call Transfer

— Call Status

— Conference

— Common Audible Signaling

— Hold

— Multiple appearance single call arrangement

— Prime Directory Number

— Privacy

— Privacy Release

— Release

— 500/2500/SL-1 telephone mix

## Operating parameters

Single line telephones with Private Line Service cannot access Meridian SL-1 features.

All Private Lines must be assigned to trunk route 31 on X11 release 13 and earlier software. A Directory Number (DN) must be assigned to each trunk.

A maximum number of 126 Private Lines are available per customer.

X11 release 14 and later software allow 512 Private Line trunk routes to be defined.

A Private Line should not be assigned as a prime Directory Number (DN) unless preselection is required.

Hunting does not apply to Private Line service.

Call Forward on Private Lines (SL-1 or Meridian digital telephones) is not forwarded to a second appearance of its own DN.

## Feature interactions

Call Modification Features (CMF) in the trunk data block can be inhibited as follows:

- Call Transfer
- Conference
- Call Forward
- Call Forward No Answer
- Message Center
- Call Forward No Answer
  Call Forward No Answer is always inhibited on Private Lines.
- Multiple-appearance
  For multiple appearance calls, call modification cannot be blocked.

## Feature packaging

Private Line Service is included in basic X11 system software.

# Feature implementation

**LD16** – Add or change a Private Line trunk route.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUTE | 0–511 | Route number |
| TKTP | COT | Central Office trunk |
| AUTO | Yes, (No) | Trunks in this route autoterminate |
| ICOG | IAO | Incoming and outgoing route |

**LD14** – Add or change Private Line trunks in the Private Line trunk route.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | COT | Central Office trunk |
| TN | l s c u | Terminal Number |
| XTRK | XUT, XEM | Universal Trunk Card (NT8D14), E&M Trunk Card (NT8D15). Prompted only for superloops and the first unit on the card. |
| PRDN | xxx...x | Private Line phantom DN |
| CMF | Yes, (No) | Call modification is or is not inhibited for private line |

**LD10** – Add or change Private Line Service for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| DN | xxx...x | Private Line DN (xxx...x is the same as for PRDN prompt in LD14) |

**LD11** – Add or change Private Line Service for SL-1 Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx PVN yyy...y | Private Line non-ringing key (yyy...y is the same as for PRDN prompt in LD14) |
| | xx PVR yyy...y | Private Line ringing key (yyy...y is the same as for PRDN prompt in LD14) |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 10 |



# Property Management System Interface

The Property Management System Interface (PMSI) is a full-duplex RS-232 asynchronous data link that allows a Meridian 1 customer with a Property Management System (PMS) computer to exchange a higher level of protocol for the Background Terminal (BGD) features in a hospitality environment.

The Meridian 1 sends formatted messages to the Property Management System (PMS) computer for the following features:

— Controlled Class of Service (CCOS)

— Message Waiting

— Do Not Disturb (DND)

— Room Status (RMS)

— Call Number Information Messages (CMIN)

— Call Party Name Display (CPND)

The system connects to the Property Management System (PMS) computer through a Serial Data Interface (SDI) port. Each character received from the Property Management System Interface (PMSI) data link is treated as if it were entered from a TTY, and each character transmitted to the PMS computer is handled the same way as characters output to a TTY.

## PMSI Standardization

The PMSI Standardization features in X11 release 19 and later provide the Meridian 1 with the following enhancements:

- Message retransmission
- Polling
- Message monitoring

*Note:* Upon loading X11 release 19, these features are not automatically activated. You must go into LD17 to enable these features.

## Message transmission and retransmission

Prior to X11 release 19, the Meridian 1 ignored any response returned by the PMS after sending a room status message to the PMS, and did not attempt to retransmit the message. As a result, the database between the PMS and the Meridian 1 could not be maintained consistently.

With X11 release 19 and later, PMSI Standardization provides the Meridian 1 with the capability to retransmit a message to the PMS. This means that, whenever the Meridian 1 transmits a room message or the new polling message to the PMS, the Meridian 1 will wait for an <ACK> response from the primary PMSI port. If the Meridian 1 receives a <NAK>, or does not receive any response before the predefined response timer expires, the same message will be retransmitted to the primary PMSI port.

## Polling

Prior to X11 release 19, the Meridian 1 did not have the capability to monitor the status of the PMSI link (that is, the link between the Meridian 1 and the PMS).

With X11 release 19 and later, PMSI Standardization provides this monitoring capability by enabling the Meridian 1 to poll the PMSI link at predefined intervals.

### Message monitoring

Prior to X11 release 19, the Meridian 1 did not have the capability to track incoming messages from the PMS or outgoing messages to the PMS.

With X11 release 19 and later, PMSI Standardization provides this tracking capability by enabling these incoming/outgoing messages between the Meridian 1 and the PMS to be displayed on all maintenance (MTC) TTYs on the Meridian 1.

Refer to *Property Management System Interface description* (553-2801-101) for detailed information on PMSI Standardization.

## Operating parameters

Refer to *Property Management System Interface description* (553-2801-101).

## Feature interactions

Refer to *Property Management System Interface description* (553-2801-101).

## Feature packaging

Property Management System Interface (PMSI), package 103, requires:

- Controlled Class of Service (CCOS), package 81
- Room Status (RMS), package 100
- Background Terminal (BGD), package 99

*Note:* PMSI Standardization requires release 19 software.

## Feature implementation

Refer to *Property Management System Interface description* (553-2801-101).

## Feature operation

There is no specific procedure required to operate this feature.

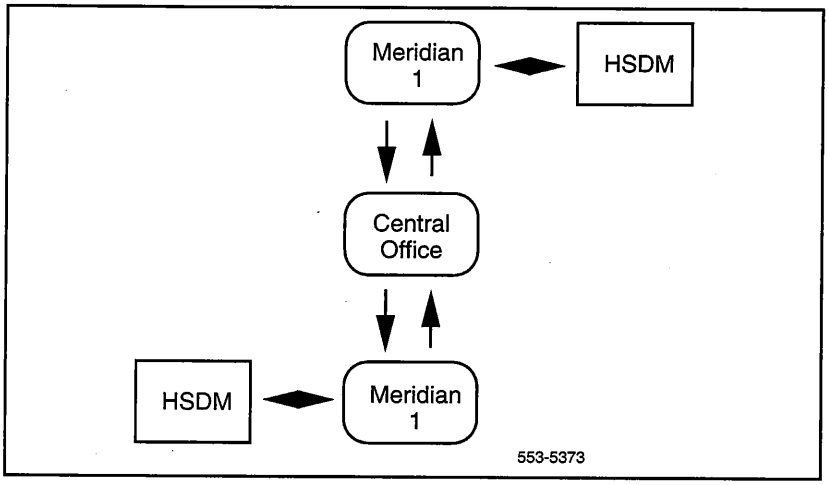
| | |
|---|---|
| Issued: | 93 10 31 |
| Status: | Standard |
| X11 Release: | 19 |



# Public Switched Data Service

The Public Switched Data Service (PSDS) allows you to receive data on your Meridian 1 at 56 kbps over Digital Trunk Interface (DTI) trunks (with X11 release 16 and later), and at 64 kbps over an Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI) channel (with X11 release 18 and later). See Figure 143-1.

**Figure 143-1**
**Public Switched Data Service (PSDS) between Meridian 1 and Central Office (CO)**




You can install a T1 link to different vendors and use the Meridian Communications Adapter (MCA) or QMT21 high speed data module to initiate or receive a 56 kb digital data call. The digital data call then transports across the vendor's digital network to another Meridian 1 or an SL-100.

*Note 1:* Public Switched Data Service (PSDS) requires X11 release 16 or later. The various data modules are supported for different releases.

*Note 2:* The Meridian Communications Adapter (MCA) operates with X11 release 16 and later. The QMT21 module operates with X11 releases 16 and 17.

## Operating parameters

PSDS calls are supported in the following situations:

- an SL-1 and the Central Office (CO)
- a tandem call from an SL-100 to an SL-1
- an SL-1 and other PSDS-compatible switches

The PSDS supports Digital Trunk Interface (DTI)-type trunks, tie and DID/DOD trunks, and Electronic Tie Network (ETN)-compatible signaling.

### End to End DTI network

For all SL-1 networks (Point to Point), users can access the existing data facility in the SL-1 to support data calls, or they can select the Switched 56 data mode. For mixed vendors private networks, users can only select the PSDS mode.

## Feature interactions

ISDN PRI — The following routes are possible using this feature on Primary Rate Access:

- Point to point access
  For point to point access of tie trunks, the software can be modified to handle the requirements of this feature.
- Tandem call
  For tandem access, additional information on this feature is needed, or the data call can be defined as a voice call.
- DID/FEX/WATS/Accunet
  The Meridian 1 supports PSDS data calls to these trunk types.
- Public Network hop off
  Signaling is provided to inform the tandem switch about the PSDS data call.

# Feature packaging

PSDS is included in basic X11 system software.

# Feature implementation

The data selection (DSEL) in the Route Data Block can be defined as voice calls only (VCE), data calls only (DTA), or voice and data calls (VOD). The call can be defined as voice calls, regular data calls, or PSDS calls. Refer to *X11 input/output guide* (553-3001-400) to configure the Route Data Block.

# Feature operation

### Originating data calls

For direct access, dial the regular 7-digit or 10-digit number.

For special route access, dial a route access code after hearing a dial tone.

### Receiving data calls

Calls are answered automatically.

An auto answer call is answered by the data module, and no special operation is necessary.

# Related Features

When using PSDS, you may want to refer to the following features.

## Meridian Communications Adapter (MCA)

The Meridian Communications Adapter MCA operates with X11 release 16 and later and allows asynchronous ASCII terminals, personal computers, and printers to be connected to the telephone using an RS-232-C or V.35 interface. With release 14 and later, the MCA also allows synchronous applications (DTEs such as, video conferencing equipment and Group 1V fax units) to be connected to the telephone. Refer to *Meridian Communications Unit and Meridian Communications Adapter* (553-2731-109) for detailed information on the MCA.

## Meridian Communications Unit (MCU)

The Meridian Communications Unit (MCU) is a release 19 feature that provides a stand-alone version of the Meridian Communications Adapter (MCA).

The Meridian Communications Unit (MCU) allows you to transmit and receive data using either PSDS over the public network or a private network. The MCU, which replaces the QMT21C, is designed for domestic and international use, with transmission speeds up to 19.2 Kbps asynch, and 64 Kpbs synch, integrated display, and self diagnostics. The MCU supports autodialing, ring again, and speed calling, as well as autobauding and automatic parity detection. You can use the MCU for

- Video conferencing
- LAN bridging
- Bulk data/PC file transfer
- Dial back-up
- Host connectivity

The MCU fully complies with RS-232C and can be configured as DCE or DTE to connect to a terminal, printer, or fax machine.

Unlike the MCA, the MCU provides a dedicated call key and call progress tones. The MCU also permits smart modem pooling.

The MCU supports the DM-DM, T-Link, V.25 bis, and PSDS interfaces as well as the RS-232C, CCITT V.35, CCITT V.24, and RS570/RS3449 (with different cables) interfaces. It complies with V.28 for European approval.

Refer to *Meridian Communications Unit and Meridian Communications Adapter description, installation, administration, and operation* (553-2731-109) for detailed information on this feature.

## Transparent Data Networking (TDN)

Transparent Data Networking is an X11 release 19 feature that provides a transparent data channel for data modules to perform end-to-end protocol exchange. This means that two data modules will wait for a circuit path to be established before exchanging protocol parameters.

The data modules and protocols that are supported by TDN are:

- Meridian Communications Adapter (MCA) card in a Meridian Modular telephone (MMT) set. Uses PSDS and T-Link protocols on external calls
- Meridian Communications Unit (MCU) - a stand-alone- version of the MCA. Uses T-Link and PSDS protocols on external calls.
- Basic Rate Interface (BRI) telephones. Use T-Link, V.110, and V.120 protocols.
- High Speed Data Module (HSDM). When configured to use PSDS.

Refer to *Transparent Data Networking* (553-2731-110) for detailed information on TDN.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Recorded Announcement

The Recorded Announcement (RAN) feature allows the Meridian 1 to connect calls automatically to a customer-provided recorded announcement machine. Recorded Announcements can be used for:

— Automatic Call Distribution (ACD)

— Automatic Wake Up

— Intercept Treatment (INTR)

— Recorded Overflow Announcements (ROAs)

The system software detects calls to connect to the Recorded Announcement (RAN) machine, determines the Intercept Treatment required, and connects the call to the proper recorded announcement. The system then monitors the RAN machine.

The Meridian 1 provides the software programs to control the announcement recorder and the circuit packs. Two types of circuit packs can be used:

— Recorded Announcement (RAN) Trunk Cards (QPC74) contain four identical trunk circuits for the interface between the Meridian 1 and the announcement machine. See *QPC74 Recorded Announcement Trunk Card description* (553-2201-194) for engineering information. When using the QPC74, all ports on the card must be dedicated as TYPE RAN or TYPE MUS.

— Universal Trunk Cards (NT8D14AA) contain eight identical trunk circuits that can be configured independently in the system software. See *NT8D14 Universal Trunk Card description* (553-3001-171) for a description.

## Operating parameters

Dial access to RAN trunk groups is allowed and is limited only by Trunk Group Access Restrictions (TGARs).

## Feature interactions

When using the QPC74, all ports on the card must be dedicated as TYPE RAN or TYPE MUS.

## Feature packaging

Recorded Announcement (RAN), package 7, requires:

— Intercept Treatment (INTR), package 11

## Feature implementation

**LD16** – Add or change Recorded Announcement (RAN) trunk route. (Part 1 of 2).

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| TKTP | RAN | RAN trunks |
| RTYP | CAP | Code-a-Phone recording device. Software allows announcements of up to 320 seconds in length in X11 release 14, or 608 seconds in X11 release 15. |
| | AUD | Audichron recording device (required when connecting to a Universal Trunk Card). Software allows announcements of up to 64 seconds. |
| | CK2 | Cook Electric recording device. Software allows announcements of up to 64 seconds. |

**LD16**—Add or change Recorded Announcement (RAN) trunk route. (Part 2 of 2).

| | | |
|---|---|---|
| | DGT | Digital Recorders 213300 & 213400. Software allows announcements of up to 256 seconds on X11 release 15 and later. |
| | CON | NT7M series digital recorders. Software allows announcements of up to 608 seconds on X11 release 15 and later. |
| REP | 1-15 | Number of times the announcement repeats during each connection |
| POST | ATT | Call is routed to attendant after specified number of repetitions (applies to Direct Inward Dial (DID) calls on Intercept) |
| | DIS | RAN is removed after a specified number of repetitions |
| STRT | IMM | Call connects immediately to announcement |
| | DDL | Call connects to announcement at the start of announcement |
| ASUP | Yes, (No) | Supervision is or is not required to inform the Central Office (CO) when the call is answered |
| ACOD | xxx...x | Trunk route access code |
| ***Note:*** All RAN route members must be removed before the route can be removed. | | |

**LD14**—Add or change Recorded Announcement (RAN) trunk.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | RAN | RAN trunk data block |
| TN | l s c u | Terminal Number |
| CUST | 0–99 | Customer Number<br>Prompted if REQ = NEW |
| RTMB | xxx yyy | Route and member number<br>xxx = 0–511<br>yyy = 1–254 |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Recorded Overflow Announcement

Recorded Overflow Announcement (ROA) allows delayed calls to the attendant to be connected to a recorded announcement notifying the calling party of the delay. A second recorded message can also be provided to the calling party repeatedly until an attendant answers the call.

A call that is waiting in the queue receives the first recorded message after the expiration of a timer (T1). After the message is given, the call returns to the attendant queue. While the call is in the waiting state, it can be connected either to Music (MUS), Ringback tone (RGB), or Silence (SIL).

If a second recorded announcement is specified, the call receives the message upon expiration of a second timer (T2). After the second message is given, the call is placed in the attendant queue again. There is no limit to the number of times a call can be given the second recorded message.

## Operating parameters

Recorded Overflow Announcement (ROA) treatment is provided to call types assigned to Incoming Call Indicator (ICI) keys on the attendant console.

A maximum of 20 ICI keys can be assigned to receive Recorded Overflow Announcement (ROA) treatment.

The delay time thresholds for the first and second recorded announcements (T1 and T2) are assigned in LD15. The following thresholds can be defined for these timers.

**Table 145-1**
**Delay time thresholds**

| | Thresholds | | |
|---|---|---|---|
| | **Minimum** | **Default** | **Maximum** |
| T1 | 0 seconds | 20 seconds | 2,044 seconds |
| T2 | 0 seconds | 40 seconds | 2,044 seconds |

Loop start trunks do not provide disconnect supervision and are not recommended for use with the ROA feature. A call on a loop start trunk that is abandoned after the recorded message is given must be manually cleared by the attendant.

ROA is not provided on release link trunks from Centralized Attendant Service (CAS) remote locations.

When the CAS feature is activated at a remote PBX, the ROA feature is inactive at the remote site.

If music is required, the Music (MUS) package must be equipped. Music can be provided after the first and second Recorded Announcement (RAN). A customer provided music source is required, connected through a music trunk. Music is provided to delayed calls through a conference circuit pack in a listen-only mode. The music source provided by the customer must be compatible with the RAN trunk card.

Prior to X11 release 15, Music (MUS) and Recorded Announcement (RAN) cannot share the same trunk card.

Private Lines are not eligible for ROA.

## Feature interactions

ROA is only provided for call types assigned to Incoming Call Indicator (ICI) keys. The following call types are eligible, if related ICI keys are assigned:

- Trunk routes
- LDN 0 through LDN 3
- Dial 0
- Dial 0 Fully Restricted
- Intercept Treatment (INTR)
- Call Forward Busy
- Call Forward No Answer
- Message Waiting (MW)
- Lockout
- Station Category Indication (SCI)
- Night Service
  The ROA feature is inactive when the system is in Night Service.
- Automatic Call Distribution (ACD)
  The RAN route used for ROA may be the same route that is used for ACD and Intercept Treatment.

## Feature packaging

Recorded Overflow Announcement (ROA), package 36, requires:

- Recorded Announcement (RAN), package 7

# Feature implementation

**LD16** – Add or change Recorded Announcement (RAN) trunk route.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| TKTP | RAN | RAN trunks |
| RTYP | CAP | Code-a-Phone recording device |
| | AUD | Audichron recording device (required when connecting to a Universal Trunk Card) |
| | CK2 | Cook Electric recording device |
| | DGT | Digital Recorders 213300 & 213400. Allows announcements of up to 192 seconds on X11 release 15 and later software. |
| | CON | NT7M series digital recorders. Allows announcements of up to 512 seconds on X11 release 15 and later software. |
| REP | 1–15 | Number of times announcement is repeated during each connection |
| POST | ATT | Call is routed to attendant after specified number of repetitions (applies to Direct Inward Dialing (DID) calls on Intercept) |
| | DIS | RAN is removed after specified number of repetitions (call keeps its place in Automatic Call Distribution (ACD) queue) |
| STRT | IMM | Call connects immediately to announcement |
| | DDL | Call connects to announcement at the start of announcement |
| ASUP | Yes (No) | Supervision is or is not required to inform the Central Office (CO) when the call is answered |
| ACOD | xxx...x | Trunk route access code |

***Note:*** All RAN route members must be removed before the route can be removed.

**LD14** – Add or change Recorded Announcement (RAN) trunk.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RAN | RAN trunk data block |
| TN | l s c u | Terminal Number |
| CUST | 0–99 | Customer number |
| RTMB | xxx yyy | Route and member number<br>xxx = 0–511<br>yyy = 1–254 |

**LD15** – Enable a Recorded Announcement (RAN) route for the customer.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer Data Block |
| CUST | 0–99 | Customer number |
| OPT | ROI/(ROX) | Recorded Overflow included (excluded) |
| FRRT | xxx | Route number for the first recorded announcement |
| FRT | 0–(20)–2044 | Time in seconds before the first announcement plays |
| SRRT | xxx | Route number for the second recorded announcement |
| SRT | 0–(40)–2044 | Time in seconds before second announcement plays |
| WAIT | RGB/MUS/SIL | Caller hears Ringback (RGB), Music (MUS), or Silence (SIL) while waiting |
| MURT | xxx | Route Number for Music route if WAIT = MUS |
| RICI | xx . .xx . .xx | Incoming Call Indicator (ICI) key numbers eligible for ROA |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Recorded Telephone Dictation

This feature provides dial access to customer supplied dictation equipment. Operation of the equipment can be either voice- or dial-controlled. The actual controls vary with the type of dictation equipment used.

To access the dictation equipment, the user dials the access code assigned to the dictation route. Access to the route is controlled by Trunk Group Access Restrictions (TGARs).

## Operating parameters

Each recorded dictation unit requires a separate trunk route.

## Feature interactions

There are no feature interactions.

## Feature packaging

Recorded Telephone Dictation is included in basic X11 system software.

## Feature implementation

**LD16** – Add or change a trunk route for the Recorded Telephone Dictation feature.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route Data Block |
| CUST | 0–99 | Customer number |
| ROUT | 0–511 | Route number |
| TKTP | DIC | Recorded Telephone Dictation trunk route |
| ICOG | OGT | Outgoing trunk route |
| ACOD | xxx...x | Directory Number (DN) to dial to access the dictation device |

**LD14** – Add or change a trunk for the Recorded Telephone Dictation feature.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | RDB | Route Data Block |
| TN | l s c u | Terminal Number |
| CUST | 0–99 | Customer number |
| RTMB | rrr mm | Route and member number |
| SIGL | aaa | Trunk signaling |
| STRO | aaa | Outgoing start arrangement |
| SUPN | Yes, (No) | Answer and disconnect supervision required |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 15 |



# Remote Call Forward

Remote Call Forward (RCFW) allows a telephone user to program Call Forward from a remote telephone. With Remote Call Forward (RCFW) enabled, forwarding DNs can be defined and Call Forward All Calls activated from within the Meridian 1 or outside the local switch. The Remote Call Forward (RCFW) feature is password protected.

The Station Control Password (SCPW) is required to program Remote Call Forward. Entering a password length of 0 disables the password control for both Electronic Lock and RCFW.

## Operating parameters

RCFW requires the following:

— set the password length in LD15, at the SCPL prompt

— add passwords in LD10 and LD11, at the SCPW prompt

— allow Call Forward All Calls in LD10 and LD11

— define Remote Call Forward Activate (RCFA), Deactivate (RCFD), and Verify (RCFV) Flexible Feature Codes (FFC) in LD57

To activate RCFW from outside of the local switch, you must use the Direct Inward System Access (DISA) DN. The telephone's Prime DN is associated with the RCFW password for added security. Also, RCFW can activate or deactivate Call Forward on a telephone, and verify the same feature on a telephone.

If there are two telephones with the same Prime DN, it is recommended that only one of them have a Station Control Password. With RCFW, it is possible that two telephones could have the same password assigned. With the same password, they could control each other's security. For the same reason, the Secondary DN for an ACD telephone should not appear as a Prime DN on another telephone.

Changes to the Station Control Password length do not take affect until after a data dump and sysload.

Refer to "Flexible Feature Codes" on page 82-1 for additional information.

## Operating parameters

RCFW is not supported for ACD telephones.

## Feature interactions

Attendant Administration — Attendant Administration does not support the telephone programming associated with Remote Call Forward.

## Feature packaging

The following software packages are required to implement Remote Call Forward:

- Extended PBX Features (OPTF), package 1
- Flexible Feature Codes (FFC), package 139
- Controlled Class of Service (CCOS), package 81

The following software packages are required to implement RCFW on 500/2500 telephones.

- 2500 Telephone Features (SS25), package 18
- 500 Telephone Features (SS5), package 73

# Feature implementation

**LD15** – Set the Station Control Password length.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer Data block |
| CUST | 0-99 | Customer number |
| SCPL | 0-8 | Station control password length (0-8)<br>Entering 0 deletes the password and disables the Remote Call Forward Electronic Lock features<br>***Note:*** A data dump and sysload are required to implement a change in password length. Shorter passwords are filled with leading zeros. Passwords that are too long have the leading digits truncated. |
| FFCS | Yes | Change end of dialing digits in FFC |
| STRL | 1-3 | Number of digits to indicate FFC end of a feature activation |
| STRG | (#),xxx | 1 to 3 digits to indicate FFC end of a feature entry |

**LD57** – Define Remote Call Forward FFCs.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | FFC | Flexible Feature Codes |
| FFCT | Yes, (No) | FFC Confirmation Tone (optional) |
| CODE | RCFA | Remote Call Forward Activate |
| RCFA | xx | xx = RCFA code |
| CODE | RCFD | Remote Call Forward Deactivate |
| RCFD | xx | xx = RCFD code |
| CODE | RCFV | Remote Call Forward Verify |
| RCFV | xx | xx = RCFV code |

**LD10** – Set the Station Control Password for single line telephones and allow Call Forward.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| SCPW | xxx...x | Station control password (0-8 digits as defined by prompt SCPL in LD15) |
| | X | Entering X deletes the password |
| FTR | CFW 4-(16)-23 | Allow Call Forward and set forwarding DN length. |

**LD11** – Set the Station Control Password for SL-1 and Meridian digital telephones and allow Call Forward.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| SCPW | xxx...x | Station control password (0-8 digits as defined by prompt SCPL in LD15) |
| | X | Entering X deletes the password |
| KEY | xx CFW 4-(16)-23 | Assign Call Forward key (xx) and set forwarding DN length. |

## Feature operation

From any telephone within the system, simply lift the handset and use the following procedures. From any telephone outside the system, first dial the Direct Inward System Access (DISA) number for your system, wait for dial tone and dial any required passwords and Authorization Codes.

1 Dial the Remote Call Forward Activate FFC.

2 Dial the Station Control Password for the telephone to be forwarded.

3 Dial the Prime DN of the telephone to be forwarded.

4 Dial the number to which calls will be forwarded.

5 Dial the end-of-entry digits (defined in LD15).

To cancel Remote Call Forward:

1 Dial the Remote Call Forward Deactivate FFC.

2 Dial the Station Control Password for the telephone.

3 Dial the Prime DN of the telephone.

To verify Remote Call Forward:

1 Dial the Remote Call Forward Verify FFC.

2 Dial the Station Control Password for the telephone.

3 Dial the Prime DN of the telephone.

4 Dial the number to which calls will be forwarded.

5 Dial the end-of-entry digit(s).

If the number you are forwarding calls to does not match your entry in step 4, you will hear a fast busy signal. You will hear a confirmation tone after entering the forward number if they do match and confirmation tone is enabled in LD57.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Remote Peripheral Equipment

The Remote Peripheral Equipment (RPE) feature allows the range of the multiplexed loop between common and peripheral equipment to be extended beyond the normal 14 m (50 ft.), to about 100 km (70 miles) using T1 carrier facilities. This carrier system must conform to North American T1 specification to link the local and remote locations, and can consist of the following:

— 24-gauge wire pairs for applications in which the remote end is less than 2500 feet from the Meridian SL-1 common equipment

— A Digital carrier link (such as Northern Telecom LD-1)

— A microwave radio link

The Remote Peripheral Equipment (RPE) feature allows the peripheral equipment to be placed closer to the stations it serves, and increases the serving area of a single system.

Among the benefits are the following:

— Normal attendant operation covering all locations

— Elimination of Tie lines between locations

— Uniform system features

— A fully integrated numbering plan

For details regarding RPE, refer to Northern Telecom Publication *Remote Peripheral Equipment description, installation and testing* (553-2601-200).

## Operating parameters

Refer to *Remote Peripheral Equipment description, installation and testing* (553-2601-200).

## Feature interactions

Refer to *Remote Peripheral Equipment description, installation and testing* (553-2601-200).

## Feature packaging

Remote Peripheral Equipment (RPE), package 15, has no feature package dependencies.

## Feature implementation

If an even-numbered Tone and digit Switch (TFS), (CONF) or (MFSD) loop (0, 48, 72, 150) is equipped, the succeeding odd-numbered loop (1, 49, 73, 151) cannot be assigned as a voice loop.

The Peripheral Buffer card switch must be set for quad density. After changes are made, the system must be initialized to activate the changes to the network loop in the database.

**LD17**—Add or change a voice/RPE loop(s) (Part 1 of 2).

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration data block |
| CEQU | Yes, (No) | Allow changes to common equipment parameters |
| MPED | SD, DD, 4D | Maximum peripheral equipment density |
| TERM | xxx yyy | Single density local terminal loops<br>For nonenhanced networks<br>xxx yyy = 0–79 0–79<br>For enhanced networks<br>xxx yyy = 0–159 0–159 |

**LD17** – Add or change a voice/RPE loop(s) (Part 2 of 2).

| | | |
|---|---|---|
| REMO | xxx yyy | Single density remote terminal loops<br>xxx yyy = 0–79 0–79<br>For enhanced networks<br>xxx yyy = 0–159 0–159 |
| TERD | xxx yyy | Double density local terminal loops<br>For nonenhanced networks<br>xxx yyy = 0–79 0–79<br>For enhanced networks<br>xxx yyy = 0–159 0–159 |
| REMD | xxx yyy | Double density remote terminal loops<br>For nonenhanced networks<br>xxx yyy = 0–79 0–79<br>For enhanced networks<br>xxx yyy = 0–159 0–159 |
| TERQ | xxx yyy | Quad density local terminal loops<br>For nonenhanced networks<br>xxx yyy = 0–79 0–79<br>For enhanced networks<br>xxx yyy = 0–159 0–159 |
| REMQ | xxx yyy | Quad density remote terminal loops<br>For nonenhanced networks<br>xxx yyy = 0–79 0–79<br>For enhanced networks<br>xxx yyy = 0–159 0–159 |

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Ring Again

Ring Again gives you the opportunity, after encountering a busy Directory Number (DN), to ring the DN again when it becomes free. If a dialed DN is busy, or if all the trunks are busy, pressing the Ring Again key asks the system to monitor the dialed DN or trunk. When it becomes available, the system notifies you. The call is automatically dialed again when you press the Ring Again key a second time.

When the system alerts you to ring again, you have a limited amount of time to respond. 500/2500 telephones have 6 seconds, while SL-1 and digital telephones have 30 seconds.

## Operating parameters

A key/lamp pair must be assigned to SL-1 and digital telephones for Ring Again. M3000 and M2317 telephones access Ring Again with a soft key.

Several people can activate Ring Again against the same DN while it is busy. When the DN becomes free, the system notifies the first person in line.

For 500/2500 telephones, a Special Prefix (SPRE) or Flexible Feature Code (FFC) may be used.

## Feature interactions

Basic/Network Alternate Route Selection (BARS/NARS)

If the system is equipped with BARS or NARS, the Ring Again feature is used with the Call Back Queueing option to queue for outgoing trunks.

## Feature packaging

Ring Again is included in Extended PBX Features (OPTF), package 1, and has no feature package dependencies.

## Feature implementation

**LD10**—Add or change Ring Again for single line telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Single line telephone |
| TN | l s c u | Terminal Number |
| CLS | XRA, (XRD) | Ring Again is allowed or denied |

**LD11**—Add or change Ring Again for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx RGA | Ring Again key<br>xx = key number (must be key 27 for M2317 or M3000) |

# Feature operation

Ring Again is slightly different for each telephone type. Be sure to follow the correct operating instructions.

### SL-1 and Meridian digital telephones

To activate Ring Again after hearing a busy signal:

1 Press **Ring Again**.

2 Hang up, or press **RLS**.

3 When you hear the Ring Again tone, lift the handset or select a free **DN**.

4 Press **Ring Again**. The number is automatically dialed.

To cancel Ring Again:

— Press **Ring Again** before you hear the notification tone.

### M3000 Touchphone

To activate Ring Again after hearing a busy signal:

1 Press **Ring Again**.

2 Hang up, or press **RLS**.

3 When you hear the Ring Again tone, lift the handset or select a free **DN**.

4 Touch **Connect**. The number is automatically dialed.

To cancel Ring Again:

— Press **Ring Again** before you hear the notification tone.

### M2317 telephone

To activate Ring Again after hearing a busy signal:

1 Press **RINGAGN**.

2 Hang up, or press **RLS**.

3 When you hear the Ring Again tone, lift the handset or select a free **DN**.

4 Press **Call** . The number is automatically dialed.

To cancel Ring Again:

— Press **Call** before you hear the notification tone.

### Single line telephones

To activate Ring Again after hearing a busy signal:

1 Flash the switchhook or press **LINK**.

2 Dial SPRE+1, or the Flexible Feature Code (FFC) assigned.

3 When you hear the Ring Again tone bursts, lift the handset while you still hear the ringing. The number is automatically dialed.

To cancel Ring Again:

— Before you hear the notification tone, lift the handset and dial SPRE 2, or the FFC assigned, and hang up.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | All |



# Room Status

Room Status allows customers equipped with a Background Terminal (BGD) to store and retrieve data pertinent to the occupancy, readiness, or cleaning status of any guest room or group of guest rooms.

When equipped with the Room Status software, the Meridian 1 system provides the following Room Status information:

— Guest registration and occupancy

| | |
|---|---|
| OC | (occupied) |
| VA | (vacant) |
| CH | (check in) |
| CH OU | (check out) |

— Cleaning status

| | |
|---|---|
| RE | (cleaning required) |
| PR | (cleaning in progress) |
| CL | (room cleaned) |
| FA | (failed inspection) |
| PA | (passed inspection) |
| SK | (cleaning skipped) |

– Sale status

  NS (not for sale)
  SA (ready for sale)

– Other status information

  CCOS (Controlled Class of Service)
  DND (Do Not Disturb)
  MW (Message Waiting)
  CA (Category one – 1 to 15)
  TL (telephone check)

Do Not Disturb (DND) has been enhanced for interaction with Room Status on 500/2500 telephones. A new customer option allows a visual indication of when the 500/2500 telephone is in the DND mode: The lamp on the telephone lights up.

The Room Status feature provides four methods of accessing the Room Status data:

– Off hook detection: Hotel and hospital staff generally clean occupied rooms during certain hours of the day. From a Background Terminal (BGD), an option can be entered to set all occupied rooms to "cleaning status request" mode for a predefined time-of-day interval. During this interval, the Meridian 1 system monitors the room telephone's switchhook state to detect a change in the Room Status.

– Dial Access: This method is an enhancement to the off hook detection method for updating the room cleaning status. This method offers seven cleaning-status options, as compared to the two offered by off hook detection. Again, you allow or deny the dial access method by using the Background Terminal commands.

- Room Status key: A Room Status key (RMK) can be provided on an SL-1, M1109, or Meridian Modular Telephone. This allows the telephone user to read or alter the status of any room in the system.
- Background Terminal: The Room Status feature is administered from a Background Terminal (BGD) assigned to the customer. BGDs are defined in the configuration record and are connected to the Meridian 1 system through a serial data interface (SDI) port. Devices used as BGDs can be any ASCII serial terminal conforming to EIA RS-232-C or CCITT V.24 standards.

## Operating parameters

The Room Status key (RMK) is supported only on telephones equipped with a display.

A room telephone is defined with Controlled Class of Service allowed (CCSA). The following telephones are supported as room phones:

- 500/2500 telephones
- SL-1 and M1309 telephones
- Meridian digital telephones

The M3000, M2317, and ACD telephones are not supported as room phones. Room Status is not supported on telephones with DTA (data terminal allowed) class of service. The RMK is not supported on attendant consoles.

A room phone is allowed to change the status of its own room.

The Room Status feature is mutually exclusive with the AUTOVON, Multiple-Tenant, Centralized Attendant Service (CAS), and Coordinated Dialing Plan (CDP) features.

A message center must be defined for the Do Not Disturb (DND) visual indication function on 500/2500 telephones. This is mutually exclusive of Integrated Messaging System (IMS) and Meridian Mail Message Centers.

All 500/2500 telephones that are to use the Do Not Disturb (DND) visual indication must also have an LPA (Lamp Allowed) Class of Service.

## Feature interactions

- Attendant Administration
  Room Status is not supported by Attendant Administration.
- Automatic Wake Up
  Room Status and Automatic Wake Up both use the Background Terminal (BGD). If the WAKE option is selected for the check-in/check-out operation, then the wake-up call for that room is canceled after a check-in or check-out operation.
- Controlled Class of Service (CCOS)
  You can change the access restrictions for room telephones from the BGD or from a telephone equipped with a Room Status key (RMK).
- Maid ID
  Maid ID is not required but is recommended to track maid performance. The Maid ID must be entered each time the Room Status changes, or it will not be recorded.
- Multiple Tenant
  Telephones equipped with an RMK can change the Controlled Class of Service (CCOS) of telephones for any tenant in a Customer Group.
- Off-Hook Alarm Security
  Cleaning changes entered using the Off-Hook Detection Method are mutually exclusive with the Off-Hook Alarm Security feature.

## Feature packaging

Room Status (RMS), package 100, requires the following:

- Controlled Class of Service (CCOS), package 81
- Background Terminal (BGD), package 99

For lamp status, the requirements are as follows:

- Do Not Disturb, Individual (DNDI), package 9
- Message Center (MWC), package 46

# Feature implementation

*Note:* This procedure assumes that a BGD has been assigned. Refer to *Background Terminal Facility description* (553-2311-316) for a complete description and list of commands for the Background Terminal.

**LD10** – Add or change Controlled Class of Services (CCOS) for 500/2500 telephones requiring Room Status updates.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | CCSA, (CCSD) | Controlled CLS allowed or denied |

**LD11** – Add or change Room Status key (RMK) for digit display telephones used for Room Status.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CLS | ADD | Automatic digit display enabled |
| | DDS | Digit display enabled |
| KEY | xx RMK | Room Status key |

**LD15** – Add or change customer data block to allow (or disallow) visual indication of Do Not Disturb (DND) feature.

Offered on the customer level, this applies only to 500/2500 telephones equipped with a Message Waiting (MW) lamp.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer data block |
| CUST | 0-99 | Customer number |
| DNDL | Yes | Indicator goes on when DND is active |
| | (No) | Default; indicator does not go on |
| CCOS | UNR | Unrestricted call service |
| | CUN, CTD, TLD, SRE, FRE, FR1, FR2 | With CCOS active, the restrictions entered apply |

## Feature operation

To read the Room Status by using the RMK (display needed):

1 Without lifting the handset, press **Status**.

2 Dial the Directory Number (DN) of the room telephone. The DN is displayed, followed by a dash and a two-digit code.

The first digit indicates occupancy: zero (0) means vacant, one (1) means occupied.

The second digit indicates Room Status:

1 = RE (cleaning required)
2 = PR (cleaning in progress)
3 = CL (cleaned)
4 = PA (passed inspection)
5 = FA (failed inspection)
6 = SK (cleaning skipped)
7 = NS (not for sale)

To change the Room Status by using the RMK:

1 Without lifting the handset, press **Status**.

2 Dial the Directory Number (DN) of the room telephone.

3 Dial the new room status as follows:

1 = RE (cleaning required)
2 = PR (cleaning in progress)
3 = CL (cleaned)
4 = PA (passed inspection)
5 = FA (failed inspection)
6 = SK (cleaning skipped)
7 = NS (not for sale)

4 Press **Status**.

To change the Room Status by using Dial Access (from the room telephone):

1 Lift the handset and dial SPRE 86.

2 Dial the room status as shown below:

1 = RE (cleaning required)
2 = PR (cleaning in progress)
3 = CL (cleaned)
4 = PA (passed inspection)
5 = FA (failed inspection)
6 = SK (cleaning skipped)
7 = NS (not for sale)

3 Dial * and the Maid ID followed by #, if required.

4 Hang up or press **RLS**.

*Note:* For complete details on the Room Status operation, see *Background Terminal user guide.*

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



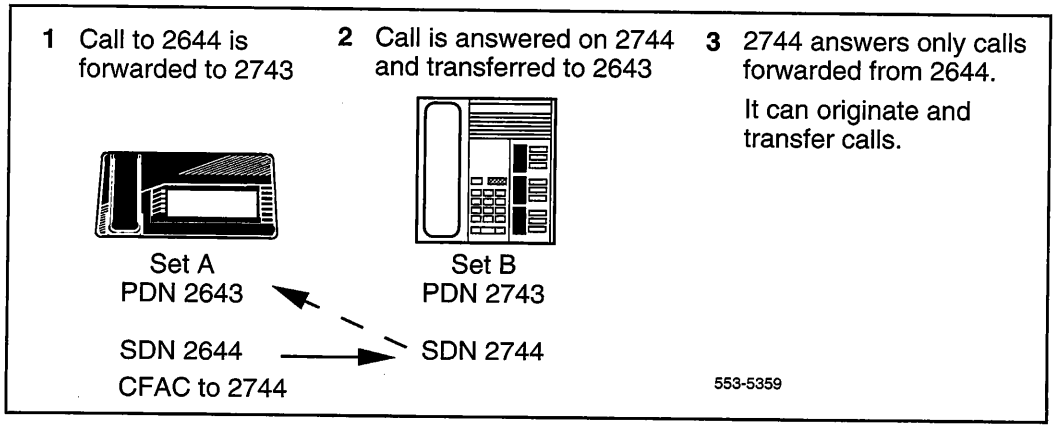
# Secretarial Filtering

Secretarial Filtering is an application of Call Forward All Calls. It allows you to forward all calls to a second telephone. The user at the second telephone answers the forwarded calls and can choose to transfer the call back to you.

In the following example, a manager at DN 2222 forwards all calls to a secretary at DN 3333.

A call placed to DN 2222 is forwarded to the secretary at DN 3333. The secretary answers the calls decides that the manager should take the call, and transfers it back to DN 2222. The secretary can also place calls from DN 3333 to DN 2222. In this example the manager receives only the calls originated or transferred by the secretary.

**Figure 151-1**
**Secretarial Filtering example**



## Operating parameters

Only the Directory Number (DN) designated as the Call Forward number can originate or transfer calls to the originally dialed DN.

All Single Appearance DNs on the forwarded telephone are forwarded to the target DN.

A Multiple Appearance DN on the forwarded telephone is forwarded only if it is a prime DN.

A Multiple Appearance DN that is not the prime DN rings at all appearances, including the forwarded telephone.

## Feature interactions

There are no feature interactions.

## Feature packaging

Secretarial Filtering is included in basic X11 system software. It is provided with Call Forward All Calls.

## Feature implementation

This feature is enabled when Call Forward All Calls is enabled.

## Feature operation

See the feature operation in "Call Forward All Calls" on page 40-1.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 12 |



# Short Buzz for digital telephones

When a call is presented to a digital telephone that is offhook, a buzz tone is given. The duration of this secondary buzz is shortened from 2 seconds to an average of 0.8 seconds, with a minimum length of 0.5 seconds and a maximum length of 1 second.

## Operating parameters

Short Buzz for digital telephones does not apply to SL-1 telephones.

Short Buzz for digital sets does not change the buzz tone given to ACD telephones on the In-calls key.

## Feature interactions

— Group Call
The special three-second buzz for Group Call is not affected by this feature.

## Feature packaging

This capability is included in basic X11 system software.

## Feature implementation

Not applicable.

## Feature operation

Not applicable.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Speed Call

Speed Call allows you to place calls by dialing a one-, two-, or three-digit code. You can use Speed Call for both internal and external calls. To use Speed Call, SL-1 telephones, Meridian digital telephones, and attendant consoles may have a Speed Call key/lamp pair.

500/2500 telephones can activate Speed Call by using Special Prefix (SPRE) or Flexible Feature Codes (FFC).

500/2500 telephones, SL-1 telephones, Meridian digital telephones, and attendant consoles can be designated as a Speed Call Controller (SCC) or a Speed Call User (SCU). SCCs can program the numbers to be stored (Speed Call codes) and can use the Speed Call list. SPUs cannot program Speed Call codes; they can use only the Speed Call lists.

Each stored number is assigned a Speed Call code from the Speed Call list. Each list may contain up to 1000 telephone numbers (entries). The maximum number of digits of the telephone number that can be stored in each entry is specified by the customer. Speed Call entries can be 4, 8, 12, 16, 20, 24, 28, or 31 digits long.

## Operating parameters

You can define up to 255 (0-254) Speed Call lists per system. X11 release 13 and later software allows up to 8191 (0-8190) Speed Call lists per system, as long as sufficient memory is available. The new maximum includes all combined Speed Call, System Speed Call (SSC), and Hot Line lists.

You can have as many Speed Call lists as you have available key/lamp pairs on any SL-1 telephone, Meridian digital telephone, or attendant console. Any number of users can be assigned to a list. 500/2500 telephones can access only one Speed Call list. More than one Speed Call Controller can be assigned to each list, but this is not recommended.

A maximum of 31 digits for the telephone number is allowed per Speed Call list entry. An asterisk (*), which indicates a pause, and an octothorpe (#), which indicates end-of-dialing, may be programmed as part of the entry.

Speed Call list entries can be defined in LD18 or by Speed Call Controllers. Speed Call Controllers must know the digit length (one, two, or three) required for the Speed Call codes in each list.

## Feature interactions

– Last Number Redial
  A number dialed using Speed Call will become the Last Number Redial number on all telephones except the M2317 and M3000.

## Feature packaging

Speed Call is part of Extended PBX features (OPTF), package 1, and has no feature package dependencies.

## Feature implementation

**LD17**—Set maximum number of Speed Call lists.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration Record |
| MSCL | 0-8191 | Maximum number of Speed Call lists (quantity) |

**LD18** – Compute Speed Call list memory size and disk records (X11 release 17).

Use this prompt sequence to determine if there is enough memory and disk records for new Speed Call lists. Compare the output with the MEM AVAIL and DISK AVAIL values output before the REQ prompt.

| | | |
|---|---|---|
| REQ | COMP | Compute disk and memory |
| TYPE | SCL | Speed Call lists |
| NOLS | 1-8191 | Number of lists to be added |
| DNSZ | 4-(16)-31 | Maximum length of DN allowed for Speed Call list |
| SIZE | 1-1000 | Maximum number of entries in Speed Call list |

**LD18** – Add or change a Speed Call list.

| | | |
|---|---|---|
| REQ | NEW, CHG, OUT | Add, change, or remove a Speed Call list |
| TYPE | SCL | Speed Call data block |
| LNSO | 0-8190 | Speed Call list number |
| DNSZ | 4-(16)-31 | Maximum number of digits in a list entry (4, 8, 12, 16, 20, 24, 28, or 31) |
| SIZE | 1-1000 | Maximum number of entries in the Speed Call list |
| WRT | No, (Yes) | Data is correct and list may be updated |
| STOR | xxx | xxx = list entry number (0-9, 00-99, or 000-999) |
| | yy...yy | yy = digits to be stored against the entry (must be equal to or less than DNSZ) |
| WRT | No, (Yes) | Data is correct and list may be updated |

***Note:*** The prompt WRT follows prompts SIZE and STOR, asking you to confirm the correctness of the data just entered. If data is correct, enter Yes or <CR>. A response of No after the SIZE prompt causes all data entered to be ignored. A response of No after the STOR prompt generates a warning message (SCH3213) indicating the data was not stored and must be reentered.

A response of **** aborts the program. Only the last STOR value is lost. All previous values to which WRT was Yes are saved.

In X11 release 17 and later, the following information is output with the WRT prompt, following SIZE:

ADDS: MEM: xxxxx DISK: yy.y

where xxxxx is the amount of protected memory and yy.y is the number of disk records required for the new Speed Call list. Check the MEM AVAIL and DISK REC AVAIL values output before the REQ prompt.

**LD10** – Add or change Speed Call for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| FTR | SCU yyyy | Speed Call User, list number (0-8190) |
| | SCC yyyy | Speed Call Controller, list number (0-8190) |

**LD11** – Assign a Speed Call list to SL-1 and digital telephones.

| REQ | CHG | Change |
|---|---|---|
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx SCU yyyy | System Speed Call User key |
| | xx SCC yyyy | Speed Call Controller key<br>xx = key number<br>yyyy = Speed Call list number (0-8190)<br>***Note:*** M3000 must use key 21. M2317 must use key 0-10 or key 21. |

**LD12** – Assign a Speed Call list to an attendant console.

| REQ | CHG | Change |
|---|---|---|
| TYPE | ATT, 1250, 2250 | Console type |
| TN | l s c u | Terminal Number |
| KEY | xx SCC yyyy | Speed Call Controller<br>xx = key number<br>yyyy = list number (0-8190) |

## Feature operation

To store Speed Call entries from an SL-1, Meridian digital telephone, or attendant console (Controller):

1 Without lifting the handset, press **Speed Call.** The indicator flashes.

2 Dial the Speed Call code (0-999), followed by the phone number it represents.

3 Press **Speed Call.** If the entry is accepted, the indicator goes off. If the entry is not accepted, the indicator continues flashing.

To make a Speed Call from an SL-1, Meridian digital telephone, or attendant console (User):

1 Lift the handset and press **Speed Call** (telephone).

- Select an idle loop key and press **Speed Call** (attendant console).

2 Dial the Speed Call code. The telephone number represented by the Speed Call code is dialed automatically.

To store Speed Call entries from a 500/2500 telephone (Controller):

1 Lift the handset and press octothorpe (#) +2 (2500 telephone) or SPRE+75 (500/2500 telephone).

2 Dial the Speed Call code (0-999), followed by the phone number it represents. If the entry is accepted, you hear silence. If the entry is not accepted, you hear a fast busy tone.

3 Hang up.

Repeat steps one through three for each entry to be stored.

To make a Speed Call (User):

1 Lift the handset and dial #3 (2500 telephone), or SPRE 76 (500/2500 telephone).

2 Dial the Speed Call code (0-999). The telephone number represented by the Speed Call code is dialed automatically.

*Note:* In addition to SPRE codes your system may be equipped with Flexible Feature Codes (FFCs).

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 13 |



# Speed Call/Autodial with Authorization Codes

This feature is an enhancement to the existing Speed Call and Autodial features. It allows a Speed Call entry to contain an authorization code with an associated trunk route or ESN access code and dialed number. The digits stored are recorded in CDR, if equipped, for billing purposes.

The Speed Call entry can be one of the following:

— SPRE + 6 + Authorization Code

— SPRE + 6 + Authorization Code + #

— SPRE + 6 + Authorization Code + # + ESN access code and dialed number

## Operating parameters

Authorization Code Conditionally Last is not supported.

An octothorpe (#) is required as a delimiter after the Authorization Code if an ESN access code and dialed number are stored as part of the Speed Call or Autodial key. If the octothorpe is not entered, the user receives a fast busy tone. The octothorpe is not stored in the CDR record.

If the system initializes before the Authorization Code is recorded by CDR, the record may be lost.

An SL-1 digital display set can display up to 16 digits. Additional digits cause the digits to scroll off the display.

The M3000 set can display up to 29 digits. Additional digits cause the digits to scroll off the display. Only one softkey, key 21, can be programmed for Speed Call.

An M2317 set can display up to 31 digits.

For SL-1 and Meridian digital sets, up to 31 digits per Speed Call entry are allowed.

On digit display sets, Authorization Codes cannot be blocked from being displayed.

There is no validation of the Authorization Code until the Speed Call key is activated.

## Feature interactions

There are no feature interactions.

## Feature packaging

The following packages are required to implement this enhancement:

- Basic Authorization Code (packages 24 and 25) or Network Authorization Code (option 63)
- Autodial/Speed Call (package 1) or System Speed Call (option 34) or Network Speed Call (package 39)

## Feature implementation

An Authorization Code can now be entered as part of a Speed Call list.

## Feature operation

Not applicable.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 19 |



# Speed Call, System

System Speed Call extends the capabilities of Speed Call. In addition to abbreviated dialing, System Speed Call allows a user to temporarily override the telephone's Class of Service, TGAR access restrictions and code restrictions.

500/2500 telephones, SL1 telephones, Meridian digital telephones and attendant consoles can activate System Speed Call by using SPRE or Flexible Feature Codes (FFC).

A 500/2500 telephone can be designated as a System Speed Call User only (not Controller) and can access one System Speed Call list. SL-1 and Meridian digital telephones can be System Speed Call Users (SPRE codes or key access) or Controllers (key access only). Attendant consoles can be System Speed Call Users (dial access only) and System Speed Call Controllers (key access only).

## Operating parameters

Prior to X11 release 13 you can define up to 255 (0-254) System Speed Call lists and regular Speed Call lists can be defined per system. X11 release 13 and later software allows up to 8191 (0-8190) Speed Call lists, as long as sufficient memory is available. The new maximum includes all combined Speed Call, System Speed Call and Hot Line lists, 4096 (0-4095) of which can be System Speed Call lists.

System Speed Call lists may have up to 1000 entries and each entry can be up to 31 digits in length.

Restrictions applied to a telephone are ignored only for the origination of a call made through System Speed Call. Restrictions are applied if any call modification is attempted once the call is established.

System Speed Call lists can only be programmed in LD18 or from telephones or attendant consoles equipped with a System Speed Call Controller key.

Prior to X11 release 19, the craftsperson enters each System or regular Speed Call List individually. X11 release 19 enhances LD 18 so the craftsperson can add or copy up to 100 System and regular Speed Call Lists at a time.

## Feature interactions

- Basic or Network Alternate Route Selection (BARS/NARS)
  If the BARS or NARS package is equipped, an NCOS is assigned to the System Speed Call list. The NCOS associated with the System Speed Call list replaces the NCOS of the telephone if it increases the Facility Restriction Level (FRL) of the user.
- Authorization Code
  If the Basic Authorization Code (BAUT) or Network Authorization Code (NAUT) package is equipped, a Network Class of Service (NCOS) is assigned to the System Speed Call list. The NCOS of the System Speed Call list replaces the NCOS of the Authorization code or Forced Charge Account code if it increases the Facility Restriction Level (FRL) of the code.
- Attendant Administration
  System Speed Call lists may be assigned using Attendant Administration.
- Last Number Redial
  A number dialed using a System Speed Call key becomes the Last Number Redial number on all telephones except the M2317 and M3000. A number dialed using SPRE activated System Speed Call becomes the Last Number Redial number on all telephones. The original class-of-service and NCOS restrictions of the telephone apply when using Last Number Redial.
- Flexible Feature Code (FFC)
  With FFC, a confirmation tone is provided for speedcall store after the EOD (end-of-dial) string is entered.

## Feature packaging

System Speed Call (SSC), package 34, has no feature package dependencies.

# Feature implementation

**LD17** – Set maximum number of Speed Call lists.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration Record |
| MSCL | 0-8190 | Maximum number of Speed Call lists (quantity) |

**LD18** – Compute Speed Call list memory size and disk records (X11 release 17).

Use this prompt sequence to determine if there is enough memory and disk space for new speed call lists. Compare the output with the "MEM AVAIL" and "DISK AVAIL" values output before the REQ prompt.

| | | |
|---|---|---|
| REQ | COMP | Compute disk and memory |
| TYPE | SCL | Speed Call lists |
| NOLS | 1-8190 | Number of lists to be added |
| DNSZ | 4-31 | Maximum length of DN allowed for Speed Call list |
| SIZE | 1-1000 | Maximum number of entries in Speed Call list |

**LD18** – Add or change a System Speed Call list.

| | | |
|---|---|---|
| REQ | NEW, CHG, OUT<br>NEW xx, CPY xx | Add, change, or remove a single speed call list;<br>Add or copy xx lists |
| TYPE | SSC<br>SCL | System Speed Call<br>Speed Call List |
| LSNO | 0-8190<br>xxxx, yyyy | number of list to add;<br>xxxx = number of list to be copied;<br>yyyy = number of list to receive copy |
| NCOS | 0-99 | NCOS to be assigned to calls accessing the list |
| DNSZ | 4-(16)-31 | Maximum number of digits in a list entry (4, 8, 12, 16, 20, 24, 28, or 31) |
| SIZE | 1-1000 | Maximum number of entries in the Speed Call list |
| WRT | No, (Yes) | Data is correct and list may be updated |
| STOR | xxx<br>yy...yy | xxx = list entry number (0-9, 0-99, or 0-999)<br>yy = digits to be stored against the entry (must be equal to or less than DNSZ) |
| WRT | No, (Yes) | Data is correct and list may be updated |

***Note:*** The prompt WRT follows prompts SIZE and STOR asking you to confirm the correctness of the data just entered. If data is correct, enter "Yes" or <CR>. A response of "No" after the SIZE prompt causes all data entered to be ignored. A response of "No" after the STOR prompt generates a warning message (SCH3213) indicating the data was not stored and must be reentered.

A response of "****" aborts the program. Only the last STOR value is lost. All previous values to which WRT was "Yes" are saved.

In X11 release 17 and later, the following information is output with the WRT prompt, following SIZE:

ADDS: MEM: xxxxx DISK: yy.y

Where xxxxx is the amount of protected memory and yy.y is the number of disk records required for the new speed call list. Check the "MEM AVAIL" and "DISK REC AVAIL" values output before the REQ prompt.

**LD10** – Add or change System Speed Call for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| FTR | SSU yyyy | System Speed Call user, list number (0-4095) |

**LD11** – Add or change System Speed Call list for SL-1 and digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| SSU | yyyy | System Speed Call list number (0-4095) for dial access |
| KEY | xx SSU yyyy | System Speed Call user key |
| | xx SSC yyyy | System Speed Call Controller key<br>xx = key number<br>yyyy = System Speed Call list number (0-4095)<br>***Note:*** M2317 and M3000 must use key 21. |

**LD12** – Add or change a System Speed Call list for attendant consoles.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | ATT, 1250, 2250 | Console type |
| TN | l s c u | Terminal Number |
| SSU | yyyy | System Speed Call list number (0-4095) for dial access |
| KEY | xx SSC yyyy | System Speed Call Controller key<br>xx = key number<br>yyyy = System Speed Call list number (0-4095) |

## Feature operation

To store System Speed Call entries from an SL-1, Meridian digital telephone, or attendant console (Controller):

1 Without lifting the handset, press **Speed Call**. The indicator flashes.

2 Dial the Speed Call code (0-999), followed by the phone number it represents.

3 Press **Speed Call**. If the entry is accepted, the indicator goes off. If the entry is not accepted, the indicator remains flashing.

To make a System Speed Call from an SL-1, Meridian digital telephone, or attendant console (User):

1 Lift the handset and dial SPRE 73 or press the System Speed Call key (telephone),

–or–

Select an idle loop key and dial SPRE 73 (attendant console).

2 Dial the Speed Call code.

If the Speed Call number is accepted, the telephone number represented by the Speed Call code is dialed automatically. No confirmation tone is given unless FFC is implemented.

If the Speed Call number is not accepted, a fast busy signal indicates the number was rejected.

To make a System Speed Call from a 500/2500 telephone (User):

1 Lift the handset and dial SPRE 73.

2 Dial the Speed Call code (0-999). The telephone number represented by the Speed Call code is dialed automatically.

*Note:* In addition to SPRE codes your system may be equipped Flexible Feature Codes.

The routine to add a call list aborts under the following conditions:

— trying to add a call list whose number is already in use

— trying to add multiple call lists when there is insufficient memory

Issued: 92 12 31
Status: Standard
X11 Release: 17



# Station Category Indication

The Station Category Indication (SCI) feature allows an attendant to selectively answer internal attendant Directory Number (DN) calls on a priority basis. Stations are assigned a category, with priority indicated by an Incoming Call Indicator (ICI) lamp at each attendant console. Using the answering priority defined in LD15, the attendant gives prompt attention to a call presented at a high-priority ICI lamp by selecting the associated ICI key.

## Operating parameters

A maximum of 7 station categories (1-7) may be assigned.

Calls from SCI 0 stations appear on the dial 0 ICI.

Calls from fully restricted stations appear on the dial 0 fully restricted ICI.

The Station Category Indication (SCI) feature should not be mixed with any other Incoming Call Indicator (ICI) assignment on the same ICI key/lamp pair.

## Feature interactions

— Controlled Class of Service (CCOS)
The CCOS feature has priority over SCI. A station's SCI category is suppressed when CCOS is active, and calls to the attendant DN carry the CCOS class defined in the database.

— Centralized Attendant Service (CAS)
When CAS is active, calls from a remote station to the attendant DN appear on the remote ICI key/lamp pair at the CAS main, regardless of the station SCI category.

# Feature packaging

Station Category Indication (SCI), package 80, has no feature package dependencies.

# Feature implementation

**LD15** – Add or change a Station Category Indication ICI key/lamp pair for attendant consoles.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer data block |
| CUST | 0-99 | Customer number |
| ICI | 0-19 CA1-CA7 | Assign ICI key/lamp pair for SCI |
| ICI | 0-19 DL0 | Dial 0 (calls from telephones in SCI 0) |
| ICI | 0-19 DFO | Full restricted (call from fully restricted telephones) |

**LD10** – Change SCI for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| SCI | 0-7 | SCI number |

**LD11** – Change SCI for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| SCI | 0-7 | SCI number |

# Feature Operation

Not applicable.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 19 |



# Station Specific Authorization Code

Station Specific Authorization Code (SSAU) is available with X11 release 19 and later, and enables the system administrator to control the level of authorization code access on a per telephone basis. SSAU applies to 500/2500 and digital telephones; it does not apply to BRI telephones.

Station Specific Authorization Code provides three levels of authorization code access:

1 AUThcode Unrestricted (AUTU)
An AUTU telephone has no authorization code access limitations. Any authorization code is accepted and processed normally.

2 AUThcode Restricted (AUTR)
An AUTR telephone can enter up to six assigned authorization codes. The authorization code entered must match one of the pre-assigned codes. Any other authorization code will be rejected and the call will not be completed.

3 AUThcode Denied (AUTD)
An AUTD telephone has no access to authorization codes. Any authorization code will be rejected and the call will not be completed.

## Operating parameters

The same authorization code may be assigned to more than one AUTR telephone.

There is cross-checking between Overlays 10 and 11, which define a station specific authorization code, and Overlay 88, which ensures that the user has entered a valid authorization code.

Overlay 88, which is used to delete an existing authorization code, does not check if the authorization code is assigned as a station specific authorization code before the deletion.

The Station Specific Authorization Code feature does not apply when the authorization code is prompted from a tandem node.

## Feature interactions

- Attendant Administration
  Station Specific Authorization Code does not support Attendant Administration.
- Authorization Code
  Users cannot freely enter authorization codes from telephones that have AUTR or AUTD class of service.
- Autodial
  The SSAU feature treats stored autodial numbers as if they were entered at the telephone.
- Speed Call
  The SSAU feature treats stored speed call numbers as if they were entered at the telephone.

## Feature packaging

Station Specific Authorization Code (SSAU) is available as package 229. Basic Authorization Codes (BAUT) (package 25) is a prerequisite.

# Feature implementation

The following entries create the Authorization Code data block:

**LD88** – Create Authorization Code data block (AUB).

| Prompt | Response | Comment |
|---|---|---|
| REQ | NEW | Create |
| TYPE | AUB | Authcode data block |
| CUST | 0-99 | Customer number |
| SPWD | xxxx | Secure data password |
| ALEN | 1-14 | Number of digits in authcodes |
| ACDR | YES, NO | Activate CDR for authcodes |
| RANR | 0-511 | RAN route number for "Authcode Last" prompt (NAUT) |
| CLAS | (0)-115 | Class code value assigned to authcode (NAUT) |
| COS | aaa | Class of Service |
| TGAR | (0)-31 | Trunk Group Access Restrictions |
| NCOS | ())-99 | Network Class of Service |
| AUTO | YES, NO | Automatically generate authcodes |
| _SECR | 0-9999 | Security password (NAUT) |
| _NMBR | 1-9999 | Number of authcodes to be generated |
| _CLAS | (0)-115 | Class code value assigned to authcode (NAUT) |

The following entries create the Authorization Code Table.

**LD88** – Create an Authorization Code Table.

| Prompt | Response | Comment |
|---|---|---|
| REQ | NEW/ | Create |
| TYPE | AUT | Authorization Code Table |
| CUST | 0-99 | Customer numbers |
| SPWD | xxxx | Secure data password |
| CODE | xxxx | Authcode (number of digits must equal ALEN) |
| CLAS | (0)-115 | Class code value assigned to authcode (NAUT) |

The following service changes are required to activate Station Specific Authorization Code.

**LD10/11** – Activate SSAU.

| Prompt | Response | Comment |
|---|---|---|
| REQ | NEW/CHG | Add or modify |
| TYPE | xxxx | Telephone type:<br>500 (500 or 2500)<br>2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000, SL1 |
| CLS | (AUTU),<br>AUTR,<br>AUTD | Authcode unrestricted<br>Authcode restricted<br>Authcode denied |
| MAUT | YES/(NO) | Modify assigned authcodes for this telephone |
| SPWD | xxxx | Correct security password (if one is defined) |
| AUTH | x nnnn | x is in the range of 1-6; nnnn is the assigned authcode (a valid authorization code defined in Overlay 88). |
| | X x | X x deletes an assigned authcode. |

***Note:*** Changing an AUTR telephone to AUTU or AUTD clears all assigned authcode information previously defined for that telephone.

## Feature operation

After an authorization code is entered, the Station Specific Authorization Code feature determines if the set is allowed to use the entered code. If the authorization code is not allowed on that set, the existing invalid authorization code treatment occurs. Otherwise, normal authorization code processing occurs.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Station-to-Station Calling

Station-to-Station Calling allows direct dialing between station users in the same customer group without the assistance of the attendant.

## Operating parameters

There are no feature requirements.

## Feature interactions

— Manual Line Service
If a single line telephone has been assigned a Manual Line Class of Service, the telephone automatically rings the attendant when it goes offhook.

— Private Lines
You must go over the public network to reach a Private Line. The software PRDN is not meant to be dialed directly.

## Feature packaging

Station-to-Station Calling is included in basic X11 system software.

## Feature implementation

Not applicable.

## Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 3 |



# Stored Number Redial

Stored Number Redial (SNR) allows telephones and attendant consoles to store one previously dialed number of 4 to 31 digits for automatic redialing.

Depending on the type of telephone, the number can be stored before a call is placed, during Ringback, while the number is busy, or during an active call. On attendant consoles, the number can be stored only before a call is placed. Stored Number Redial (SNR) is not supported on M2317 telephones, M3000 Touchphones, or 500/2500 telephones serving as Private Lines.

## Operating parameters

When a number is stored, it overwrites any previously stored number.

Storage is limited to one number per single line telephone and one number per SNR key. When a call is established through a Tandem Tie Trunk Network (TTTN), the user is required to pause for dial tone. When you store a number using SNR, automatic redialing may fail because required delays are not added. It is possible to include delays in the outpulsing by dialing the asterisk (*) in the original digit string where dial tone is expected. Each asterisk (*) signifies a 3 second delay in outpulsing.

The 3 second delay is not available from a 500-type telephone.

During the stored Number Redial (SNR) programming mode, if the user attempts to store more digits than the maximum number defined for the telephone or console, SNR programming is canceled and overflow tone is returned. During an active call on an SL-1 or digital telephone, if a user attempts to store more digits than the specified limit, the SNR operation fails, the previously stored number remains unchanged, and a failure indication is not given. The SNR indicator remains off.

For 500/2500 telephones, in order to store a number dialed to a busy DN, the maximum length of the stored number must be at least 5 (see prompt FTR RDL xx in LD10).

## Feature interactions

- Authorization Code, Charge Account, Forced Charge Account
  The Authorization, Charge Account, and Forced Charge Account codes are not stored. To store a code, dial the code prior to using Stored Number Redial to dial the call.
- End-to-End Signaling (EES)
  EES activates after a call to a trunk is established by expiration of the end-of-dial timer. Further digits dialed are not stored by the SNR feature once it is in EES mode.

## Feature packaging

Stored Number Redial (SNR), package 64, has no feature package dependencies.

# Feature implementation

**LD10** – Add or change SNR for single line telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | XFA, (XFD) | Call Transfer allowed |
| FTR | RDL xx | Activate SNR<br>xx is the maximum number of digits that can be stored<br>xx = 4, 8, 12, (16), 20, 24, 28, 31 |

**LD11** – Add or change SNR for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx RDL yy | Add an SNR key<br>xx = key number<br>yy is the maximum number of digits that can be stored<br>yy = 4, 8, 12, (16), 20, 24, 28, 31 |

**LD12** – Add or change SNR for attendant consoles.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | ATT, 1250, 2250 | Console type |
| TN | l s c u | Terminal Number |
| KEY | xx RDL | Add a SNR key |

# Feature operation

## Attendant consoles, SL-1, and digital telephones

To store a number prior to dialing (for attendant consoles, SL-1, and digital telephones):

1 Without lifting the handset, press **Stored No.**

2 Dial the number.

3 Press **Stored No.** again. The number is stored, replacing any previous one.

To store a number during Ringback, while the number is busy, or during an active call (for SL-1 and digital telephones only):

1 Press **Stored No.**

To call a stored number:

1 Press **DN** (SL-1 or digital telephones) or the **Loop** key (consoles).

2 Press **Stored No.** The number is dialed.

## 500/2500 telephones

To store a number prior to dialing:

1 Lift the handset.

2 Dial SPRE 78, or the FFC assigned for SNR.

3 Dial the number to be stored.

4 Hang up. The number is stored, replacing any previous one.

To store a number before a call is placed, during Ringback, while the number is busy, or during an active call:

1 Flash the switchhook or press **LINK**.

2 Dial SPRE 78, or the FFC assigned for SNR.

To call a stored number:

1 Lift the handset.

2 Dial SPRE 79, or the FFC assigned for SNR. The number is dialed.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | All |



# Telephones

There are several different types of telephones you can use in the Meridian 1 system. Regular telephones are compatible with the Meridian 1 system, as well as several special business telephones designed specifically to take advantage of the many features available.

This module provides an overview of the telephones and a description of the basic features and services. Additional information regarding related software features is found in other modules of this document.

> *Note:* "Digital telephones" is used as a generic term and includes the M2000 series telephones, the M2317 telephone, the M3000 Touchphone, and Meridian Modular Telephones.

## 500/2500 type telephones

500/2500 type telephones are regular telephones not normally associated with a business environment, but they are compatible with the Meridian 1 system. The 500 type telephones have a rotary dial. The 2500 type telephones are the basic push-button models, such as the Link and Unity, which do not have feature buttons normally found on business telephones.

Although 500/2500 type telephones do not have feature keys, you can access various system features using Special Prefix (SPRE) codes. SPRE codes are also useful for SL-1 or Meridian digital telephones to access features without using feature keys. Dial the SPRE code (unique to each customer within the system) and then the feature code that applies to the operation you desire. Table 160-1 lists the feature codes available using SPRE.

**Table 160-1**
**Feature codes used with SPRE (Part 1 of 2)**

| Dial SPRE + | Operation performed |
|---|---|
| 1 | Ring Again |
| 2 | Cancel Ring Again |
| 3 | Ringing Number, Call Pickup |
| 4 | TAFAS (Trunk Answer From Any Station) |
| 5 | Charge Account for CDR |
| 6 | Authorization Code Access |
| 70 + ACOD + mmm (Trunk Route Access Code and Member) | Trunk Verification From Station |
| 71 + DN | Call Park, To Park |
| 72 + DN | Call Park, To Retrieve |
| 73 | System Speed Call, To Use |
| 74 | Call Forward activate or cancel (500 type telephones) |
| 75 + Entry Access Code + DN (500 type telephones) | Speed Call, Individual To Program Entry |
| 76 + Entry Access Code (500 type telephones) | Speed Call, Individual To Use Entry |
| 77 | Permanent Hold (500 type telephones) |
| 78 | Stored Number Redial, To Store |
| 79 | Stored Number Redial, To Redial |
| 81 | Automatic Set Relocation |
| 83 | Malicious Call Trace |
| 84 | Integrated Messaging System |

**Table 160-1**
**Feature codes used with SPRE (Part 2 of 2)**

| Dial SPRE + | Operation performed |
|---|---|
| 86 + x (status) | Room Status |
| 86 + 1 | Cleaning Request |
| 86 + 2 | Cleaning In Progress |
| 86 + 3 | Room Cleaned |
| 86 + 4 | Passed Inspection |
| 86 + 5 | Failed Inspection |
| 86 + 6 | Cleaning Skipped |
| 86 + 7 | Not For Sale |
| 87 | Disconnect Trunk,<br>Conference 6 (500/2500 telephones) |
| 89 | Last Number Redial |
| 91 | Access to maintenance programs by Maintenance Telephone |
| 92 | Terminal Diagnostics, telephones and attendant consoles |
| 93 | Conference Circuit Testing |
| 94 | Ringing Number, Group Pickup |
| 95 | Ringing Number, DN Pickup |
| 96 | Centrex Switchhook Flash |
| 97 | Unassigned ACD-PBX telephone Log in/out |
| 98 | Unassigned ACD-PBX telephone Activate/deactivate Not Ready |

**Table 160-2**
**2500 type telephone features (No SPRE code used)**

| | |
|---|---|
| # + 1 + DN | Call Forward |
| # + 2 + Speed Call code + DN | Speed Call, Individual, To Program Entry |
| # + 2 + Speed Call code + * | Speed Call, Individual, To Erase Entry |
| # + 3 + Speed Call code | Speed Call, Individual, To Use Entry |
| # + 4 | Permanent Hold |

## SL-1 telephones

The SL-1 telephone is designed specifically for the Meridian 1 system and allows the user to access many system features. All SL-1 telephones are equipped with a 12-key dial pad, 10 feature keys, and 3 fixed control keys. Table 160-3 summarizes the different models of SL-1 telephones.

**Table 160-3**
**SL-1 telephones**

| Set type | Comments |
|---|---|
| QSU1 | No display. |
| QSU3 | Same as QSU1, with a 16-character display window. |
| QSU6 | Same as QSU1, with two headset or handset jacks. Intended for Automatic Call Distribution (ACD) operations. |
| QSU7 | Same as QSU3, with two headset or handset jacks. Intended for Automatic Call Distribution (ACD) operations. |
| QSU60 | Similar to QSU1, with minor alterations for the U.S. market. |
| QSU61 | Similar to QSU3, with minor alterations for the U.S. market. |
| QSU71 | The Meridian M1109 telephone. Similar to the QSU1, with built-in Handsfree. |

The SL-1 telephone is designed to accommodate various add-on modules to increase its functionality. Table 160-4 lists the modules you can add on to an SL-1 telephone.

**Table 160-4**
**Add-on modules available for SL-1 telephones**

| Add-on module | Description | Comments |
|---|---|---|
| QMT1 | 10 key/lamp strip | Requires additional power |
| QMT2 | 20 key/lamp strip | Requires additional power |
| QMT3 | Lamp Field Array | Requires additional power |
| QKK1 | Handsfree Interface kit | Requires additional power |
| QKK3 | Automatic Handsfree Interface kit | Requires additional power |
| QKK8 | Answerback Interface kit | QSU71 only |
| QKN1 | Headset interface kit | |
| QSAM3 | Group listening switch | Allows caller to be heard through set's loudspeaker |
| QMT15 | Amplified Handset | Requires Current Limiting Kit (P0630408) |
| QKM13 | Light Probe Kit | For sight-impaired users |

## M2000 series digital telephones

M2000 series digital telephones are available on X11 release 7 and later software. They are designed to provide integrated voice and data communication. Use the M2000 Asynchronous Data Option to make data calls. There are three models in the M2000 series:

- M2009 has 9 programmable keys.
- M2018 has 18 programmable keys.
- M2112 has 11 programmable keys and one fixed Handsfree key.

M2000 series digital telephones are not designed for use in an ACD environment.

## M2317 digital telephone

The M2317 digital telephone is available on X11 release 9 and later software. It is equipped with a two-line (40 characters per line) liquid crystal display (LCD) screen and integrated Handsfree. To make data calls, you need an M2000 Asynchronous Data Option.

Five soft, or screen dependent, keys are located beneath the display screen. These keys, when operated, activate the function that the screen above describes as being accessible. Each soft key is associated with a label, seven characters wide, on the display screen immediately above the key.

Soft keys are designated as key numbers 17 through 29. When the M2317 is configured in the system software, certain default features are automatically assigned to the soft keys. Some features cannot be added to the soft keys. See Table 160-5 for a description of soft key feature assignments.

*Note 1:* Key 11 automatically defaults to Handsfree and cannot be assigned. Keys 12 through 16 and key 18 are reserved for future development and cannot be assigned.

*Note 2:* The second appearance of a data DN must be assigned to key 10 on the voice TN, for keypad dialing.

**Table 160-5**
**M2317 soft key feature assignments**

| Key No. | Mnemonic | Feature |
|---|---|---|
| Default feature assignments: | | |
| 11 | | Handsfree/mute |
| 17 | PRK | Call Park |
| 23 | AO6 | Conference 6 |
| 24 | CPN | Calling Party Number |
| 25 | CHG | Charge Account |
| 26 | TRN | Call Transfer |
| 27 | RGA | Ring Again |
| 28 | PRS | Privacy Release |
| 29 | LNG | Language |
| Keys reserved for specific features (programmed in LD11): | | |
| 19 | RNP | Ringing Number Pickup |
| 20 | MWK | Message Waiting |
| 21 | SSU, SSC<br>SCU, SCC | Speed Call or System Speed Call |
| 22 | CFW | Call Forward |
| ***Note:*** Default key assignments are activated only if the feature is part of your software package, the feature is defined for this customer, and the feature is allowed for the telephone. | | |

## M3000 Touchphone

The M3000 Touchphone is available on X11 release 7 and later software. It is a digital, integrated voice/data telephone with a touch sensitive liquid crystal display (LCD) screen and integrated Handsfree. An M3000 Asynchronous Data Option provides data call capability.

All features are displayed on the screen and are accessed by touching the appropriate name on the screen. The M3000 can display a number of online feature descriptions and operating instructions in user-friendly language.

The M3000 has a directory that can store from 150 to 450 numbers (up to 28 digits) and names (up to 15 characters) that you can access by simply touching the screen. You can search the directory or scroll the display up or down, and dial the desired telephone number by touching the name on the screen.

The M3000 Touchphone is not designed for use in an ACD environment.

When the M3000 is configured in the system software, certain default features are automatically assigned to the telephone. Table 160-6 gives information on feature key assignments.

*Note:* The second appearance of a data DN must be assigned to key 17 on the voice TN for keypad dialing.

**Table 160-6**
**M3000 feature key assignments (Part 1 of 2)**

| Key No. | Mnemonic | Feature |
|---|---|---|
| 0 - 5 | SCR | Single Call Ringing |
| | MCR | Multiple Call Ringing |
| | DIG | Dial Intercom Group |
| | PVR | Private Line Ringing |
| | COS | Controlled Class of Service |
| 6-16 | | Reserved for future development |
| 17 | SCR | Second appearance of data DN (if CLS = DTA) |
| 18 | SIG | Manual Signaling (Buzz) |
| 19 | | Reserved for future development |
| 20 | MWK | Message Waiting |
| 21 | SCU<br>SCC<br>SSU<br>SSC | Speed Call User<br>Speed Call Controller<br>System Speed Call User<br>System Speed Call Controller |
| 22 | CFW | Call Forward All Calls |

**Table 160-6**
**M3000 feature key assignments (Part 2 of 2)**

| Key No. | Mnemonic | Feature |
|---|---|---|
| **M3000 Default feature assignments:** | | |
| 23 | AO6 | Conference 6 |
| 24 | CWT | Call Waiting |
| 25 | CHG | Charge Account |
| 26 | TRN | Call Transfer |
| 27 | RGA | Ring Again |
| 28 | PRS | Privacy Release |
| 29 | | Reserved for future development |
| 30 | MSB | Make Set Busy |
| 31 | PRK | Call Park |
| 32 | CPN | Calling Party Number |
| 33 | ARC | Attendant Recall |
| 34 | OVR | Override |
| 35 | AAK | Automatic Answerback |
| 36 | DSP | Display |
| **Features NOT supported by the M3000:** | | |
| | NHC | No Hold Conference |
| | CS | Combined No Hold Conference and Speed Call |
| | DPU | Directed Call Pickup |
| | GRC | Group Call |
| | GPU | Group Number Pickup |
| | VCC | Voice Call |

***Note 1:*** Default key assignments are activated only if the feature is part of your software package, the feature is defined per customer, and the feature is allowed in class of service.

## Meridian Modular Telephones

The Meridian Modular Telephones are available with X11 release 14 and later software. They are designed to provide cost effective integrated voice and data communication capability. These telephones communicate with the Meridian SL-1 and SL-100, using digital transmission over standard twisted-pair wiring. Table 160-7 summarizes the different models of Meridian Modular Telephones.

*Note:* When a modular telephone is equipped with either a display or data option, a PROGRAM key (key 5 for M2006, key 7 for all remaining modular telephones) is automatically assigned to the upper right-hand feature key. This feature provides user control over such display features as screen format, contrast, and language. It also provides user control over such parameters as transmission speed, parity, and terminal mode.

**Table 160-7**
**Meridian Modular Telephones**

| Set type | Programmable keys | Additional comments |
|---|---|---|
| M2006 | 6 | Single-line only |
| M2008 | 8 | Multi-line |
| M2616 | 16 | Programmable Handsfree |
| M2016S | 16 | Telephone Security Group Class II approved |
| M2216ACD-1 | 16 | ACD Display module and two RJ-32 headset jacks |
| M2216ACD-2 | 16 | ACD Display module; one RJ-32 and one PJ-327 headset jacks |

The Meridian Modular Telephones are designed to accommodate various add on modules to increase their functionality. Table 160-8 lists the modules you can add on to a Meridian Modular Telephone.

**Table 160-8**
**Add-on modules for Meridian Modular Telephones**

| | M2006 | M2008 | M2016S | M2616 | M2216ACD-1 | M2216ACD-2 |
|---|---|---|---|---|---|---|
| Display | | x | x | x | Standard | Standard |
| Key Expansion Module | | | x | x | x | x |
| Programmable Data Adapter | x | x | x | x | x | x |
| External alerter interface | x | x | | x | x | x |

***Note:*** In this table, x indicates available add-ons for the telephone listed along the top row.

## M2006

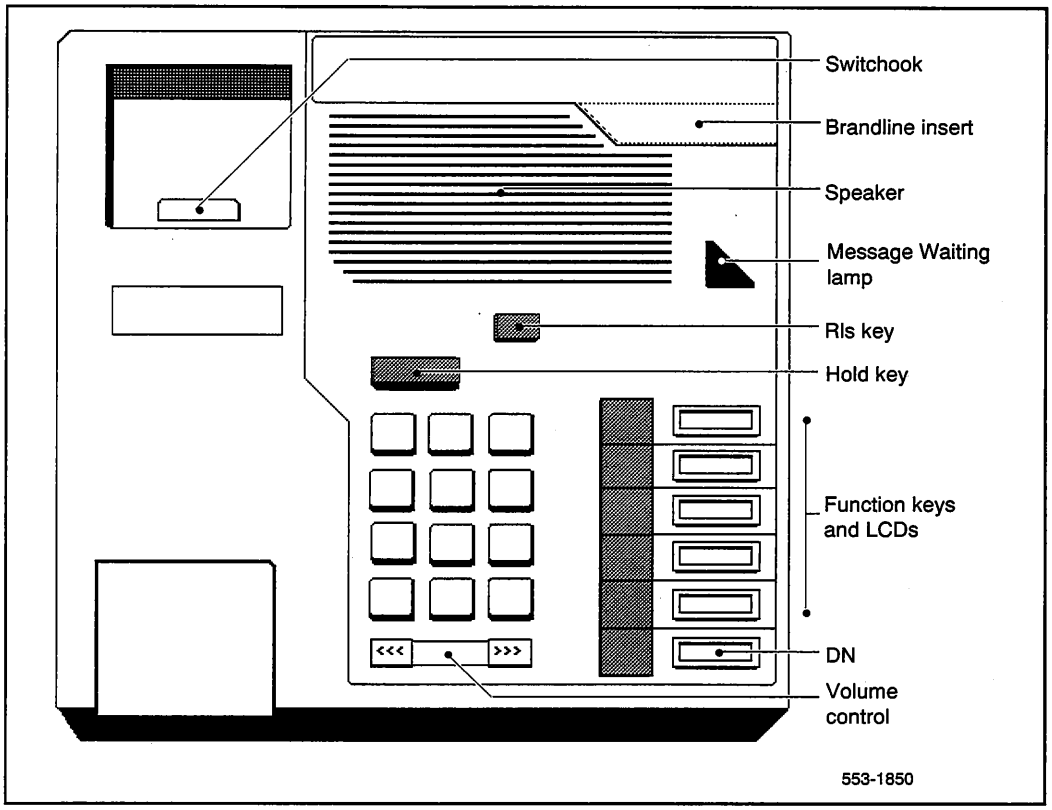
The M2006 is a digital single-line telephone that provides on-hook dialing, volume control, Release, and Hold keys, and a Message Waiting indicator. In addition, it provides four or five programmable feature keys (five if the data option is not in use). It also has a one-way speaker and a programmable data option.

The M2006 may have an optional external alerter interface which connects to any standard remote alerting device.

The M2006 works off any digital line card

Figure 160-1 shows the M2006 telephone.

**Figure 160-1**
**M2006 telephone**



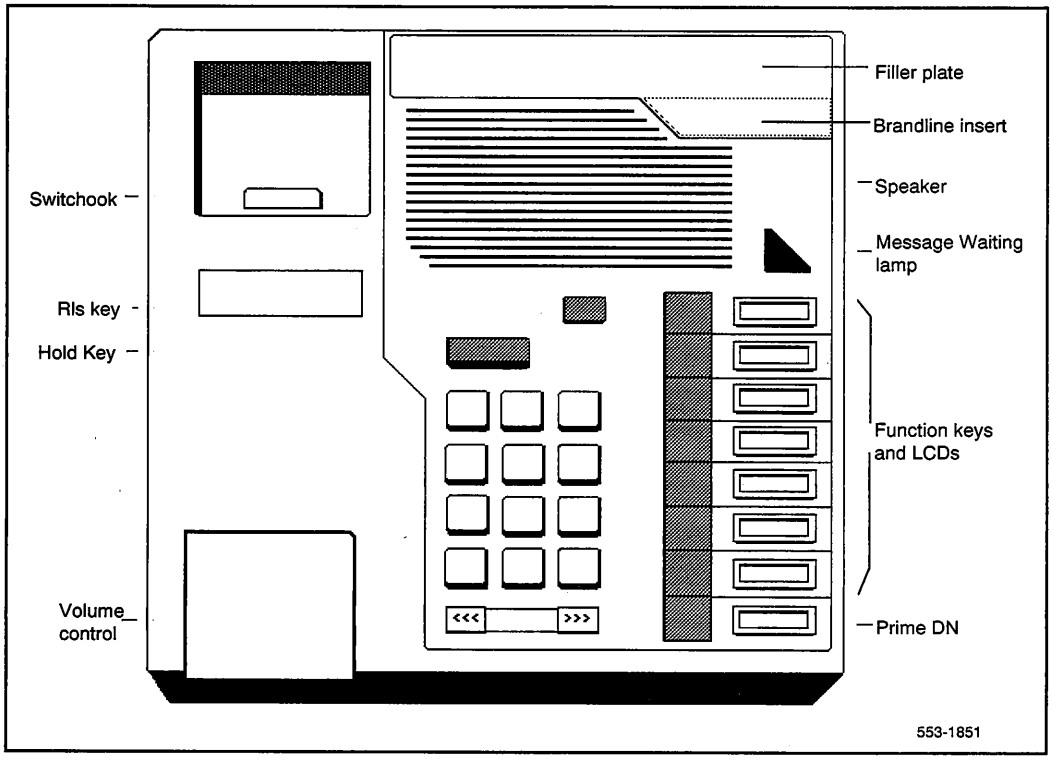
## M2008

The M2008 digital telephone has eight programmable feature/line keys, on-hook dialing, volume control, Release, and Hold keys and a Message Waiting indicator.

The M2008 also supports the programmable data adapter, alphanumeric display, and external alerter interface options.

Figure 160-2 shows the M2008 telephone.

**Figure 160-2**
**M2008 telephone**



## M2616, M2216 (Models 1 and 2)

The 2616 telephone has 16 programmable feature/line keys, on-hook dialing, volume control, Release, and Hold keys, Message Waiting indicator, and handsfree/mute features. It supports up to tow add-on modules of (each of 22 keys), an alphanumeric display option (two lines of 24 characters each), programmable data adapter, and a external alerter interface.

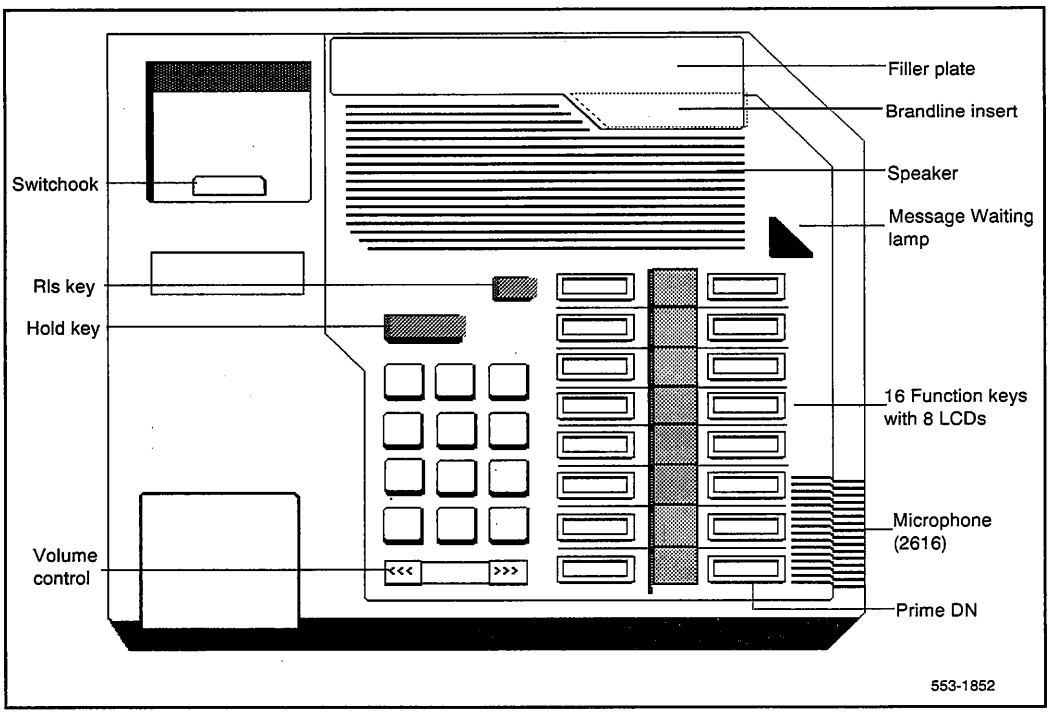
The M2616 Model 1 and the M2216 Model 2 are almost identical to the M2616 with the following exceptions:

- Have no switchhook because they are designed for plug-in handset or headset operation
- Display is standard rather than optional

Model 1 and Model 2 refer to the types of headsets with which the M2216 operates.

Figure 160-3 shows the M2616 telephone.

**Figure 160-3**
**M2616 telephone**



## Related documentation

Refer to the following publications for additional information on telephones and add-on modules.

- *Meridian 1 telephones description and specifications* (553-3001-108)
- *Digital telephone line engineering* (553-2201-180)
- *Telephone and attendant console installation* (553-3001-215)
- *X11 input/output guide* (553-3001-400)

## Operating parameters

Refer to the preceding Northern Telecom publications.

## Feature interactions

Refer to the preceding Northern Telecom publications.

## Feature packaging

500/2500 type and SL-1 telephone capabilities are included in basic X11 system software.

Digital Sets (DSET), package 88, has no feature package dependencies (Meridian M2000 series telephones).

M2317 telephone (DLT2), package 91 requires

- Digital Sets (DSET), package 88

M3000 Touchphone (TSET), package 89 requires

- Digital Sets (DSET), package 88

Meridian Modular Telephones (ARIE), package 170 requires

- Digital Sets (DSET), package 88
- M3000 Touchphone (TSET), package 89

## Feature implementation

**LD10** – Add or change 500/2500 type telephones.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | 500 | Telephone type |
| TN | l s c u | TN location (loop, shelf, card, unit) |
| CDEN | SD, (DD), 4D | Card density (single, double, quad)<br>This prompt appears only if no units on the card have been defined. |
| DES | a...x | Set designator (1-6 characters, alphanumeric) |
| CUST | 0 - xx | Customer number |
| DN | xxx...x | Directory number |
| TGAR | 0 - xx | Trunk Group Access Restriction |
| CLS | aaa | Class of service mnemonics for feature assignment |

**LD11** – Add or change SL-1 and digital telephones.

| | | |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CDEN | SD, DD, 4D | Card density (single, double, quad). Not prompted for octal density.<br>This prompt appears only if no units on the card have been defined.<br>***Note:*** Card density must be 4D if TYPE is not SL-1. |
| DES | a...x | Designator (1 - 6 characters, alphanumeric) |
| CUST | 0-99 | Customer number |
| AOM | (0)-2 | Number of key expansion modules<br>Prompted if TYPE = 2016, 2216 or 2616 |
| KLS | 1-7 | Number of key/lamp strips (SL-1 telephones only) |
| TGAR | 0-xx | Trunk Group Access Restriction |
| CLS | aaa | Class of service mnemonics for feature availability |
| KEY | xx aaa yyy...y | DN and feature key assignment (key number, feature mnemonic, directory number if applicable) |

***Note 1:*** A Message Waiting allowed (MWA) Class of Service must be defined to enable the message waiting lamp.

***Note 2:*** Key 7 (key 5 for M2006) is reserved for the PROGRAM key (M2008, M2016S, M2216ACD, M2616) only if display or data is equipped.

**LD17** – Meridian Modular Telephones related prompts and responses.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration record |
| ATRN | (No), Yes | Change transmission parameters |
| CODE | (0)-2 | CODEC coding law |
| SOLR | (0)-4 | Sidetone Objective Loudness Rating |
| ROLR | (0)-12, 32-50 | Receive Objective Loudness Rating |
| TOLR | (0)-63 | Transmit Objective Loudness Rating |
| ***Note:*** Default settings are recommended. See *Summary of transmission parameters* (553-2201-182) before changing these parameters. | | |

**LD17** – Meridian Modular Telephones related prompts and responses for X11 release 18 and later.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CFN | Configuration record |
| ATRN | (No), Yes | Change transmission parameters |
| CODE | (0)-2 | CODEC coding law |
| SOLR | 0-(1)-4 | Sidetone Objective Loudness Rating |
| ROLR | (0)-63 | Receive Objective Loudness Rating |
| TOLR | (0)-63 | Transmit Objective Loudness Rating |
| AGCD | Yes, (No) | Automatic Gain Control disabled |
| ***Note:*** Default settings are recommended. See *Summary of transmission parameters* (553-2201-182) before changing these parameters. | | |

**LD11** – Add data TN to digital telephones.

| | | |
|---|---|---|
| REQ | NEW | New |
| TYPE | aaaa | Telephone type<br>aaaa = 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| DES | a...x | Set designator (1 -6 characters alphanumeric) |
| CLS | aaa | Class of service mnemonics for feature availability |
| DTYP | IOS | Inbound/outbound data station |
| ADCP | Yes, (No) | All digital connection prefix |
| KEY | xx aaa yyy...y | DN and feature key assignment (key number, feature mnemonic, directory number if applicable). See Note. |

***Note:*** Recommended key assignments for data TN are
Key 0 = DN (for data)
Key 1 = DN (secondary)
Key 2 = TRN (Transfer)
Key 3 = ADL xxxx (Auto Dial directory number)
Key 4 = RGA (Ring Again)
Key 5 = SSC, SCU, SSC, SSU (Speed Call, System Speed Call, controller or user—not available on M2006)
Key 6 = DSP (Display key for M2008, M2016S, M2216ACD, M2616)

**LD11** – Add data TN to SL-1 telephones with data module.

| | | |
|---|---|---|
| REQ | NEW | New |
| TYPE | SL1 | SL-1 telephone |
| TN | l s c u | TN location (loop, shelf, card, unit)<br>Unit number equals the voice TN unit number plus 8 |
| CUST | 0 - xx | Customer number |
| CLS | WTD | Warning tone denied |
| KEY | xx aaa yyy...y | DN and feature key assignment (key number, feature mnemonic, directory number if applicable). See Note. |

***Note:*** Recommended key assignments for data TN are
Key 0 = DN (for data)
Key 1 = DN (secondary)
Key 2 = TRN (Transfer)
Key 3 = ADL xxxx (Auto Dial directory number)
Key 4 = RGA (Ring Again)
Key 6 = SSC, SSU (Speed Call controller or user)
Key 9 = RLS (Release)

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Time and Date

The Time and Date feature provides the capability to display or modify the system time and date from the attendant console. If Display Time or Display Date keys are installed on the console, pressing the respective key causes the time or date to be shown on the digit display. However, these keys only allow information to be displayed, not changed.

The Change Time or Change Date keys allow the attendant to change the time or date. When a change is made, the system clock is altered to the new values. The change keys also allow display of the time or date.

## Operating parameters

The Time and Date feature is available with QCW, M1250, and M2250 consoles.

If the Change Time (MTM) and Change Date (MOT) keys are provided on a console, there is no need to for the Display Time (DTM) and Display Date (DDT) keys because the MTM and MOT keys provide the display capability. DTM and DDT keys are used when the console is only allowed to view, but not change, the time and date.

When using the MTM and MOT keys, the date must be entered in the day, month, and year format; and the time must be entered in the 24-hour clock format. This is true even if the M1250 or M2250 has selected a different date and time format.

The M1250 and M2250 consoles continuously show the time and date on line 1 of the display. The attendant can change the format of time and date by using the Options menu.

The M1250 attendant can also change the date and time by using the Options menu. However, this only changes the time and date on the console and does not change the system clock. The MTM and MOT keys are required to change the system clock.

The date and time are downloaded to the M2250 console from the system clock and cannot be changed by the Options menu. The change time and date keys are required.

## Feature interactions

Loops used when updating time or date cannot be put on hold.

A call cannot be answered while the display/change key is activated; however, the keys can be used once the call is established.

## Feature packaging

Time and Date (TAD), package 8, has no feature package dependencies.

## Feature implementation

**LD12** – Assign Time and Date keys on attendant consoles.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | ATT, 1250, 2250 | Console type |
| TN | l s c u | Terminal Number |
| KEY | xx DDT | Add a Display Date key |
| | xx DTM | Add a Display Time key |
| | xx MOT | Add a Display/Change Date key |
| | xx MTM | Add a Display/Change Time key |
| ***Note:*** The range of key numbers (xx) is 0–19 on the M2250 console, 0-9 on all other consoles. | | |

## Feature operation

To view the Time, press **Display Time (DTM)**.

To view the Date, press **Display Date (DDT)**.

To change the time, follow these steps:

1 Select an idle loop key.

2 Press **Change Time (MTM)**.

3 Enter the time using the 24-hour clock for hours and minutes (00 00).

4 Press **Change Time (MTM)**.

5 Press **RLS**.

To change the date, follow these steps:

1 Select an idle loop key.

2 Press **Change Date (MOT)**.

3 Enter the date using two digits for day, month, and year (dd mm yy).

4 Press **Change Date**.

5 Press **RLS**.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Tones and Cadences

A tone is the frequency and level of the sound produced while the telephone is ringing, providing dial tone or feature activation tones. A cadence defines the time duration for the on and off phases of a ringing or tone cycle.

A set of basic tones and cadences are available on all systems. Flexible Tones and Cadences (FTC) in X11 release 16 allow the tones to be changed.

## Basic Tones and Cadences

### Special dial tone

Special dial tone is supplied by the system to indicate that a request for Call Transfer, Conference, and Ring Again. Special dial tone differs from regular dial tone in that it has three 128 ms interruptions at the beginning of the tone.

### Overflow tone

Overflow tone may be provided on an optional basis to a station user who tries to access a trunk group when all trunks are busy, or who attempts to access features that are unavailable to his or her telephone. Overflow tone is best described as a fast sounding busy signal.

### Tone buzzing

Tone buzzing is used in conjunction with such features as Call Waiting and Manual Signaling (Buzz) to alert the user by a buzz tone through the telephone's loudspeaker. This applies when the telephone is off hook or has a headset plugged in.

# Flexible Tones and Cadences

X11 release 16 introduces the Flexible Tones and Cadences (FTC) feature, allowing the system to adapt to tone specifications of different countries. Tones such as dial, special dial, busy, ringback, overflow, test, normal, and distinctive ringing are hardware controlled from the Tone and Digit Switch (TDS) circuit card (see Table 162-1). Tones such as camp-on, call waiting, intrusion, and override are software controlled, although the basic tone is still coming from the TDS card (see Table 162-2).

The desired cadences for the software controlled tones are defined by providing the system with the time length of the ON and OFF phases. Software also controls ringing for the 500/2500 telephones, although the voltage is supplied by the ring generator card.

The tone data is stored in tables. Every customer and route must select which tone table to use. Table 0 is filled in with default hexadecimal codes when the first customer is created and must not be changed.

All data related to the flexible tones is kept in isolated areas called flexible tone tables. Software Cadence tones and Master Cadence tables have an index into the MCAD table for its corresponding software cadence.

Most of the cadences are expressed in multiples of 5 ms. Therefore, in addition to the existing 128 ms timing mark, a 96 ms timing mark is introduced by a new read only memory (ROM) pack with new firmware.

Refer to *Flexible Tone and Digit Switch cards description* (553-2711-180) for complete details.

## Feature interactions

A customer option determines whether the cadence will be defined by the originating or by the terminating end of the call.

- Audible Reminder of Held Call
  This feature allows for a definable cadence as a reminder of a held call. With a 500/2500 telephone, the cadence is determined by the customer's Flexible Tones and Cadence (FTC) table for the holding party. Ringing on a 500/2500 telephone is not affected by definitions for the Incoming Route option. The cadence for the reminder, and the duration between reminder rings, is always defined within the customer's tone table.

- Call Park Recall and Group Call Ring
  Recall Ring and Group Call Ring will be given special entries in the FTC table. New entries will be added to the FTC overlay (LD56) to define the cadence for SL-1, digital, and 500/2500 telephones. The new Recall Ring entry will be used to ring a telephone when recalling a Parked Call.
- Ringing Based on Incoming Route
  Enhanced Flexible Tones and Cadences (EFTC) allows the route's tone table to determine the cadence and ringing frequency for incoming calls.
- 10-Phase Cadence
  Programming of software controlled cadences expands with EFTC from 4 intervals to 10, offering greater versatility with the cadences and cadence phases. This affects all cadences under software control.

### Operating parameters

The tones that can be produced are limited to which tones are available on the particular TDS card being used.

Gradual level change is not allowed when a tone is activated.

If the Distinctive Ringing package is equipped, and a trunk route is classmarked for that feature, the cadence chosen for each call comes from the same tone table as for a normal call. The Distinctive Ringing field determines the cadences.

If a parked call was originally distinctive, and FTC is equipped, then the Call Park Recall cadence takes precedence. If FTC is not equipped, then the distinctive precedence ringing is given.

Because Enhanced Flexible Tones and Cadences (EFTC) is an enhancement of Flexible Tones and Cadences (FTC), the FTC package must be equipped.

## Feature packaging

Flexible Tones and Cadences (FTC), package 125, has no feature package dependencies.

# Feature implementation

Refer to *Flexible Tone and Digit Switch cards description* (553-2711-180).

**Table 162-1**
**Hardware controlled tones (Part 1 of 2)**

| Tone | Description |
|---|---|
| Dial tone | Indicates the system can accept dialing. |
| Message Waiting dial tone | Indicates a message is waiting at the message center. |
| Call Forward dial tone | Indicates that the user has call forwarded the phone. |
| Call Forward Message Waiting dial tone | Indicates that the user has call forwarded the phone and a message is waiting at the message center. |
| Control Dial tone | Used for broker service to indicate a control digit is required after the switchhook (only for 2500-type telephones with Digitone class of service). |
| Busy tone | Indicates that the called DN is busy. |
| Ringback tone | Given to the calling party while the called party is ringing. Also given to CO trunks waiting for the DN to answer. |
| ACD RGA Ringback tone | Given to a caller to an ACD group when entering the waiting call queue and having RGA (Ring Again). |
| Overflow tone | Indicates that the trunk route is busy, or the DN is blocked, disabled, or that a not-allowed action has been carried out. |
| LDN tone | Indicates to a CAS attendant that the incoming call is a Listed DN (LDN) call from a remote site. |
| Camp-On tone | Provided as an initial burst when the attendant extends a call to a busy DN that is not equipped with the Call Waiting feature. |
| Camp-On Confirm tone | Confirms to a CAS attendant that a call to a busy DN at remote site has camped on, or that the called DN has not answered after a specified time and the calling party has come back. |

**Table 162-1**
**Hardware controlled tones (Part 2 of 2)**

| Tone | Description |
|---|---|
| Dial "0" Recall tone | Indicates to a CAS attendant that a call is a recall occurring due to attendant recall or call forward busy to attendant from remote site. |
| Hold Confirm tone | Indicates to a CAS attendant that a call placed on silent hold has timed out and is recalling. |
| Test tone | Provided during testing of trunk circuits. |
| Distinctive Ring tone | Used to differentiate between routes. |
| Normal Ring tone | Provided for internal calls and incoming calls if distinctive ringing or precedence ringing is not in use. |

**Table 162-2**
**Software controlled tones**

| Tone | Description |
|---|---|
| Agent Observe tone | Given to an agent being observed by a supervisor |
| Call Waiting tone | Indicates to a busy station that another call is coming in. |
| Intrusion tone | Provided when the attendant initiates the Barge-In, Busy Verify, or Break-In feature. |
| Override tone | Provided when a user operates the Override key and enters the conversation of a busy extension. |
| Observe Blocking tone | Given to the supervisor who encounters blocking while attempting to observe an agent. |
| Off Hook Queuing tone | Given to the call originator when the call enters the off-hook queue. |
| Set Relocate tone | Given after all information needed to relocate the phone is given and proven to be correct. Also given to indicate all is correct after plugging the phone back in at the relocated Terminal Number (TN) |
| Telset Messaging Alert tone | Indicates to caller that telset messaging facilities have been entered. |
| Telset Messaging OK tone | Indicates to caller that the message has been received correctly and everything is fine. |
| Tel Status Update tone | Indicates a successful status update process. |
| Special Dial tone | Indicates the availability of a special function such as Conference, Transfer, etc. |
| Expensive Route Warning tone | When Automatic Route Selection is in use, indicates that all inexpensive routes are busy and an expensive route must be chosen to complete the call. |
| ACD Call Force tone | Indicates to the ACD agent that the current call has been disconnected and a new caller is about to be given to the agent. |

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 14 |



# Tones, Flexible Incoming

When a telephone is off hook, the user is alerted to a second incoming call by a buzz tone. Flexible Incoming Tones (FIT) allows the replacement of the standard buzz tone with a buzz with an on/off cadence. This feature is defined on an individual telephone basis.

When a call is presented to a telephone in any of the following situations, a tone with a special cadence alerts the user:

— Call on DN key while busy on another DN

— Call to a station that is off hook

— Call Park recall when station is busy on another DN

— Call on Group Call key while busy on another call

— Call Waiting

— Call on Dial Intercom key while busy on another call

The buzz cadence is the same as the ringing cadence that applies to a particular kind of call. For example, if a user receives a call that is a Group Call, FIT alerts users with a buzz cadence unique to group calls. If the user receives a call on the Call Waiting key, FIT provides a buzz cadence signifying call waiting.

## Operating parameters

Flexible Incoming Tones applies only to SL-1 and Meridian digital telephones.

Flexible Incoming Tones does not apply to the following:

- ACD call forcing
- ACD agent receiving a call on ASP key
- ACD supervisor receiving a call on AMG key
- Manual signaling
- Signal Source activated by an attendant console
- Ring Again

Digital telephones in Handsfree mode receive the regular buzz, even if FIT is enabled.

The telephone buzzes with a cadence only if the customer and telephone options are activated. If either option is off, the telephone receives the standard buzz.

## Feature interactions

- ACD
  If an ACD agent telephone has FIT allowed and is either off hook in the handset mode, or has the headset plugged in, the agent receives a buzz cadence when a new call is presented. If FIT is not allowed, the agent telephone receives the standard buzz tone.
- Dial Intercom Groups
  For Dial Intercom Group (DIG) calls with the voice (V) option, if the telephone receiving the call is busy, the user hears one buzz followed by a flashing indicator. This is how DIG works with or without FIT.

## Feature packaging

This capability is included in basic X11 system software.

# Feature implementation

**LD15** – Allow or deny Flexible Incoming Tones (FIT) at the customer level.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer Data Block |
| CUST | 0–99 | Customer number |
| OPT | SBA, (SBD) | FIT allowed (denied) for SL-1 sets |
| | DBA, (DBD) | FIT allowed (denied) for Meridian digital telephones |

**LD11** – Allow or deny Flexible Incoming Tones for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CLS | FITA, (FITD) | FIT allowed (denied) |

# Feature operation

There is no specific procedure required to operate this feature.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | 9.32 |



# Trunk Verification from a Station

Trunk Verification from a Station (TVS) provides the capability for a classmarked 2500 type telephone to seize a particular trunk within a trunk group, receive a dial tone, and outpulse digits to complete a call to a remote maintenance site. This feature is used as part of a PC-based Network Management system to allow physical testing of each trunk in the network.

Any compatible, customer provided PC-based PBX administration and maintenance system accesses the trunk to be tested and calls a remotely located customer provided responder. The responder supplies the various tones needed to perform the trunk test. The PC then stores and processes the results. Once the testing is complete, the PC disconnects from the tested trunk and accesses the next trunk in the route.

To the system, the PC appears as a 2500 type telephone which requires the capability to seize a particular trunk member within a trunk route.

## Operating parameters

It is recommended that the telephone with a Trunk Verification Allowed (TVA) class of service also have CFW All Calls To External DN Denied (CXFD), CFW Busy Denied (FBD), and CFW No Answer Denied (FND) class of service. This setup prevents any restricted telephone from accessing trunks by calling the TVA telephone and subsequently getting transferred or forwarded.

Also, it is strongly recommended that this unit not be configured with an LPA. This will prevent the unit from initiating the PBXT (test message waiting lamps) command in LD32.

The telephone with a Trunk Verification Allowed (TVA) class of service should also be assigned Warning Tone Denied (WTD) class of service. This will prevent Attendant Busy Verification, which could impair the trunk frequency measurements that take place during a TVS call. This also prevents the trunk that this telephone has seized from being barged into by the attendant.

## Feature packaging

Trunk Verification from a Station (TVS), package 110, has no feature package dependencies.

## Feature interactions

The environment in which the TVS feature will be invoked is a machine environment. That is, the user of the 2500 type telephone with this feature will usually be a PC-based maintenance system. Therefore, minimal interaction exists with other features.

When the 2500 type telephone with a TVA class of service makes a TVS call, any Trunk Group Access Restrictions/Trunk Access Restriction Groups (TGAR/TARG) restrictions defined in the system are removed for this call.

When a trunk group is busied out by an Attendant console, access to that trunk group is not allowed with the TVS feature.

## Feature implementation

**LD10** – Allow or deny Trunk Verification from a 2500 telephone.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | TVA, (TVD) | Allow (Deny) TVS |
| | DTN | Digitone service is required for 2500 telephones |

## Feature operation

To verify that a trunk is working properly (from a 2500 telephone with TVA Class of Service), follow these steps:

1 Lift the handset.

2 Dial SPRE + 70 + ACOD + mmm

where:

| | |
|---|---|
| SPRE | is the special function access prefix |
| 70 | is the special access code for the TVS feature |
| ACOD | is the access code of the trunk group to be tested |
| mmm | is the number of the trunk member that is to be seized, mmm must be three digits (001, for example) |

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# Uninterrupted Line Connections

Uninterrupted Line Connections are connections assigned Warning Tone Denied (WTD) Class of Service. The feature prohibits the imposition of any camp-on or intrusion tones on that line.

This feature is recommended for modem or data lines.

## Operating parameters

There are no feature requirements.

## Feature interactions

— Barge-In, Busy Verify, and Override
These features cannot be applied to stations with a WTD class of service.

— Camp On
A call can be camped-on to a station with a WTD class of service, but tone is not provided.

## Feature packaging

This capability is included in basic X11 system software.

# Feature implementation

**LD10** – Assign Warning Tone Allowed for 500/2500 telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | WTD, (WTA) | Warning tone denied (allowed) |

**LD11** – Assign Warning Tone Allowed for SL-1 and Meridian digital telephones.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| CLS | WTD, (WTA) | Warning tone denied (allowed) |

**LD14** – Assign Warning Tone Allowed for trunks.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaa | Trunk type<br>aaa = ADM, AID, ATVN, AWR, CAA, CAM, COT, CSA, DIC, DID, FEX, ISA, MDM, MUS, PAG, RAN, RCD, RLM, RLR, TIE, WAT |
| TN | l s c u | Terminal Number |
| CLS | WTD, (WTA) | Warning tone denied (allowed) |

# Feature operation

No procedure is required for this feature to operate.

# User Selectable Call Redirection

X11 release 19 and later includes User Selectable Call Redirection (USCR), which enhances the implementation of several existing features. First, it enables the user to modify DNs at the telephone for the following redirections:

— Flexible Call Forward No Answer DN (FDN)

— Hunt DN (HUNT)

— External Flexible Call Forward No Answer DN (EFD)

— External Hunt DN (EHT)

The Station Control Password feature must be active, with passwords defined in LD15, for the user to change these redirection DNs.

Second, it expands the number of selectable Ringing Cycle Options (RCOs) for Flexible Call Forward No Answer (CFNA) from one to three.

## User assignment of redirection DNs

Prior to X11 release 19, changing the redirection DNs for FDN, HUNT, EFD, and EHT required a service change to LDs 10 and 11. USCR permits the user to modify any of these four numbers from a rotary, pushbutton, or digital telephone.

Depending on the type of telephone, there are three ways to access this feature: using a Special Service Prefix Code (SPRE 9915), a Flexible Feature Code (FFC), or the User Selectable Redirection (USR) key. The USR key is available only on digital telephones.

The user can also change the RCO from a telephone after accessing USCR. For security reasons, the user must enter the Station Control Password (SCPW) before changing the redirection DNs or the RCO.

## Ringing Cycle Options (RCOs) for CFNA

The original implementation of Call Forward No Answer provided a single option (CFNA in LD15) that defined the number of normal ringing cycles before CFNA treatment. The value could be in the range of 1-15, with a default of 4. This value determined how many times the telephone rang before CFNA treatment was initiated.

The CFNA prompt is now replaced with prompts CFN0, CFN1, and CFN2, each of whose value can be in the range of 1-15, with a default of 4. The number of distinctive ringing cycles for CFNA is also expanded. The DFNA prompt in LD15 is replaced with DFN0, DFN1, and DFN2, with the same value range and default.

Additionally, the Ringing Cycle Option (RCO) prompt appears in LD10 and 11 for each telephone. Its value, in the range of 0-2, is a pointer to the CFNx and DFNx entries in the Customer Data Block. The following chart explains the relationship of RCO value and the CFNx and DFNx entries in the Customer Data Block.

**Table 166-1**
**Relationship between RCO Value and CFNx, DFNx Contents**

| An RCO value (per telephone) of | Selects these CFNA and DFNA entries (with sample contents shown) | And has this effect |
|---|---|---|
| 0 | **CFN0 (Default value of 4)**<br>**DFN0 (Value set to 2)** | CFNA treatment after 4 rings<br>CFNA treatment after 2 distinctive rings |
| 1 | **CFN1 (Value set to 6)**<br>**DFN1 (Value set to 5)** | CFNA treatment after 6 rings<br>CFNA treatment after 5 distinctive rings |
| 2 | **CFN2 (Value set to 3**<br>**DFN2 (Default value of 4)** | CFNA treatment after 3 rings<br>CFNA treatment after 4 distinctive rings |

## Operating parameters

To assign or print the RCO for a telephone requires that it have the Flexible Call Forward No Answer Allowed (FNA) Class of Service or Message Waiting Allowed (MWA) Class of Service.

The user's telephone must have User Selectable Redirection Allowed (USRA) class of service and a Station Control Password (SCPW). The user must enter the correct password to access USCR.

BRI telephones do not support USCR because they cannot access SPRE or FFC, and have no feature keys. Therefore BRI telephones will always use the entries for CFN0 and DFN0.

The user cannot use USCR to initially configure call redirection features. The features must be equipped, and the initial call redirection DNs must be established, via a service change.

This feature cannot be used remotely. A user can only change redirection DNs or the RCO for the telephone being used to access USCR.

## Feature interactions

- Autodial
  USCR does not support Autodial; it cannot be used to dial all or part of the digits for USCR programming.
- Attendant Administration
  Attendant Administration does not support assigning the USR key, RCO, or USRA/USRD Class of Service.
- Call Forward All Calls
  When CFW redirects a call from telephone A to telephone B, and telephone B does not answer, the RCO of telephone B determines how long it rings. After the designated number of rings, the FDN of telephone A redirects the call.
- Call Forward by Call Type (CFCT)
  USCR enables a user to assign EFD from the telephone.

- Call Forward No Answer/ Flexible Call Forward No Answer
  In X11 release 19 and later, the single parameters previously used to define normal ringing cycles (CFNA) and distinctive ringing cycles (DFNA) are expanded to three (CFN0-2 and DFN0-2), with the Ringing Cycle Options (RCO) parameter used to select the specific CFNA and DFNA entries for each telephone.

- Call Forward No Answer, Second Level (SFA)
  The number of ringing cycles before SFA is determined by the RCO for the ringing DN, as with CFNA.

- Dial Access to Features and Services
  The 9915 feature code accesses USCR from a 500/2500 or a digital telephone. The user dials this code after dialing the SPRE.

- Distinctive/New Distinctive Ringing
  The single parameter previously used to define distinctive ringing cycles (DFNA) is expanded to three (DFN0-2), with the Ringing Cycle Options (RCO) parameter used to select the specific DFNA entry for each telephone.

- Enhanced Hot Line and Flexible Hot Line
  A 500/2500-type telephone with a hot line feature cannot use USCR because it cannot access any features through SPRE or FFC.

- Hunting
  USCR permits a user to alter the HUNT DNs or EHT from a telephone.

- Message Center (MC) and Message Waiting
  USCR affects the number of times the DN rings before the call is forwarded to the Message Center. The RCO in the TN block of the MARP for the called DN determines the number of times the DN rings.

- Multiple Appearance Redirection Prime (MARP)
  When a multiple appearance DN is rung, the determination of the number of ringing cycles for CFNA depends on the value of the MARP prompt in LD17. If the value is "YES", the number of ringing cycles is determined by the RCO number of the DN that is classified as a MARP TN. If the DN is a Multiple Appearance DN (MADN), the RCO values in the other TN blocks for that DN are ignored.

  If the MARP value is "NO", the RCO is taken from the first TN in the DN block with a primary appearance of the DN. If none, then the last TN in the DN block is used.

- Pretranslation
  If Pretranslation (package 92)is enabled, the digits entered as the redirection DN are pretranslated before they are stored. Note that no pretranslation occurs when the redirection DNS are used in such call processing features as Hunting or CFNA, eliminating the possibility that the redirection DN is pretranslated twice.
- Short Hunting
  USCR does not support changing the HUNT or EHT for a telephone with short hunt enabled. USCR also does not support entering '000' from a telephone as the HUNT.
- Speedcall
  Speedcall is not supported by USCR.

## Feature packaging

User Selectable Call Redirection is available as part of X11 release 19. Flexible Feature Codes (FFC) (package 139) is a prerequisite for the user activation part of this feature because it provides for the Station Control Password.

# Feature implementation

Responses to the LD prompts shown in the following tables set up USCR. Responses differ depending on the type of telephone and the type of access being set up.

**LD10** – Setting up USCR for 500/2500 telephones

| Prompt | Response | Comments |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | 500 | Type of telephone |
| RCO | (0), 1, 2 | Ringing Cycle Option for CFNA, in the range of 0-2, with a default of 0 |
| SCPW | xxx...xx | Station Control Password |
| CLS | USRA, (USRD) | User Selectable Redirection class of service (permitting SPRE and FFC access) allowed or denied |
| ***Note:*** The craftsperson can use easy change to change the RCO and USRA/USRD CLS. At the ITEM prompt, type RCO <value> where value is 0-2. | | |

**LD11** – Setting up USCR for digital telephones

| Prompt | Response | Comments |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | xxxx | Type of telephone: SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| RCO | (0), 1, 2 | Ringing Cycle Option for CFNA, in the range of 0-2, with a default of 0 |
| SCPW | xxx...xx | Station Control Password |
| CLS | USRA, (USRD) | User Selectable Redirection class of service (permitting SPRE, FFC, and USR key access) allowed or denied |
| KEY | xx USR | Key number of the USR key |
| ***Note:*** The craftsperson can use easy change to change the RCO and USRA/USRD CLS. At the ITEM prompt, type RCO <value> where value is 0-2. | | |

**LD15** – Setting up USCR in the Customer Data Block

| Prompt | Response | Comments |
|---|---|---|
| REQ | NEW, CHG | New or change |
| TYPE | CDB | Customer Data Block |
| CUST | xx | Customer number (0-99) |
| CFN0 | xx | Number of normal rings for CFNA, Option 0 (1-15; default is 4) |
| CFN1 | xx | Number of normal rings for CFNA, Option 1 (1-15; default is 4) |
| CFN2 | xx | Number of normal rings for CFNA, Option 2 (1-15; default is 4) |
| DFN0 | xx | Number of distinctive rings for DFNA, Option 0 (1-15; default is 4) |
| DFN1 | xx | Number of distinctive rings for DFNA, Option 1 (1-15; default is 4) |
| DFN2 | xx | Number of distinctive rings for DFNA, Option 2 (1-15; default is 4) |
| SCPL | (0)-8 | Length of Station Control Password. If 0=password disabled; cannot use USCR |

LD57 – Setting up USCR

| Prompt | Response | Comments |
|---|---|---|
| REQ | NEW, CHG | New or change |
| CUST | xx | Customer number (0-99) |
| CODE | USCR, ALL | Prompt for USCR FFC, or all FFC code types |
| USCR | xxxxxxx | USCR FFC (1-7 digits) |
| USCR | yyyyyyy | Define additional FFC codes, as needed |
| USCR | <cr> | Ends the entry of FFC codes |

# Feature operation

As a prerequisite to accessing the feature, the conditions shown in Table 166-2 must be met for the selected access method.

**Table 166-2**
**Requirements for accessing USCR**

| Requirement | Access Method | | |
|---|---|---|---|
| | USR Key | SPRE | FFC |
| FFC package equipped | Yes | Yes | Yes |
| SCPL is defined (>0) | Yes | Yes | Yes |
| SCPW is defined | Yes | Yes | Yes |
| Telephone has USR key | Yes | No | No |
| USRA class of service defined | Yes | Yes | Yes |
| SPRE defined | No | Yes | Yes |
| USCR FFC defined | No | No | Yes |

**Procedure 166-1**
**To assign/query a redirection DN using SPRE:**

1 Take the telephone off-hook, or press the DN key on a digital telephone.

2 Enter the SPRE

3 Enter the USCR feature access code (9915)

4 Enter the Station Control Password.

5 Enter the USCR Option Code, as shown in Table 166-3.

**Table 166-3**
**USCR option codes**

| Code | Used to assign |
|---|---|
| 1 | FDN redirection DN |
| 2 | HUNT redirection DN |
| 3 | EFD redirection DN |
| 4 | EHT redirection DN |
| 5 | RCO |

6 Enter new RCO if assigning the RCO; enter redirection DN if assigning the DN.

7 Place telephone on-hook, or press the RLS key on a digital telephone.

**Procedure 166-2**
**To assign or query a redirection DN using the USR key:**

1 Press the dark USR key.

2 Enter the Station Control Password.

3 Enter the USCR option code from Table 166-3.

4 Enter new RCO if assigning the RCO; enter redirection DN if assigning the DN.

5 Press the USR key again.

**Procedure 166-3**
**To assign or query a redirection DN using an FFC:**

1. Take the telephone off-hook, or press the DN key on a digital telephone.
2. Enter the USCR FFC.
3. Enter the Station Control Password.
4. Enter the USCR Option Code, as shown in Table 166-3.
5. Enter new RCO if assigning the RCO; enter redirection DN if assigning the DN.
6. Place telephone on-hook, or press the RLS key on a digital telephone.

| | |
|---|---|
| Issued: | 93 08 01 |
| Status: | Standard |
| X11 Release: | 1 |



# Voice Call

Voice Call allows you to talk through the speaker of a Meridian digital telephone from another Meridian digital telephone. The called party does not have to lift the handset to hear you. For a two-way conversation, the called party must lift the handset or activate Handsfree, unless Handsfree Voice Call is enabled.

If the called telephone is busy on another DN, the caller hears continuous ringing. The called party hears a single beep and the Voice Call DN key flashes. If the telephone is busy on the Voice Call DN, the caller hears a busy tone. A fast busy tone may indicate that the Voice Call DN is no longer available (it may not be a single appearance DN).

## Handsfree Voice Call

Handsfree Voice Call is an X11 release 19 system feature that can be used with such telephones as the M2112, M2317, and M2616.

Handsfree Voice Call provides the option of configuring VCC/DIG (with voice option) to be answered in either handsfree mode or loudspeaker only mode. Calls answered in handsfree (HVA) mode establish a two-way voice path, while those answered in loudspeaker only (HVD) mode establish only a one-way voice path from the calling telephone to the destination telephone.

## Operating parameters

Both telephones must be Meridian digital telephones.

The Voice Call DN must be single appearance.

Handsfree Voice Call allowed/denied is set at the system level and can only be used with digital telephones that have handsfree capabilities (such as M2112, M2317, M2616). It requires Class of Service Handsfree Allowed/HFA on the destination telephone, which is set at the telephone level.

*Note:* BRI, M3000, and SL-1 telephones do not support the Handsfree feature.

## Feature interactions

- Manual Signaling
  The same DN can be used for both Voice Call and Manual Signaling (Buzz) as long as it remains a single appearance DN.
- Multiple Appearance DNs
  If a Voice Call DN is added to a second telephone, the DN becomes a Multiple Appearance DN (MADN). Voice Call no longer works on that DN and fast busy tone is returned.
- Auto Answer Back (AAB)
  This feature is not affected by the Handsfree Voice Call feature.

## Feature packaging

Voice Call requires the Extended PBX Features package (Package 1).

Handsfree Voice Call requires release 19 or above.

# Feature implementation

**LD11** – Add or change Voice Call for the originating SL-1 or Meridian digital telephone.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | aaaa | Telephone type<br>aaaa = SL1, 2006, 2008, 2009, 2016, 2018, 2112, 2216, 2317, 2616, 3000 |
| TN | l s c u | Terminal Number |
| KEY | xx SCR yyy...y | Adds a single appearance single call key on the terminating telephone<br>xx = key number<br>yyy...y = the DN assigned to the Voice Call key for the originating telephone |
| KEY | xx VCC yyy...y | Adds a Voice Call key on the originating telephone<br>xx = key number<br>yyy...y = the DN of the terminating telephone<br>This key activates the feature. |

**LD15** – Add or change Handsfree Voice Call for the Meridian 1 system.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Customer data block |
| CUST | 0 | Customer number |
| OPT | HVA, (HVD) | System option HVA |

# Feature operation

Voice Call and Handsfree Voice Call operations are described below.

## Voice Call

To make a Voice Call:

— Lift the handset and press **Voice Call**. The DN is automatically dialed. If the called telephone is busy on another DN, you hear continuous ringing. If the telephone is busy on the Voice Call DN, you hear busy tone.

To end a Voice Call:

— Press **RLS**.

To answer a Voice Call on an idle telephone:

— Let the call ring once. The call is answered automatically, activating the Voice Call DN over the speaker. For a two way conversation, lift the handset.

If busy on another DN, you hear a single beep and the Voice Call DN flashes. You must end your present call to receive the Voice Call.

## Handsfree Voice Call

Examples of both Handsfree Voice Call options are listed below:

### HVA option

The originating telephone (telephone A) places a VCC/DIG call to the destination telephone (telephone B).

— Telephone B rings once.

— After one ring, telephone B automatically answers the call in Handsfree mode.

The DN and Handsfree LCDs are lit and a two-way voice path is established.

### HVD option

Telephone A places a call to telephone B.

— Telephone B rings once.

— After one ring, telephone B automatically answers the call in loudspeaker only mode.

The DN LCD is lit and the Handsfree LCD remains dark, establishing a one-way voice path from telephone A to telephone B. At this point, telephone A is unable to hear the person at telephone B.

To re-establish a two-way voice path, telephone B must either go off-hook, or press the Handsfree button.

*Note:* Busy calls are not changed by Handsfree Voice Call.

| | |
|---|---|
| Issued: | 93 10 31 |
| Status: | Standard |
| X11 Release: | All |



# 2500 Telephone Features

This feature allows 2500-type telephones to access features otherwise available only with SL-1 and Meridian digital telephones. By dialing an octothorpe (#) and a single digit access code, 2500 type telephones can access the following features:

— Call Forward All Calls Dial #1

— Speed Call Controller Dial #2

— Speed Call User Dial #3

— Permanent Hold Dial #4

## Operating parameters

Allow or deny these features in LD10 (500/2500 telephone administration).

Except for the access codes used, feature operation is the same as SL-1 and Meridian digital telephones.

## Feature interactions

– 500 Set Features
When 500 Set Features (SS5), package 73, is equipped, 2500-type telephones also access by dialing SPRE and a two-digit access code as follows:

- System Speed Call User SPRE + 73
- Call Forward All Calls SPRE + 74
- Speed Call Controller SPRE + 75
- Speed Call User SPRE + 76
- Permanent Hold SPRE + 77

– Remote Call Forward
When Flexible Feature Codes (FFC), package 139, is defined and active on your system, a telephone provisioned for Call Forward in LD 10 can also Call Forward All Calls from a remote internal DN.

## Feature packaging

2500 Set Features (SS25), package 18, has no feature package dependencies.

# Feature implementation

**LD10** – Enable 2500 Set features

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | XFA, (XFD) | Allow or deny transfer |
| FTR | CFW xx | Call Forward All Calls and DN length (4-23)<br>X CFW to remove |
| | SCC xxxx | Speed Call Controller and list number<br>X SCC to remove |
| | SCU xxxx | Speed Call User and list number<br>X SCU to remove |
| | SSU xxxx | System Speed Call User and list number<br>X SSU to remove |
| | PHD | Allow Permanent Hold<br>X PHD to remove |

# Feature operation

## Call Forward All Calls

### Case 1: FFC active, CFW not active

On a telephone with Flexible Feature Codes implemented but without Call Forward currently active, use these steps to activate the feature:

1 Lift the handset and dial SPRE + 74. You hear a dial tone.

2 Dial the DN where you want calls to be forwarded. The dial tone disappears.

3 Hang up to complete the activation.

To deactivate Call Forward, follow these steps:

1 Lift the handset and dial SPRE + 74. You hear a dial tone.

2 Hang up to complete deactivation.

### Case 2: FFC not active, CFW not active

On a telephone without Flexible Feature Codes or Call Forward currently Active, use these steps to activate the feature:

1 Lift the handset and dial #1. You hear a dial tone.

2 Dial the DN where you want calls to be forwarded. The dial tone disappears.

3 Hang up to complete the activation.

To deactivate Call Forward, follow these steps:

1 Lift the handset and dial #1. You hear a dial tone.

2 Hang up to complete deactivation.

### Case 3: FFC active, CFW active

On a telephone with Flexible Feature Codes and Call Forward currently active, use these steps to deactivate the feature:

1 Lift the handset and dial #1. You hear a confirmation tone.

2 Hang up to complete the deactivation.

To reactivate Call Forward, follow these steps:

1 Lift the handset and dial #1. You hear a dial tone.

2 Dial the DN where you want calls to be forwarded. The dial tone disappears.

3 Hang up to complete the activation.

–or–

1 Lift the handset and dial #1. You hear a dial tone.

2 Dial the DN where you want calls to be forwarded. The dial tone disappears.

3 Dial the EOD string. You hear a confirmation tone.

4 Hang up to complete the activation.

–or–

1 Lift the handset and dial #1. You hear a dial tone.

2 Hang up to complete the activation. Calls are forwarded to the last CAll Forward DN used by this telephone.

## Speed Call Controller

To update a predefined Speed Call list, follow these steps:

1 Lift the handset, dial #2. You hear a dial tone.

2 Dial the Speed Call code (0–999), followed by the phone number it represents. If the entry is accepted, you hear silence. If the entry is not accepted, you hear a fast busy tone.

3 Hang up.

To change a number associated with a list, follow these steps:

1 Lift the handset, dial #2. You hear a dial tone.

2 Dial the Speed Call code (0–999), followed by the new telephone number. The new number automatically replaces the old one. If the entry is accepted, you hear silence. If the entry is not accepted, you hear a fast busy tone.

3 Hang up.

To remove an entry from a Speed Call list, follow these steps:

1 Lift the handset, dial #2. You hear a dial tone.

2 Dial the Speed Call code (0–999) you want to remove.

3 Hang up.

## Speed Call User

To make a Speed Call, follow these steps:

1 Lift the handset, dial #3. You hear a dial tone.

2 Dial the Speed Call code (0–999).

3 The number is dialed automatically.

## System Speed Call User

To make a System Speed Call, follow these steps:

1 Lift the handset and dial SPRE 73. You hear a dial tone.

2 Dial the System Speed Call code (0–999).

3 The number is dialed automatically.

## Permanent Hold

To activate Permanent Hold while on a call, follow these steps:

1 Flash the switchhook. You hear a dial tone.

2 Dial #4.

3 Hang up.

The call remains on hold until you lift the handset again, or the other party disconnects.

| | |
|---|---|
| Issued: | 92 12 31 |
| Status: | Standard |
| X11 Release: | All |



# 500 Telephone Features

This feature allows 500 type (rotary-dial) telephones to use Call Forward, Speed Call, and Permanent Hold. Since 500 type telephones do not have octothorpe (#), the following features are activated by dialing SPRE and a two-digit access code.

— System Speed Call SPRE + 73
— Call Forward All Calls SPRE + 74
— Speed Call Controller SPRE + 75
— Speed Call User SPRE + 76
— Permanent Hold SPRE + 77

## Operating parameters

Allow or deny these features in LD10 (500/2500 telephone administration).

Except for the SPRE codes used, feature operation is the same as with SL-1 and Meridian digital telephones.

## Feature interactions

— 2500 Set Features
When the 2500 Set Features (SS25), package 18, is equipped, 2500-type telephones also access by dialing the SPRE and a two digit access code.

## Feature packaging

500 Set Features (SS5), package 73, requires the following:

— 2500 Set Features (SS25), package 18.

# Feature implementation

**LD10** – Enable 500 Set Features.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | XFA, (XFD) | Allow (deny) transfer |
| FTR | CFW xx | Call Forward All Calls and DN length (4–23)<br>X CFW to remove |
| | SCC xxxx | Speed Call Controller and list number<br>X SCC to remove |
| | SCU xxxx | Speed Call User and list number<br>X SCU to remove |
| | SSU xxxx | System Speed Call User and list number<br>X SSU to remove |
| | PHD | Allow Permanent Hold<br>X PHD to remove |

# Feature operation

## Call Forward All Calls

To forward your calls, follow these steps:

1 Lift the handset and dial SPRE + 74. You hear the dial tone.

2 Dial the DN where you want your calls forwarded.

3 Hang up.

To cancel forwarding, follow these steps:

1 Lift the handset and dial SPRE + 74. You hear a dial tone.

2 Hang up.

## Speed Call Controller

To update a predefined Speed Call list, follow these steps:

1 Lift the handset and dial SPRE + 75. You hear the dial tone.

2 Dial the Speed Call code (0–999), followed by the phone number it represents. If the entry is accepted, you hear silence. If the entry is not accepted, you hear a fast busy tone.

3 Hang up.

To change a number associated with a list, follow these steps:

1 Lift the handset and dial SPRE + 75. You hear a dial tone.

2 Dial the Speed Call code (0–999), followed by the new phone number. The new number automatically replaces the old one. If the entry is accepted, you hear silence. If the entry is not accepted, you hear a fast busy tone.

3 Hang up.

To remove an entry in a Speed Call list, follow these steps:

1 Lift the handset and dial SPRE + 75. You hear a dial tone.

2 Dial the Speed Call code (0–999) you want to remove.

3 Hang up.

## Speed Call User

To make a Speed Call, follow these steps:

1 Lift the handset and dial SPRE + 76. You hear a dial tone.

2 Dial the Speed Call code (0–999).

3 The number is dialed automatically.

## System Speed Call User

To make a System Speed Call, follow these steps:

1 Lift the handset and dial SPRE + 73. You hear a dial tone.

2 Dial the System Speed Call code (0–999).

3 The number is dialed automatically.

## Permanent Hold

To activate Permanent Hold while active on a call, follow these steps:

1 Flash the switchhook. You hear a dial tone.

2 Dial SPRE + 77.

3 Hang up.

The call remains on hold until you lift the handset again, or the other party disconnects.

Issued: 93 08 01
Status: Standard
X11 Release: 19



# 500/2500 Type Line Disconnect

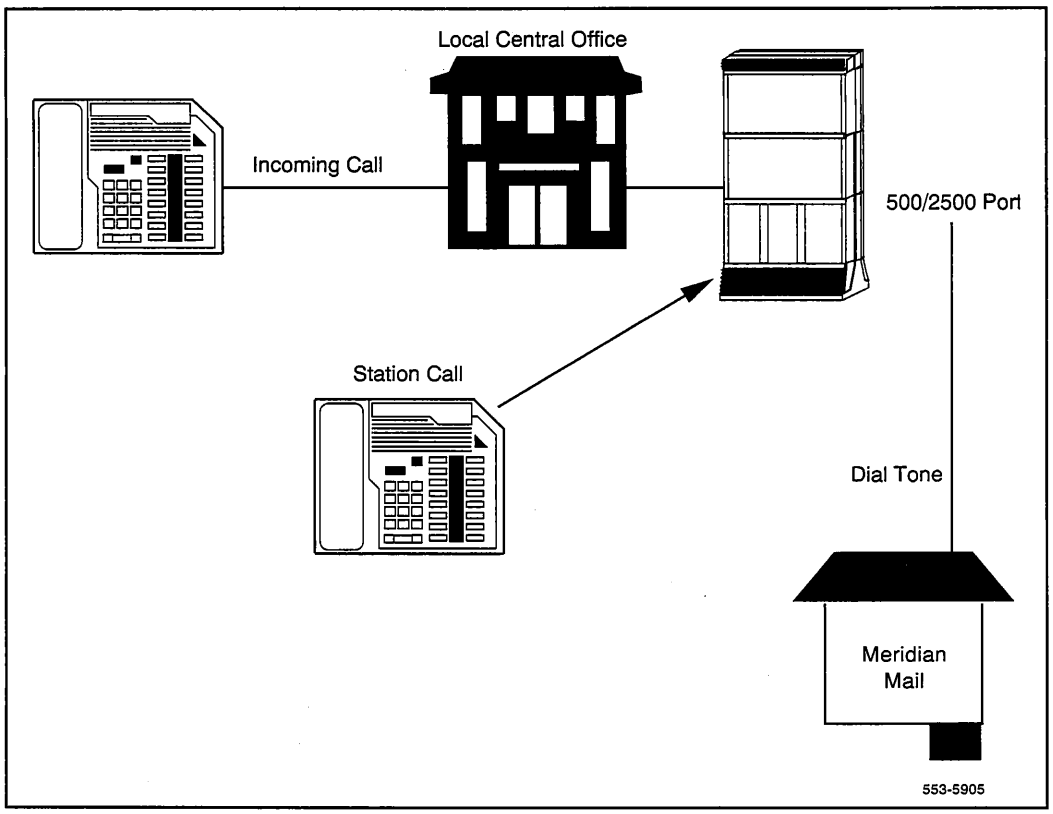
500/2500 Type Line Disconnect is invoked when the Meridian 1 system detects on-hook/disconnect supervision from a party connected to a 500/2500 type port. Dialtone is sent to this port for a specified period of time (default is 6 seconds) which is defined in LD15 at the Line Disconnect Tone Timer (LDTT) prompt. Refer to the feature implementation for a list of LD15 prompts.

It is used when the 500/2500 type port is connected to an automated attendant or voice mail. It allows the Meridian 1 system to know that it is not connected to a telephone, and to disconnect if the other telephone has hung up, for example, during an automated message or a voice mail message.

This feature is programmed in LD10, LD15, LD20, LD21, LD81, and LD83. Refer to the *X11 input/output guide* (553-3001-400) for a list of these prompts and responses.

Figure 170-1 illustrates how an incoming trunk call or internal call functions with 500/2500 Type Line Disconnect.

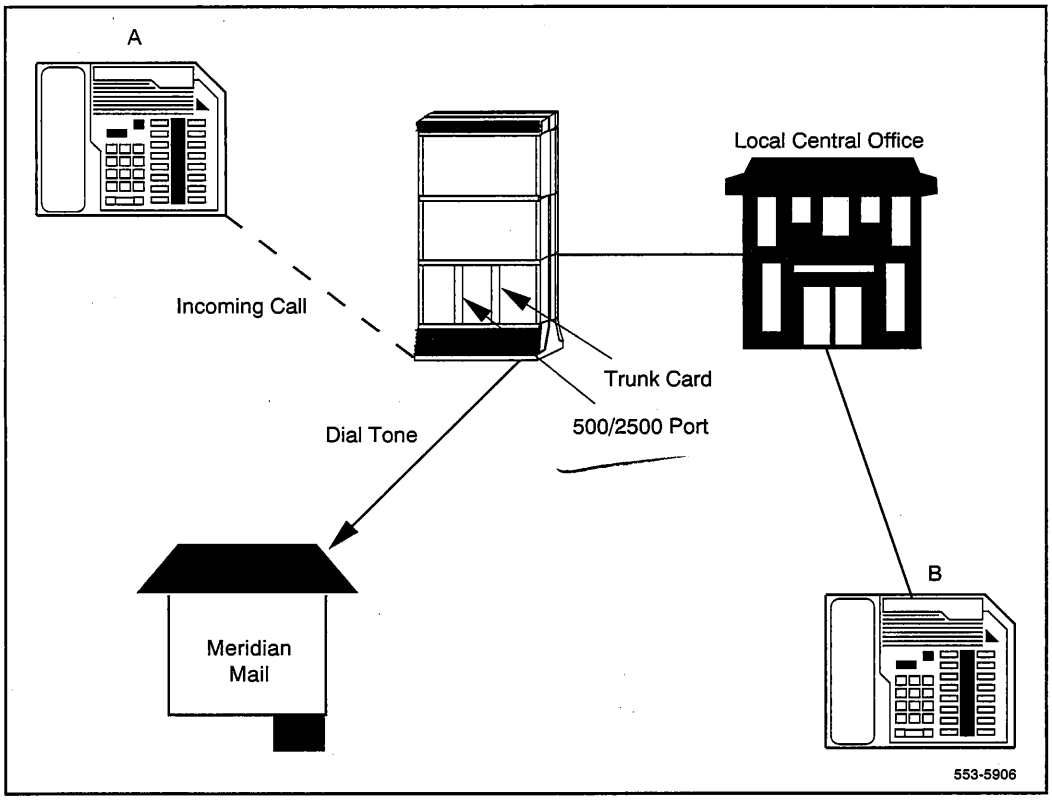
**Figure 170-1**
**Incoming Trunk Call of Internal Call Disconnects**



This illustration shows the incoming trunk call or internal call disconnected and dialtone being provided by the 500/2500 type port with the new Class of Service (CLS) Line Disconnect Tone Allowed (LDTA)

Figure 170-2 illustrates how an outgoing call functions with this feature.

**Figure 170-2**
**Outgoing Call from the Meridian 1 to a Central Office**




This illustration shows an outgoing call to from the Meridian 1 system to the Central Office. Station A transfers Station B to Meridian Mail and goes on-hook. The dialtone is provided by the 500/2500 type port with the new CLS LDTA after Station B disconnects.

## Operating parameters

A 500/2500 port with LDTA Class of Service 500/2500 receives disconnect tone in the following cases:

- an incoming internal call is placed to an LDTA port and then disconnects
- incoming call from a trunk with disconnect supervision is placed to an LDTA port and then the incoming trunk disconnects
- an internal DN places an outgoing call on a trunk with disconnect supervision, then transfers the call to the LDTA port and then the trunk disconnects

Line Disconnect Tone is not provided on outgoing calls from the LDTA port.

## Feature interactions

- Conference/No Hold Conference
  If one of the parties in the conference is connected to a 500/2500 port that is in turn connected to a VRU, dial tone is provided to the 500/2500 port when all the other parties in the conference disconnect. This feature enhancement applies in the same way to Call Transfer and Hunting.
- Attendant Extended Call
  500/2500 Line Disconnect applies if the attendant extends a call to a 500/2500 port that is connected to a VRU; or the attendant extended a call to a 500/2500 port that is connected to a VRU and remains in the call, and the other party has disconnected.
- 500/2500 ACD agent
  If a call is involved with a 500/2500 ACD agent that is connected to a VRU and the other party has disconnected, 500/2500 Line Disconnect applies. When the other party disconnects, the 500/2500 agent will be returned to the idle agent queue.

## Feature packaging

500/2500 Line Disconnect is included in basic X11 system software.

# Feature implementation

**LD10** – Allow or deny Line Disconnect Tone for 500/2500 ports.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | 500 | Telephone type |
| TN | l s c u | Terminal Number |
| CLS | LDTA, (LDTD) | Line Disconnect Tone allowed (denied) |

**LD15** – Define Line Disconnect Tone timer in the Customer data block.

| | | |
|---|---|---|
| REQ | CHG | Change |
| TYPE | CDB | Telephone type |
| CUST | 0–99 | Customer number |
| LDTT | 2–(6)–30 | Line Disconnect Tone timer in seconds |

# Feature operation

No specific procedure is required for this feature to operate.

SL-1

# X11 features and services

SUPPLEMENT

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