Nortel Communication Server 1000

New in this Release

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www.nortel.com

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Contents

How to get help

This chapter explains how to get help for Nortel products and services.

Getting help from the Nortel Web site

The best way to get technical support for Nortel products is from the Nortel Technical Support Web site:

www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. From this site, you can:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

Getting help over the telephone from a Nortel Solutions Center

If you do not find the information you require on the Nortel Technical Support Web site, and you have a Nortel support contract, you can also get help over the telephone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following Web site to obtain the telephone number for your region:

www.nortel.com/callus

Getting help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.

Introduction

This document is a global document. Contact your system supplier or your Nortel representative to verify that the hardware and software described are supported in your area.

Subject

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server (CS) 1000 Release 5.5 software. For more information on legacy products and releases, click the Technical Documentation link under Support & Training on the Nortel home page:

www.nortel.com

Applicable Systems

This document applies to the following systems:

- CS 1000E CP PII
- CS 1000E CP PIV
- CS 1000E CP PM HA (Chassis)
- CS 1000E CP PM HA (Cabinet)
- CS 1000E CP PM SA (Chassis)
- CS 1000E CP PM SA (Cabinet)
- CS 1000M Single Group CP PII (AC/DC)
- CS 1000M Multi Group CP PII (AC/DC)
- CS 1000M Single Group CP PIV (AC/DC)
- CS 1000M Multi Group CP PIV (AC/DC)

Communication Server 1000 and Meridian 1 Release 5.5 database conversion

Automatic Call Server database conversion is supported for all Succession and Communication Server (CS) 1000 releases and for Meridian 1 Release 23 or later.

Database upgrades for software releases prior to Meridian 1 Release 23 require a Nortel In-House Conversion (IHC), a database retype, or upgrade in a Distributor's lab (if already equipped with required hardware and software). Direct conversion in the field is not supported for any release prior to Release 23. The (IHC) service is available to convert any database to CS 1000 Release 5.5 and eliminates the need for intermediate hardware and software. The conversion of the customer's source database is done in Nortel's Enterprise Software Solutions lab.

Conventions

Terminology

In this document, the following systems are referred to generically as "system":

- Communication Server 1000M (CS 1000M)
- Communication Server 1000E (CS 1000E)
- Meridian 1

The following systems are referred to generically as "Small System":

- Meridian 1 Option 11C Chassis
- Meridian 1 Option 11C Cabinet

The following systems are referred to generically as "Large System":

- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Meridian 1 Option 61C
- Meridian 1 Option 81C

Overview

Communication Server (CS) 1000 Release 5.5 is the latest release for the CS 1000 family of products. CS 1000 Release 5.5 is a further evolution of the traditional TDM enterprise network to a converged IP based network.

The CS 1000 Release 5.5 is a reliable and secure platform for VoIP communications and is designed to be a more open and simplified platform, which speeds deployment and improves manageability.

Key Attributes

- **Adaptable to meet current and future needs**
  - Delivers investment protection and evolution path to next-generation multimedia communications
- **Superior IP Telephony experience**
  - More open platform to take advantage of innovative applications, and feature-rich next generation clients
- **Improved reliability and security**
  - Business continuity improvement from a reliable and secure environment
- **Simplified convergence solution**
  - Product portfolio simplified for easier deployment, configuration and management

Features and enhancements described in this document

The following features are described in this document:

- "IP Phone 1200 series phones" (page 11)
- "Mobile Extensions" (page 13)
- "Subscriber Manager" (page 17)
- "EM/ECM/NRSM enhancements" (page 21)

IP Phone 1200 series phones

Communication Server 1000 (CS 1000) Release 5.5 adds support for the Nortel IP Phone 1200 series of phones to CS 1000. The IP Phone 1200 series of phones bring voice and data to the desktop by connecting directly to a Local Area Network (LAN) through an Ethernet connection. The following 1200 series devices are supported on CS 1000 Release 5.5:

- IP Phone 1210 is based on the IP Phone 2001, and supports all the same features and functionality. In addition, IP Phone 1210 supports Mute and Headset features, which are not present on the IP Phone 2001.
- IP Phone 1220 is based on the IP Phone 2002, and supports all the same features and functionality.
- IP Phone 1230 is based on the IP Phone 2002, and supports all the same features and functionality. In addition, the IP Phone 1230 has a larger display than the IP Phone 1220 or IP Phone 2002 and offers 10 programmable feature/DN keys on the main phone as opposed to 4 programmable feature/DN keys on IP Phone 1220 or IP Phone 2002.
- IP Phone 1200 series LCD Expansion Module. The Expansion Module provides 12 additional line/programmable feature keys for your IP Phone 1220 or 1230. You can connect up to seven Expansion Modules to an IP Phone 1220 or 1230.

  Note: The IP 2001 phone has one LAN port on the back of the phone. The IP 1210 has two LAN ports on the back of the phone (one for a PC and one that connects back to the LAN switch).

For more information about installing the Nortel IP Phone 1200 series of phones, see *IP Phones Description, Installation, and Operation* () (NN43001-368).

Mobile Extensions

Feature description

Introduction

The CS 1000 Mobile Extensions feature enables mobile phones connected to a CS 1000 system to appear as an office extension. Incoming calls to an office phone number automatically call out to the mobile phone associated with the office phone number. A user making a call from a mobile phone can use the enterprise dial plan as if the call were made from an office extension. Call treatments provided for an office extension are extended to the mobile phone.

A Mobile user is configured with a Universal Extension (UEXT), which provides the logical connection to the mobile phone. A Mobile user can have an office desktop phone (digital, IP etc) in addition to the Universal Extension. A single Directory Number (DN) can be shared between the Universal Extension and the desktop phone.

Hardware and software requirements

The hardware and software requirements for the Mobile Extensions feature are as follows:

- CS 1000 CP PIV or CP PM system
- CS 1000 Release 5.5 or later
- a mobile phone

Note: CS1000 upgrade from Release 4.5 to 5.5 reminder:
Before upgrading a CS1000 system from 4.5 to 5.5, install the MPLR 24008 patch on the CS1000 4.5 system. The patch ensures that the VGMC card is upgraded properly.

Business grade telephony features

The CS 1000 Mobile Extensions feature provides the following business grade telephony features to mobile phone users:

1. A call to the shared DN will ring the mobile phone and desktop phone simultaneously. The call can be answered from the mobile phone or from the desktop phone.
2. A call from the mobile phone can use the enterprise dialing plan as if the call were made from an office extension. The call will be presented to the called party as if the call were made from an office extension. The Calling Line ID and the Calling Party Name will be that of the office extension.
3. If the mobile phone is in use, a busy status is indicated on the desktop phone.
4. Call Forwarding features such as Call Forward All Calls, Internal Call Forward, Call Forward Busy and Hunting are applicable to the user's directory number. Call Forward features can be activated from the mobile phone.
5. Call Management features such as Group Hunt, Intercept Computer and Call Party Privacy can be activated/deactivated from the mobile phone.
6. Call restrictions are applied to calls made from the mobile phone in the same way as calls made from an office extension, using the classes of service of the Universal Extension.
7. Attendant features such as Camp On and Busy Lamp Field indication are applicable to mobile phones.
8. The attendant can barge-in to a call that the user has answered on the mobile phone and the associated warning tone is provided to the mobile phone.
9. A new TN type, Universal Extension (UEXT), is introduced to facilitate new CS 1000 mobility capabilities. This allows Mobile X Line, Fixed Mobile Convergence Line, SIP Line and Converged Office Line to be configurable on a per-user basis.
10. If the Mobile X user has a regular office desktop phone with a prime key sharing the same DN, the Mobile X user can handoff a call between the desktop phone and the mobile phone. A security password must be entered, if enabled, before being able to take a call from the mobile phone.
11. While the user on the mobile phone is in conversation with another party, the user can initiate Call Transfer with consultation, or a three party Conference Call with consultation can be initiated from a mobile phone using the Mobile Feature Activation Code (MFAC) followed by

the Flexible Feature Code (FFC).
When a Mobile X user's mobile phone is connected to another phone in the CS 1000 system, the user can initiate Call in Progress features such as Call Transfer or Conference. The Mobile X user must press a special key sequence Mobile Feature Activation Code (MFAC) to signal the CS 1000 system for the feature activation.

12. When a Mobile X user makes a call from a mobile phone to an Enterprise Network DN, the call is routed to the CS 1000 system with a dedicated mobile route. This is known as source based routing, as the Service Provider routes the call to a particular switch based on the source of the call. The trunk interface of this mobile route is supported on most of the ISDN interfaces including EURO, ESIG, QSIG, MCDN and NI2.
13. As an alternative interface to source based routing, a new Mobility Service Access interface using a Mobile Service DN is introduced to allow customers to setup an ISDN interface to the CS 1000 system and the Mobile Network. This interface enables the mobile user to use FFCs to access Mobile X features. Mobile Service Access is only supported for PRI trunks in this release.
14. A call on a dedicated Mobile Route, or a call through Mobile Service Access, requires matching and validation of the CLID from the mobile phone. The CLID received from the mobile phone must match the UXID configured for a Universal Extension in order for the call to go through. Attributes of the call are taken from the matched UEXT.
15. A new Incremental Software Management license (ISM) is created for the MOBX type of UEXT. Other UEXT types will consume a PCA ISM. MOBX UEXT phones will also consume a TN ISM, as PCA phones do. The CS 1000 Mobile Extensions capability is managed with a new Mobile X package and a new Mobile X ISM.
16. The CS 1000 Mobile Extensions feature is supported in multi-customer configurations.

For more information about the Mobile Extensions feature, see *Features and Services Fundamentals — Book 4 of 6 (I to M) (NN43001-106)*

Subscriber Manager

Overview

Subscriber Manager is an intuitive and user-friendly Web-based interface that is deployed as a plug-in application to the Enterprise Common Manager (ECM) framework. Subscriber Manager provides a centralized location for the management of subscriber information for enterprise services.

With Subscriber Manager, administrators can:

- easily manage subscribers, subscriber accounts, and subscriber phone services within your network
- quickly search, sort, and update single and multiple subscribers and subscriber accounts within a single application interface

Prior to ECM Subscriber Manager, subscribers and accounts were managed by individual element managers or element management systems. Subscriber Manager eliminates the need to configure and manage separate subscriber management applications for specific products in a management system.

Subscriber Manager provides security, user access control, simplified management tasks, and improved workflow efficiency.

The following subscriber management functions can be performed using Subscriber Manager:

- Create subscribers
- Search subscribers
- View and update subscribers
- Delete subscribers
- Create a subscriber account
- View and update subscriber account
- Delete an account

- Publish account properties
- Synchronize accounts
- View and update a phone account
- Add a phone with templates

Benefits and features of Subscriber Manager

Subscriber Manager has many benefits and features to help administrators perform subscriber operations with greater efficiency. Examples are as follows:

- central location to manage subscribers, subscriber accounts, and system manager types within a network
- Common web based interface within a management system with a common User Interface (UI)
- common terminology used by system managers that interwork with Subscriber Manager
- security that includes Authentication, Authorization, and Accounting (AAA)
- secure communication that uses private certificate authority and X.509 certificate management
- Single Sign On (SSO), password authentication, and role- and instance-based access control
- backup and restore capabilities
- logs for all Subscriber Manager transactions
- synchronization between subscriber data and a customer corporate LDAP server
- basic and advanced search options to find a subscriber or a set of subscribers

For Release 5.5, the following two new features are added to CND 2.2:

- CSV Synchronization
- CSV Export

Security

The ECM framework manages secure access to Web applications and provides security for Web interfaces and Web utilities. The ECM security domain provides the central point for Authentication, Authorization, and Auditing (AAA); open, standards-based authentication; and policy-based authorization with a single, unified framework.

With ECM, the authorization process, also known as access control, determines and enforces assigned privileges for an authenticated user of ECM. Therefore, access control for Subscriber Manager is managed in the ECM security framework.

For more information about Enterprise Common Manager, see Enterprise Common Manager Fundamentals (NN43001-116).

For more information about Subscriber Manager, see Subscriber Manager Fundamentals (NN43001-120).

EM/ECM/NRSM enhancements

EM enhancements

For Release 5.5, Element Manager supports the display of a warning banner on the Login page of EM-VxWorks. Element Manager displays the warning banner content as it exists in the Signaling Server from which the EM is launched, with the ability to edit and customize the warning displayed.

Element Manager now displays the traffic data measured under System Traffic and Customer Traffic with proper headers and descriptions. The display format of all the traffic reports displayed in Element Manager has been changed in Release 5.5.

Element Manager provides support for executing most of the Media Gateway Controller (MGC) and 32 Channel Secure Media Card (MC32S) command line interface (CLI) maintenance commands directly from the Element Manager.

Element Manager in ECM provides a nodal management interface for provisioning CS 1000 phones. EM is able to inter-work with Subscriber Manager to provision phone services for subscribers.

With Subscriber Manager, an administrator can add and configure phone services for subscribers with available Templates in Element Manager. A Template contains attributes common to a CS 1000 phone type. Once a Template is created, you can use it to apply these common attributes to a group of phones, without having to repetitively define the same value for each phone. In general, using a Template is a more efficient method of adding large numbers of phones than maintaining each phone individually.

Phones

In Element Manager for Release 5.5, a telephone data import feature is now available. The import feature allows the user to import telephone data into the telephone database section of Element Manager from a comma separated value (.CSV) file.

The Courtesy Change feature is also introduced which checks the telephone's busy/idle status before transmitting the changes to the switch. If the telephone is busy, the change is not transmitted, because this disconnects the active call.

For more information about Element Manager, see Element Manager System Reference - Administration (NN43001-632).

ECM enhancements

For Release 5.5, the Enterprise Common Manager supports the management of multiple releases for network elements. When network elements are upgraded, the CS 1000 elements in the ECM framework must be configured to launch the Release 5.5 management Web application.

For a Release update, the following configured data for Release 5 is migrated to Release 5.5:

- user and role details
- solid database configuration for the Network Routing Service Manager (NRSM) and Basic Client Configuration (BCC)

Table 1 "Elements that can have multiple versions" (page 22) shows the elements that can have multiple versions in ECM.

Table 1
Elements that can have multiple versions

Element	Multiple versions
Element Manager	Yes
NRS Manager	No NRS Manager does not require multiple release support, since it always coresides with the network element it manages (NRS). An upgrade to the network element requires an upgrade to the management application.
Bookmark	No

The following new features are available in Release 5.5 for element and policy configuration:

- CS 1000 Releases - ECM Release 5.5 supports multiple releases of network elements
- Single Sign On (SSO) cookie domain - ECM Release 5.5 supports SSO cookie domain name change

NRSM enhancements

Release 5.5 introduces a new feature “Bulk Import / Export” to improve the provisioning of the routing entries. Comma Separated Value (CSV) file is used to create routing entries into the Standby database.

The existing entries from the database can be exported into a CSV file. The output can be edited and imported into the same system or another system. The output can also be saved as a backup of the configured routing entries and default routes in the Active/Standby database.

The user interface of NRSM now includes the following:

- A one click expand all functionality and dynamic configuration for the navigation tree
- An improved page navigation bar
- An additional hide and show link
- Improved page reorganization

For more information about NRSM, see Network Routing Service Installation and Commissioning (NN43001-564).

CS 1000 – Exchange 2007 UM Interop

Microsoft Exchange Server 2007 marks the introduction of Microsoft's unified messaging technology: robust, interoperable, server-based tools that integrate with desktop and mobile clients to give information workers access to voice, fax, and e-mail data from wherever they are and allows users to use the telephone to manage their email, calendar, and personal contacts.

CS 1000 support for Microsoft Exchange Server 2007 Unified Messaging enables interoperability between the voice service capabilities of Communication Server 1000 (Release 5.5) and the Unified Messaging solution provided as a component of Microsoft Exchange Server 2007. This interoperability provides the following capabilities:

- Call Answering: Answers incoming calls on behalf of a user, playing a personal greeting, recording a voice message from the caller, and submitting it for delivery to the user inbox as an e-mail message.
- Subscriber Access: Enables dial-in access for users. A subscriber dialing into the Microsoft Exchange Unified Messaging system accesses their mailbox using Outlook 2007 Voice Access, enabling access using either a telephone keypad or voice inputs.
- Auto Attendant: Provides a set of voice prompts that provides access to the Microsoft Exchange Unified Messaging system by external users. Using the Auto Attendant, the external user navigates the menu structure, using either the telephone keypad or speech inputs, to place a call to a user or to locate a user for the purpose of placing a call to that user. In addition, the Auto Attendant gives system administrators the ability to perform the following functions:
  - Create a customizable set of menus for use by external users.
  - Define informational greetings, business hours greetings, and non-business hours greetings, and greetings for holiday schedules.

  - — Add instructions for callers describing how to search the organizational directory, and how to connect to a specific user by means of their extension number.
  - — Enable access for external callers to the operator.
- Play on Phone: Allows a user to access voice mail messages through Outlook 2007 or Outlook Web Access and listen to the message over a telephone.
- Message Waiting Indication (MWI): Designed by Geomant, the MWI application is an add-on to the Microsoft Exchange Unified Messaging Server 2007 which provides support for MWI notifications to users connected to the Microsoft Exchange Unified Messaging Server.

  Note: The MWI 2007 software is a third-party software developed by Geomant. Information on Geomant and MWI 2007 is provided for ease of reference only. Nortel does not sell, warrant or provide operational support for Geomant's MWI 2007 software product, nor warrant the accuracy of MWI 2007 descriptions. Customers using this document are strongly recommended to obtain the most recent MWI 2007 documentation from Geomant.

For more information about Exchange 2007 UM Interop, see Exchange Unified Messaging Fundamentals (NN43001-122).

Fax/Modem pass through

The Fax/Modem pass through feature provides a modem pass through allowed (MPTA) class of service (CLS) for an analog phone TN. MPTA CLS dedicates an analog phone TN to a modem or a Fax machine terminal. A connection that initiates from the dedicated TN, and/or calls that terminate at the dedicated TN through a Digital Signal Processor (DSP), use a G711 NO VAD codec on the Call Server.

Modem Pass through is a specific configuration of a G.711 VoIP channel that improves modem performance compared to standard VoIP configuration. Auto switch to Voice Band Data (VBD) is a feature of the DSP; the DSP monitors the data stream to distinguish between voice and data calls. The DSP reconfigures to modem pass through mode when it determines the call is a modem call.

For modem calls between CS 1000 systems connected by analog and digital trunks, you must configure MPTA CLS on the Call Server of each CS 1000 system for analog units connected to modems. MPTA CLS configuration is necessary because the call setup negotiation is not done end to end as it is for virtual trunks. If the analog unit on one Call Server uses MPTA CLS and the analog unit on the other Call Server uses modem pass through denied (MPTD) CLS, the modem call fails.

MPT CLS is supported by the G.711 codec only; MPT CLS includes no other codecs. The packet interval for G.711 codec is set to 20 msecs in MPT.

The maximum speed supported for modem and fax is 33.6 Kbps. This limit is imposed by the analog line card.

MPT allows CS 1000 to support the following:

- modem pass through
- Super G3(SG3) fax at V.34(33.6Kbps)
- V.34 rate (33.6 Kbps) modems
- Fax machines that support V.17, V.27, V.29, and V.34 protocols

For interface commands, responses, and definitions for MPT see Table 2 "Interface commands and responses" (page 27).

Table 2
Interface commands and responses

Command prompt	User response	Description
CLS	MPTA	Turn on the MPT feature.
CLS	MPTD	Turn off the MPT feature.

Note: CLS MPTA and MPTD is included in LD10 for analog line card units.

For information on feature packaging requirements see Table 3 "Feature packaging requirements" (page 27).

Table 3
Feature packaging requirements

Package mnemonic	Package number	Package description	Package type (new, existing, or dependency)	Applicable market
Softswitch	402	Identifies a softswitch system.	Existing	All
IPMG	403	Identifies a system that is equipped with IPMGs.	Existing	All

Modem traffic

CS 1000E supports modem traffic in a campus-distributed network with the following characteristics:

- Media card configuration:

  - G.711 codec
  - 20 msec packet size
- one-way delay less than 5 msec
- low packet loss
- V.34 rate (33.6 Kbps)

Note: Performance degrades significantly with packet loss.

ATTENTION
Nortel has conducted extensive but not exhaustive tests of modem-to-modem calls, data transfers, and file transfers between a CS 1000E and MG 1000E, using Virtual Trunks and PRI tandem trunks. While all tests have been successful, Nortel cannot guarantee that all modem brands will operate properly over all G.711 Voice over IP (VoIP) networks. Before deploying modems, test the modem brand within the network to verify reliable operation. Contact your system supplier or your Nortel representative for more information.

Software Input/Output prompts, responses and commands

Contents

This section contains information on the following topics:

Introduction

The tables in this chapter outline the new/changed/retired information in the Software Input/Output Reference NTPs (NN43001-611 and NN43001-711) for Communication Server 1000 Release 5.5.

Numerical list of new packages

Number	Mnemonic	Name
412	MOBX	Mobile Extensions

Number	Mnemonic	Name
413	TLSV	Telephony Services
414	FMCL	Converged Mobile Users
415	SIPL_NORTEL	Nortel SIP Lines
416	SIPL_3RDPARTY	Third Party SIP Lines

LD 10: Analog (500/2500) Telephone Administration

The following changes have been made in LD 10:

- New classes of service (CLS) are added.
  - MPTD (Modem Pass Through Denied [default])
  - MPTA (Modem Pass Through Allowed)
  - SDND (Phantom DN as SDN denied [default])
  - SDNA (Phantom DN as SDN allowed)
- Various classes of service (CLS) are retired
  - PDN (Primary Directory Number [default]))
  - LDN (Listed Directory Number)
  - XMWD (Extended Message Waiting indication Denied [default])
  - XMWI (Extended Message Waiting indication Allowed)

Prompts and Responses

Prompt	Response	Comment
CLS	a...a	Class of Service options

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
CLS		Class of Service options. The following CLS assignments determine the calling options and features available to an analog telephone. Defaults are shown in parentheses. Enter each non-default option required, separated by a space.	basic-1
	(MPTD)	Modem Pass Through Denied.	basic-5.5
	MPTA	Modem Pass Through Allowed.	

Prompt	Response	Comment	Pack/Rel
	(SDND)	Phantom DN as SDN denied.	basic-5.5
	SDNA	Phantom DN as SDN allowed.	

LD 11: Digital Telephone Administration

The following changes have been made in LD 11:

- New types of digital phones (TYPE prompt) are added.
  - 1210 (IP Phone 1210)
  - 1220 (IP Phone 1220)
  - 1230 (IP Phone 1230)
  - 1240 (IP Phone 1240)
  - UEXT (Universal Extension)
- New prompts are added for TYPE = UEXT.
  - UXTY (Universal Extension subtype)
  - UXID (Calling Line ID of the Universal Extension client)
- KEM prompt updated
  - to allow up to 4 KEMs to be configured for IP Phone models 1220, 1230, and 1240
- KEMOFSET prompt updated
  - allows setting of function key offsets for 1 to 4 KEMs on IP Phone models 1220, 1230 and 1240 (TYPE = 1220, 1230, or 1240)
    - only prompted for IP Phone models 1230 and 1240 if KEM = 3 or 4
- PAGEOFSET prompt updated
  - allows setting of function key offsets for 1 or 4 KEMs on IP Phone models 1230 and 1240
    - only prompted for IP Phone models 1230 and 1240 if KEM = 1 or 2
- description for KEY prompt updated
  - includes all considerations for function key assignments on IP Phone models 1210, 1220, 1230, and 1240
- new responses for KEY prompt added
  - HNDO (Hand-off for a Mobile Extension user [TYPE = UEXT])
  - xx HOT P nn yyyzzzz (Access Code to dial the Mobile Extension client's mobile phone [TYPE = UEXT]).

- New responses for the NEWTYP prompt added.
  - 1210 (IP Phone 1210)
  - 1220 (IP Phone 1220)
  - 1230 (IP Phone 1230)
  - 1240 (IP Phone 1240)
  - UEXT (Universal Extension)
- New responses to the CLS prompt are added.
  - KEM4 (IP Phone 1200 Series Key Expansion Module)
- Mnemonics for various CLS responses updated.
  - BRCA changed to RCBA (Recall to Boss Allowed)
  - BRCD changed to RCBD (Recall to Boss Denied)
  - MISA changed to MSIA (Make Set Busy Improvement Allowed)
  - MISD changed to MSID (Make Set Busy Improvement Denied
- Various responses to the CLS prompt are retired
  - HSTD (Host Terminal Denied [default])
  - HSTA (Host Terminal Allowed)
  - PDN (Primary Directory Number [default]))
  - LDN (Listed Directory Number)
  - XMWD (Extended Message Waiting Indication Denied [default])
  - XMWI (Extended Message Waiting Indication Allowed)

Prompts and responses

Prompt	Response	Comment
TYPE	a...a	Type of data block.
NEWTYP	a...a	Specifies the TN_TYPE to convert to.
UXTY	xxxx	Universal Extension client subtype.
UXID	<CLID>	Calling Line ID of the Universal Extension client.
KEM	(0)-4	Number of Key Expansion Units to configure (for IP Phones).
KEY	xx aaa yyyy (cccc or D) zz..z	

Prompt	Response	Comment
		Telephone function key assignments.
PAGEOFST	<Page><KeyOffset>	
		Configure KEM key numbers for IP Phones that support Paging and have a specific number of KEMs configured.
KEMOFST	<KEM><KeyOffset>	
		Configure KEM key numbers for IP Phones that do not support Paging and have a specific number of IP Phone KEMs configured.
CLS	a...a	Class of Service options.

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
CLS		Class of Service options. The following CLS assignments determine the calling options and features available to an analog telephone. Defaults are shown in parentheses. Enter each non-default option required, separated by a space.	basic-1
	KEM4	IP Phone 1200 Series Key Expansion Module. Only applicable to IP Phones 1220, 1230, and 1240. Assigned by default and can not be changed. Allows the definition of extra function keys on IP Phone 1200 Series KEMs attached to IP Phones 1220, 1230, and 1240.	basic-5.5
KEM		Number of IP Phone KEMs to configure.	basic-4.0
	(0)-4	You can only configure more than 2 KEMs for IP Phone models 1220, 1230, and 1240.	basic-5.5
KEMOFST	<KEM><KeyOffset>		basic-4.0
		Configure KEM key numbers for IP Phones that do not support Paging and have a specific number of IP Phone KEMs configured.	

Prompt	Response	Comment	Pack/Rel
		On IP Phone 1220 (TYPE = 1220), prompted if 1 to 4 KEMs are configured and <CR> is entered at the KEY prompt. Where: • KEM = 1-4 • KeyOffset = 0-11	basic-5.5
		On IP Phone 1230/1240 (TYPE = 1230 or 1240), prompted if 3 or 4 KEMs are configured and <CR> is entered at the KEY prompt. Where: • KEM = 3-4 • KeyOffset = 0-11	
KEY	xx aaa yyyy (cccc or D) zz..z		basic-1
		Telephone function key assignments. Key assignments determine calling options and features available to a telephone. ***Note:*** Prompt is presented in a loop until just a <CR> is entered at the prompt.	
		On IP Phones 1210/1220/1230/1240, key number range is as follows: • On IP Phone 1210, key numbers 0-31. • On IP Phone 1220, key numbers 0-79, varying with the value specified at the KEM prompt. — if KEM = 0, key range = 0-31 — if KEM = 1. key range = 0-43 — if KEM = 2, key range = 0-55 — if KEM = 3. key range = 0-67 — if KEM = 4, key range = 0-79 • On IP Phones 1230/1240, key numbers 0-79, varying with the value specified at the KEM prompt. — if KEM 0, key range = 0-31 — if KEM 1, key range = 0-55 (Paging feature) — if KEM 2, key range = 0-79 (Paging feature)	basic-5.5

Prompt	Response	Comment	Pack/Rel
		— if KEM 3, key range = 0-67 (no Paging feature) — if KEM 4, key range = 0-79 (no Paging feature)	
		On IP Phones 1210/1220/1230/1240, configuration guidelines for keys are as follows: • key 0 is used for the primary DN • keys 1-15 are used for programmable feature keys These keys can be programmed with any DN or feature, except Message Waiting (key 16) and those DNs or features configured on keys 17-26 (soft keys) • key 16 is reserved for the Message Waiting (MWK) feature • keys 17-26 are reserved for soft keys • keys 27-30 are typically reserved, except on an IP Phone 1230 (20 feature keys), where these keys are the last 4 programmable feature keys • key 31 is reserved On IP Phone 1210, Key 0 is the only programmable feature key. It is configured with the primary DN. On IP Phone 1220, the number of programmable feature keys depends on the number of KEMs configured: • if KEM = 0, keys 1-3 • if KEM = 1, keys 1-3 and 32-43 • if KEM = 2, keys 1-3 and 32-55 • if KEM = 3, keys 1-3 and 32-67 • if KEM = 4, keys 1-3 and 32-79 On IP Phone 1230, the number of programmable feature keys depends on the number of KEMs configured:	basic-5.5

Prompt	Response	Comment	Pack/Rel
		• if KEM = 0, keys 1-15 and 27-30 • if KEM = 1, keys 1-15, 27-30, and 32-55 (Paging feature) • if KEM = 2, keys 1-15, 27-30, and 32-79 (Paging feature) • if KEM = 3, keys 1-15, 27-30, and 32-67 (no Paging feature) • if KEM = 4, keys 1-15, 27-30, and 32-79 (no Paging feature) On IP Phone 1240, the number of programmable feature keys depends on the number of KEMs configured: • if KEM = 0, keys 1-11 • if KEM = 1, keys 1-11 and 32-55 (Paging feature) • if KEM = 2, keys 1-11 and 32-79 (Paging feature) • if KEM = 3, keys 1-11 and 32-67 (no Paging feature) • if KEM = 4, keys 1-11 and 32-79 (no Paging feature)	
	xx HNDO	Hand-off for a Mobile Extension user (TYPE = UEXT). Mobile Extension package (412) must be equipped.	MOBX-5.5
	xx HOT P nn yyyzzzz		MOBX-5.5
		Access Code to dial the Mobile Extension client's mobile phone (TYPE = UEXT). For TYPE = UEXT, key 1 is reserved for HOT P functionality. Where: • nn = maximum number of digits for yyyzzzz (HOT P DN) • yyyzzzz = 1-32 digit number where:	

Prompt	Response	Comment	Pack/Rel
		— yyy = the trunk steering code, or access code, to dial into the mobile network. The access code could be a NARS/BARS/CDP access code, or a route access code. — zzzz = the mobile phone DN Mobile Extension package (412) must be equipped.	
	xx SCR yyyy (cccc or D) zz..z		basic-20
		Single Call Ringing key.	
		On Universal Extensions (TYPE = UEXT), key 0 is reserved for SCR.	MOBX-5.5
NEWTYP	a...a	Specifies the TN_TYPE to convert to.	
	1210	IP Phone 1210	basic-5.5
	1220	IP Phone 1220	basic-5.5
	1230	IP Phone 1230	basic-5.5
	1240	IP Phone 1240	basic-5.5
	UEXT	Universal Extension. Indicates that the TN is used by a universal extension client. Mobile Extension package (412) must be equipped.	MOBX-5.5
PAGEOFST	<Page><KeyOffset>		basic-4.0
		Configure KEM key numbers for IP Phones that support Paging and have a specific number of KEMs configured.	

Prompt	Response	Comment	Pack/Rel
		On IP Phones 1230/1240, prompted if 1 or 2 KEMs are configured and <CR> is entered at the KEY prompt. Where: • if KEM = 1, Page = 0-1 • if KEM = 2, Page = 2-3 • KeyOffSet = 0-11	basic-5.5
TYPE		Type of data block	basic-1
	1210	IP Phone 1210	basic-5.5
	1220	IP Phone 1220	basic-5.5
	1230	IP Phone 1230	basic-5.5
	1240	IP Phone 1240	basic-5.5
	UEXT	Universal Extension. Indicates that the TN is used by a universal extension client. Mobile Extension package (412) must be equipped.	MOBX-5.5
UXID	<CLID>	Calling Line ID of the Universal Extension client. Where <CLID> = 1-16 digit number (excluding 0). Prompted only if TYPE = UEXT. Must be entered if UXTY = MOBX; optional for other UXTY values.	MOBX-5.5
UXTY		Universal Extension client subtype. Prompted only if TYPE = UEXT. Mobile extension package (412) must be equipped.	MOBX-5.5
	MOBX	Mobile Extension Line	
	FMCL	Fixed Mobile Convergence Line	

Prompt	Response	Comment	Pack/Rel
	SIPL	SIP Line	
	CNVO	Converged Office Line	

LD 15: Customer Data Block

The following changes have been made in LD 15:

- New prompt added for FFC (Flexible Feature Codes) data block
  - — MFAC (Mobile Feature Activation Code)

Data Block: FFC (Flexible Feature Codes)

Prompt	Response	Comment
TYPE	FFC_DATA	Flexible Feature Codes.
MFAC	*	Mobile feature activation code.

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
MFAC	*	Mobile feature activation code. Triggers the CS 1000 system to initiate the Call in Progress features for the calling Mobile phone. • Call Transfer with Consultation and Call Transfer on Ringing • Three Party Conference Call • Device Handoff between the mobile phone and the desk phone — The desk phone must be configured with a Handoff key. ***Note:*** The MFAC code does not have to be unique with the customer number planning, as it is only dialed during established calls, and is not valid in a dialing state. Mobile Extension package (412) must be equipped.	basic-5.5

LD 16: Route Data Block, Automatic Trunk Maintenance

The following changes have been made in LD 16:

- New sub-prompt for ISDN prompt added

— MBXR (Mobile Extension route)

- Sub-prompt for new MBXR sub-prompt added
  — SIND (Send Indicator for the Mobile Extension route)

Prompts and Responses

Prompt	Response	Comment
TYPE	RDB	Route data block.
ISDN	(NO) YES	Dedicated Integrated Services Digital Network (ISDN) route.
- MBXR	(NO) YES	Mobile Extension route.
-- SIND	(NO) YES	Send Indicator for the Mobile Extension route.

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
MBXR	(NO) YES	Mobile Extension route. Where: • YES = route is mobile extension • NO = route is not mobile extension Mobile Extension package (412) must be equipped.	MOBX-5.5
SIND	(NO) YES	Send indicator for Mobile Extension route. Prompted if MBXR = YES. Where: • YES = CLID is user provided and verified. • NO = CLID is user provided and not verified. Mobile Extension package (412) must be equipped.	MOBX-5.5

LD 20: Print Routine 1

The following changes have been made in LD 20:

- New responses to TYPE prompt added.
  — 1210 (IP Phone model 1210)
  — 1220 (IP Phone model 1220)
  — 1230 (IP Phone model 1230)

- 1240 (IP Phone model 1240)
- MOBX (Mobile Extension)
- UEXT (Universal Extension)

- New output added to print report for Terminal Number Block (TNB) telephones and trunks data
  - UXTY (Prints the UEXT type, if the TN TYPE = UEXT
  - UXID (Prints the mobile DN if the TN TYPE = UEXT.
- New output added to print report for Terminal Number Block (TNB) range data
  - UXTY (Prints the UEXT type, if the TN TYPE = UEXT
  - UXID (Prints the mobile DN if the TN TYPE = UEXT.
- New print reports added.
  - MOBX (Mobile Extension data)
  - UEXT (Universal Extension data)
- New responses to FOR prompt added.
  - 1210 (IP Phone model 1210)
  - 1220 (IP Phone model 1220)
  - 1230 (IP Phone model 1230)
  - 1240 (IP Phone model 1240)
- New prompts added.
  - KEM_RANGE (Specifies range of keys to print from IP Phone 1200 Series KEMs)
  - UXID (Calling Line ID of Universal Extension)
  - UXTY (Type of Universal Extension)
- The notes for the FRM and USS responses (INFO prompt) are updated
  - now references IP Phone models 1210, 1220, 1230, and 1240

Prompts and responses

Prompt	Response	Comment
TYPE	a...a	Type of data block.
UXTY	xxxx	Type of Universal Extension unit.
UXID	<CLID>	Calling Line ID of Universal Extension unit.
KEM_RANGE	<StartKEM> <EndKEM> <CR>	Specifies range of keys to print for IP Phone 1200 Series KEMs.

Alphabetical list of print reports

Mobile Extension (MOBX) data

Prompt	Response	Comment
REQ	PRT	Print
TYPE	MOBX	Mobile Extension.
UXID	<CLID>	Calling Line ID of Universal Extension unit.

Template (TEM) data

Prompt	Response	Comment
REQ	PRT	Print
TYPE	TEM	Templates.
FOR	aaa	Telephone type.
INFO	FRM	Print key/feature assignment template. ***Note:*** Valid only when FOR = "500", "BCS", "SL1", "1210", "1220", "1230" or "1240".
	USS	Print the TN using the template. ***Note:*** Valid only when FOR = "500", "BCS", "SL1", "1210", "1220", "1230" or "1240".

Universal Extension (UEXT) data

Prompt	Response	Comment
REQ	PRT	Print
TYPE	UEXT	Universal Extension.
TN	l s c u	Terminal Number associated with the Universal Extension.
CUST	xx	Customer number.
UXTY	xxxx	Type of Universal Extension.
UXID	<CLID>	Calling Line ID of Universal Extension unit.

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
FOR		Print template information for telephone type.	basic-1
	1210	Print data for IP Phone type 1210.	basic-5.5
	1220	Print data for IP Phone type 1220.	basic-5.5
	1230	Print data for IP Phone type 1230.	basic-5.5
	1240	Print data for IP Phone type 1240.	basic-5.5

Prompt	Response	Comment	Pack/Rel
KEM_RANGE		Specifies range of keys to print from IP Phone 1200 Series KEMs attached to IP Phone models 1220, 1230, and 1240.	basic-5.5
	<StartKEM> <EndKEM>	Where: • <StartKEM> = 1-4 • <EndKEM> = <StartKem>+1 - 4 If <EndKEM> is not specified, only the keys corresponding to the KEM identified in <StartKEM> are printed. ***Note:*** Only prompted when the value specified at the TYPE prompt is 1220, 1230, or 1240.	
	<CR>	Print keys from all IP Phone 1200 Series KEMs configured on IP Phone models 1220, 1230, or 1240.	
TYPE		Type of data block.	basic-1
	1210	IP Phone 1210.	basic-5.5
	1220	IP Phone 1220.	basic-5.5
	1230	IP Phone 1230.	basic-5.5
	1240	IP Phone 1240.	basic-5.5
	MOBX	Mobile extension. Mobile Extension package (412) must be equipped.	MOBX-5.5
	UEXT	Universal extension. Mobile Extension package (412) must be equipped.	MOBX-5.5
INFO			
	FRM	Print key/feature assignments template. Valid only when FOR = "500", "BCS", "SL1".	
		Valid only when FOR = "500", "BCS", "SL1", "1210", "1220", "1230" or "1240".	basic-5.5
	USS	Print TN using the template. Valid only when FOR = "500", "BCS", "SL1".	
		Valid only when FOR = "500", "BCS", "SL1", "1210", "1220", "1230" or "1240".	basic-5.5

Prompt	Response	Comment	Pack/Rel
UXID	<CLID>	Calling Line ID of Universal Extension unit. Where <CLID> = the DN of the Universal Extension unit. Mobile Extension package (412) must be equipped.	MOBX-5.5
UXTY	xxxx	Type of Universal Extension unit. Where: • MOBX = Mobile Extension line • CNVO = Converged Office line • FMCL = Fixed Mobile Convergence Line • SIPL = SIP Line Mobile Extension package (412) must be equipped.	MOBX-5.5

LD 21: Print Routine 2

The following changes have been made in LD 21:

- New output added to print report for Route Data Block (RDB)
  - MBXR (Mobile Extension Route)
  - SIND (Send Indicator for Mobile Extension route)

Alphabetical list of print reports
Route Data Block

Prompt	Response	Comment
REQ	PRT	Print
TYPE	RDB	Route data block.
MBXR	<Yes><No>	Mobile Extension route.
SIND	<Yes><No>	Send Indicator for Mobile Extension route.

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
MBXR	<Yes><No>	Mobile Extension route. Where: • Yes = "yes" is printed if route is configured as MBXR in LD 16. • No = "no" is printed if route is not configured as MBXR in LD 16. Mobile Extension package (412) must be equipped.	MOBX-5.5
SIND	<Yes><No>	Send indicator for Mobile Extension route. Prompted if MBXR = YES. Where: • Yes = "yes" is printed if CLID is user provided and verified. • No = "no" is printed if CLID is user provided and not verified. Mobile Extension package (412) must be equipped.	MOBX-5.5

LD 22: Print Routine 3

The following changes have been made in LD 22:

- ISS response (REQ prompt) updated
  - — description updated from "Print Issue and Release" to "Print System Type, System Generic, Issue and Release"
  - — note added, indicating that for a CS 1000E system, a summary status of all configured IPMGs is also printed
- ISSP response (REQ prompt) updated
  - — description updated from "Print System, Patch, and Plug-in information" to "Print System Type, System Generic, Patch and Plug-in information"
  - — note added, indicating that for a CS 1000E system, a summary status of all configured IPMGs is also printed
- SLT response (REQ prompt) updated
  - — description updated from "SLT Print System Limits : Licenset (License parameters and keywords)" to "SLT Print System Type,

System Generic and System Limits : Licenset (License parameters and keywords)"

— note added, indicating that for a CS 1000E system, a summary status of all configuredIPMGs is also printed.

- new response for the TYPE prompt added

— PLUGIN (specifies printing of all enabled plug-ins)

Prompts and responses

Prompt	Response	Comment
TYPE	xxxx	Type of data block

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
TYPE		Type of data block.	basic-1
	PLUGIN	Print details of all enabled plug-ins.	basic-5.5

LD 24: Direct Inward System Access

The following changes have been made in LD 24:

- overview of chapter contents updated to include Mobile Service Access (MSA) feature
- Mobile Service Access data block (TYPE = MSA) added
- New prompt for TYPE = MSA added

— MSDN (Mobile Service Directory Number)

Prompts and responses

Mobile Service Access (MSA) data block

Prompt	Response	Comment
REQ	aaa	Request
TYPE	MSA	Mobile Service Access data block
CUST	aa	Customer number
SPWD	xxxx	Secure data Password
MSDN	x...x	Mobile Service directory number
SCOD	x...x	Security code
AUTR	(NO) YES	Authorization Code required
CCBA	(NO) YES	Allow Collect Call Blocking Answer signal to be sent

Alphabetical prompts and responses

Prompt	Response	Comment	Pack/Rel
MSDN	x...x	Mobile Service Access Directory Number. Prompted only when TYPE = MSA. Where x...x = 1-7 digit number, not = 0. Mobile Extension package (412) must be equipped).	MOBX-5.5
TYPE		Type of data block	disa-1
	MSA	Mobile Service Access Mobile Extension package (412) must be equipped).	MOBX-5.5

LD 57: Flexible Feature Codes

The following changes have been made in LD 57:

- new Flexible Feature Codes (CODE) are added
  - MCAN (Cancel a Transfer or Conference from a mobile phone)
  - MCFA (Activate a Conference from a mobile phone)
  - MCOM (Complete a Conference or Transfer from a mobile phone)
  - MFAC (Enables a mobile phone user to Conference in, or Transfer a call to, a third party)
  - MTGL (Enables a mobile phone user to toggle between the two parties in a Conference or Transfer)
  - MTRN (Activate the Mobile Extension transfer feature)

Prompts and responses

Prompt	Response	Comment
CODE	xxxx	Specific Flexible Feature Code mnemonic to add/change/print.
-MCAN	MCAN xxxx	Cancel a Transfer or Conference from a mobile phone. Enter Flexible Feature Code. Mobile Extension package (412) must be equipped.
- MCFA	MCFA xxxx	Activate a Conference from a mobile phone. Enter Flexible Feature Code. Mobile Extension package (412) must be equipped.

Prompt	Response	Comment
- MCOM	MCOM xxxx	Complete a Conference or Transfer from a mobile phone. Enter Flexible Feature Code. Mobile Extension package (412) must be equipped.
- MFAC	MFAC x	Enables a mobile phone user to Conference in, or Transfer a call to, a third party. Enter a 1 digit Flexible Feature Code. Mobile Extension package (412) must be equipped.
- MTGL	MTGL xxxx	Enables a mobile phone user to toggle between the two parties in a Conference or Transfer. Enter Flexible Feature Code. Mobile Extension package (412) must be equipped.
- MTRN	MTRN xxxx	Activate the Mobile Extension transfer feature. Enter Flexible Feature Code. Mobile Extension package (412) must be equipped.

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
MCAN	xxxx	Cancel a Transfer or Conference from a mobile phone. Where xxxx = Flexible Feature Code. Mobile Extension package (412) must be equipped.	MOBX-5.5
MCFA	xxxx	Activate a Conference from a mobile phone. Where xxxx = Flexible Feature Code. Mobile Extension package (412) must be equipped.	MOBX-5.5
MCOM	xxxx	Complete a Conference or Transfer from a mobile phone. Where xxxx = Flexible Feature Code. Mobile Extension package (412) must be equipped.	MOBX-5.5

Prompt	Response	Comment	Pack/Rel
MFAC	x	Enables a mobile phone user to Conference in, or Transfer a call to, a third party. Where x = 1 digit number. Places the mobile phone on HOLD and provides a dial tone. Used in combination with the Conference and Transfer FFC.	MOBX-5.5
MTGL	xxxx	Enables a mobile phone user to toggle between the two parties in a Conference or Transfer. Where xxxx = Flexible Feature Code. Mobile Extension package (412) must be equipped.	MOBX-5.5
MTRN	xxxx	Activate the Mobile Extension transfer feature. Where xxxx = Flexible Feature Code. Mobile Extension package (412) must be equipped.	MOBX-5.5

LD 81: Features and Station Print

The following changes have been made in LD 81:

- New responses to FEAT prompt added.
  - MPTA (Modem Pass Through Allowed)
  - MPTD (Modem Pass Through Denied)
  - SDNA (Phantom DN as SDN Allowed)
  - SDND (Phantom DN as SDN Denied)
  - UEXT (Universal Extensions)
- Mnemonics for various FEAT responses updated.
  - BRCA changed to RCBA (Recall to Boss Allowed)
  - BRCD changed to RCBD (Recall to Boss Denied)
  - MISA changed to MSIA (Make Set Busy Improvement Allowed)
  - MISD changed to MSID (Make Set Busy Improvement Denied
- Various responses to the FEAT prompt retired.
  - 4020 (M4020 telephone)
  - HSTA (Host Terminal Allowed)
  - HSTD (Host Terminal Denied)

— PDN (Primary Directory Number)
— LDN (Listed Directory Number)
— XMWI (Extended Message Waiting indication Allowed)
— XMWD (Extended Message Waiting indication Denied)
— LED (LED state for ACD agents)
— ITGE (Incoming Trunk Group Exclusion)

Prompts and responses

Prompt	Response	Comment
FEAT	aaaa	Features requested.

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
FEAT		Features requested. Enter a specific feature mnemonic or one of the following for groups of features: ALL, COS, DNK, SETS, SCL, RNP or 500. FEAT is repeated until <CR> is entered.	basic-1
	MPTA	Modem pass-through allowed.	basic-5.5
	MPTD	Modem pass-through denied.	basic-5.5
	MSIA	Make Set Busy Improvement Allowed	
	MSID	Make Set Busy Improvement Denied	
	RCBA	Recall to Boss Allowed	
	RCBD	Recall to Boss Denied	
	SDNA	Phantom DN as SDN allowed.	basic-5.5
	SDND	Phantom DN as SDN denied.	basic-5.5
UEXT		Universal Extensions.	MOBX-5.5

LD 86: Electronic Switched Network 1

The following changes have been made in LD 86:

- New prompts added to the Route List command sequence (FEAT = RLB)

— DDI (

— DDV (

Prompts and responses

FEAT equal to RLB (Route List)

Prompt	Response	Comment
FEAT	RLB	Route list.
DDV	(YES) NO	DPNSS Diversion Validation
DDI	(YES) NO	DPNSS Diverting Immediate

Alphabetical list of prompts

Prompt	Response	Comment	Pack/Rel
DDI	(YES) NO	DPNSS Diverting Immediate. Where: • YES = Send the Diverting Immediate information to the far end. • NO = Do not send the Diverting Immediate information to the far end. Far end is not M1 and does not handle Diverting Immediate message.	basic-5.5
DDV	(YES) NO	DPNSS Diversion Validation. Where: • YES = Process the messages sent from the far end. • NO = Ignore the messages from the far end and allow setting of CFW. Far end is not M1 and does not handle Diversion Validation messages for CFW.	basic-5.5

LD 117: Ethernet and Alarm Management

The following changes have been made in LD 117:

- New responses to STIP TYPE prompt are added.
  - — 1210 (IP Phone model 1210)
  - — 1220 (IP Phone model 1220)

— 1230 (IP Phone model 1230)

— 1240 (IP Phone model 1240)

- default for SNMP_SYSNAME system element command updated from "Navigation Site Name : Navigation System Name : Hostname" to "System Name"
- %hostname% variable introduced for use in the SNMP_SYSNAME system element command
  — The System Name string can include a %hostname% variable that allows the system to configure the physical hostname as a component of the system element (machine) name.
- SNMP_SYSNAME NAV command retired
  — redundant with enhanced functionality in the SNMP_SYSNAME system element command

IP Command descriptions

Command	Description
STIP TYPE <aaa>	Display the resource locator module information for the specified TN type.

Alphabetical list of Administration commands

Command	Description	Pack/Rel
CHG SNMP SYSNAME aa...a		basic-4.0
	Change the system name assigned to the system element (machine). Where aa...a = a character string (System Name string) with a maximum length of 100 characters.	
	The System Name string can include a %hostname% variable that allows the system to configure the physical hostname as a component of the system element name. Default = 'System Name".	basic-5.5

Alphabetical list of Maintenance commands

Command	Description	Pack/Rel
STIP TYPE <aaa>	Display the resource locator module information for the specified TN type, where up to 3 types can be specified.	
	Where valid values for <aaa> are: • 1210 = IP Phone model 1210 • 1220 = IP Phone model 1220	basic-5.5

Command	Description	Pack/Rel
	• 1230 = IP Phone model 1230 • 1240 = IP Phone model 1240	

System messages

The following system messages are introduced for Nortel Communications Server 1000 Release 5.5. The new messages are sorted by the following message categories:

The following information is available for each system message:

- message description
- action (if applicable)
- message severity
- whether the message is critical to monitor
- whether the message is sent as an SNMP trap

AUD: Software Audit (LD 44)

AUD0118 MobileX VGW is not idled.
Action:
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

AUD0119 UEXT is not idled.
Action:
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

BUG: Software Error Monitor

BUG0587 A corrupted PSDL entry was deleted. The parameters are card type and corrupted pointer value.
Action: If the software download fails on any card (the card remains disabled), restart the download manually.
Severity: Minor **Critical to Monitor:** No **SNMP trap:** Yes

BUG0588 A corrupted PSDL entry was deleted. The parameters are card type and corrupted pointer value.
Action: This is an internal error; contact Nortel support.
Severity: Major **Critical to Monitor:** Yes **SNMP trap:** Yes

BUG0589 DCH_ORBLOAD or DCH_ORBUNLD pointer is out of range. If ERR_FLAG is 1 or 2, then DCH_ORBLOAD is out of range. If ERR_FLAG is 3 or 4, then DCH_ORBUNLOAD is out of range.
Action: Report the issue to your Technical Support to investigate the root cause.
Severity: Major **Critical to Monitor:** Yes**SNMP trap:** Yes

BUG0830 The internal correlation between the call register and the Mobile X TN is lost. The MobileX feature may not be available for this call. Parameters: MobileX TN, Call Register
Action: This is an internal error; contact Nortel support.
Severity: Major **Critical to Monitor:** No **SNMP trap:** Yes

BUG0831 When the MobileX user attempts to release the second call, the prime key of UEXT TN is idle. However this key is expected to be busy. Parameters: UEXT TN, Current State, Requested Event
Action: This is an internal error; contact Nortel support.
Severity: Major **Critical to Monitor:** No **SNMP trap:** Yes

BUG0832 MOBX ISM counter corruption encountered; the counter is reset to 0.
Action: This is an internal error; contact Nortel support.
Severity: Major**Critical to Monitor:** No **SNMP trap:** Yes

BUG0833 Processing MFAC failed for Universal Extension (UEXT). MobileX Call in Progress feature is not available for this call. Parameters: TN of UEXT, Current State, Requested Event, Terminal TN, Active Call Register.
Action: This is an internal error; contact Nortel support.
Severity: Major **Critical to Monitor:** No **SNMP trap:** Yes

ERR: Error Monitor (Hardware)

ERR0125 ERROR: Hash table has reached the slot limit of 200 . Cannot add a new Mobile DN to this slot n. Internal error.
Action: Contact Nortel support.
Severity: Major **Critical to Monitor:** Yes **SNMP trap:** Yes

ERR0126 Warning: The number of Mobile DNs assigned to a slot has reached the warning limit of 50. Slot = n. A new Mobile DN can still be added to this slot. However, this is not an expected condition.
Action: Contact Nortel support.
Severity: Major **Critical to Monitor:** Yes **SNMP trap:** Yes

HWI: Hardware Infrastructure Maintenance

HWI0011 Wrong network memory accessed at %x, (ncbBase[grp]+((ioaddr & LOWER16BITS)<<2))
Action:
Severity: Major **Critical to Monitor:** Yes **SNMP trap:** Yes

INI: Initialize

INI0015 During INI, the Mobile user message indicates that some errors have occurred. Some user data is not built into the internal database. The two associated parameters are: n = the number of Mobile user Universal Extension sets that cannot be built into the database. If n = 0, no message is displayed. m = the number of Mobile user Universal Extension sets built successfully into the database.
Action: Check to make sure all Universal Extension sets are properly configured for Mobile user. Contact Nortel support if necessary.
Severity: Major **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM: Operating System Messaging

OSM0018 Physical memory usage has passed the 80% utilization threshold. Current allocated xxx Kbytes, maximum available zzz Kbytes.
Action: Monitor memory utilization through the server's resource monitoring utility to ensure that there is not a bad memory module and baseline the memory utilization during high and normal traffic levels. If there are frequent threshold violations of the memory usage please reference the System Engineering NTPs to ensure that the server is properly engineered. If memory utilization continues to

break thresholds and the physical memory and server engineering appears to be correct, please contact your Nortel technical support.
Severity: Warning **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0019 Physical memory usage has dropped below the 75% memory utilization threshold and is below high usage levels. Current allocated yyy Kbytes maximum available zzz Kbytes.
Action:
Severity: Cleared **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0020 Physical memory usage has passed the 90% utilization threshold. Current allocated xxx Kbytes maximum available zzz Kbytes.
Action: Monitor memory utilization through the server's resource monitoring utility to ensure that there is not a bad memory module and baseline the memory utilization during high and normal traffic levels. If there are frequent threshold violations of the memory usage please reference the System Engineering NTPs to ensure that the server is properly engineered. If memory utilization continues to break thresholds and the physical memory and server engineering appears to be correct, please contact your Nortel technical support.
Severity: Critical **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0021 Physical memory usage has dropped below the xx% memory utilization threshold. Current allocated yyy Kbytes maximum available zzz Kbytes.
Action: Monitor for any subsequent warnings for memory usage that exceeds the 80% warning utilization and the associated 75% clear alarm that indicates the memory utilization is below high usage levels.
Severity: Cleared **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0022 CPU utilization has passed the 80% utilization threshold.
Action: Monitor CPU utilization through the server's resource monitoring utility to ensure that there is not a specific process that is demanding a large amount of CPU cycles and baseline the utilization during high and normal traffic levels. If there are frequent threshold violations please reference the System Engineering NTPs to ensure that the server is properly engineered. If CPU utilization continues to break thresholds and server engineering appears to be correct, please contact your Nortel technical support.
Severity: Warning **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0023 CPU utilization has dropped below the 75% utilization threshold.
Action:
Severity: Cleared **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0024 CPU utilization has passed the 90% utilization threshold.
Action: Monitor CPU utilization through the server's resource monitoring utility to ensure that there is not a specific process that is demanding a large amount of CPU cycles and baseline the utilization during high and normal traffic levels. If there are frequent threshold violations please reference the System Engineering NTPs to ensure that the server is properly engineered. If CPU utilization continues to break thresholds and server engineering appears to be correct, please contact your Nortel technical support.
Severity: Critical **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0025 CPU utilization has dropped below the 85% utilization threshold.
Action: Monitor for any subsequent warnings for CPU utilizations that exceed the 80% warning utilization and the associated 75% clear alarm that indicates the CPU utilization is below high usage levels.
Severity: Cleared **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0026 The disk is getting full and has passed the 80% threshold. Only x bytes remain.
Action: Please reference the System Engineering NTPs to ensure that the server is properly engineered and that log files and temporary files are being properly cleared. If disk utilization continues to break thresholds and server engineering appears to be correct, please contact your Nortel technical support.
Severity: Warning **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0027 Disk usage has dropped below the 75% threshold. x bytes remain.
Action:
Severity: Cleared **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0028 The disk Is full. Only x bytes remain.
Action: Please reference the System Engineering NTPs to ensure that the server is properly engineered and that log files and temporary files are being properly cleared. If disk utilization continues to break thresholds and server engineering appears to be correct, please contact your Nortel technical support.
Severity: Critical **Critical to Monitor:** Yes **SNMP trap:** Yes

OSM0029 Disk usage has dropped below the 85% threshold. Only x bytes remain.
Action: Monitor for any subsequent warnings for disk utilizations that exceed the 80% warning utilization and the associated 75% clear alarm that indicates the utilization is below high usage levels.
Severity: Cleared **Critical to Monitor:** Yes **SNMP trap:** Yes

OVL: Overlay Loader

OVL0436 n m System message lookup for language %d failed twice in a row.
Action:
Severity: Minor **Critical to Monitor:** No **SNMP trap:** Yes

SCH: Service Change

SCH2231 As CLS is DSSA, cannot remove the MARP MCR primary key until the associated DSS keys are deleted.
Action: The response provided is invalid.
Severity: Info **Critical to Monitor:** No **SNMP trap:** Yes

SCH2232 CLS DSSA requires a configured TRN key.
Action: The response provided is invalid.
Severity: Info **Critical to Monitor:** No **SNMP trap:** Yes

SCH2233 CLS DSSA requires one MCR key configured on the primary key.
Action: The response provided is invalid.
Severity: Info **Critical to Monitor:** No **SNMP trap:** Yes

SCH2234 DN cannot be monitored by the DSS key.
Action: The response provided is invalid.
Severity: Info **Critical to Monitor:** No **SNMP trap:** Yes

SCH2235 Cannot change CLS from DSSA to DSSD while there is a DSS key on the set.
Action: The response provided is invalid.
Severity: Info **Critical to Monitor:** No **SNMP trap:** Yes

SCH2236 This DN forms a DSS group. A DSSA CLS must be established first.
Action: The response provided is invalid.
Severity: Info **Critical to Monitor:** No **SNMP trap:** Yes

SCH2237 Service change error encountered when configuring the Universal Extension Mobile X set. The Mobile user's data is not added to the internal database. The error code is printed and unless specified, these errors are internal system errors. Error Code n: 800 Invalid data passed to the internal database management. Internal error. 801 Invalid mobile phone DN passed to the internal database management. Internal error. 802 Invalid Universal Extension set TN passed to the internal database management. Internal error. 803 Invalid enterprise DN passed to the internal database management. 805 Internal database cannot be created. Internal error. 806 The specified mobile phone DN cannot be found in the internal database. 807 The specified Universal Extension set TN cannot be found in the internal database. 808 The specified Mobile Phone DN already exists in the internal database. The second Mobile Phone DN will not be added to the database. 811 The requested operation cannot be completed. Internal error.
Action: For internal system errors contact Nortel support. Once the error is rectified the PCA set must be re-configured. For Error Code 803: Please ensure that Key 0 for this Universal Extension set is configured. For Error Code 806: This is just a warning; it is not an internal error. This message may be ignored if the Universal Extension set data is configured prior to the implementation of this feature, or if the Universal Extension set data is not configured for the Mobile X feature. For Error Code 807: This is just a warning; it is not an internal error. This message may be ignored if the Universal Extension set data is configured prior to the implementation of this feature, or if the Universal Extension set data is not configured for the Mobile X feature. For Error Code 808: This is not an

internal error. Please check the Universal Extension set configuration for possible duplication of the Mobile Phone DN.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2238 Invalid Mobile X UXID. Mobile X UXID must be numeric and must not exceed 16 digits.
Action: TEnter the correct UXID.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2239 You are not permitted to copy Universal Extension units.
Action: Configure the Universal Extension unit using a new request.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2240 Cannot find stored data for the mobile DN.
Action:
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2241 Cannot configure the Handoff key on the set Error Code n: 1. the set type does not support Device Handoff 2. the Handoff key cannot be configured on the UEXT unit; it should be configured on the user's desk set unit.
Action: Re-configure Handoff key on the correct unit.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2242 Invalid Universal sub type (UXTY).
Action: Re-enter with a correct UXTY.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2243 Mobile X package 412 is not equipped.
Action: Contact Nortel support to request a Mobile X package.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2244 This UXID already exists for a UEXT/MOBX.
Action: Enter a valid UXID.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2245 ACD key cannot be defined on a MOBX unit.
Action:
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2246 MOBX type can be used only with PRT command.
Action:
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2247 Mobile X ISM is exhausted or insufficient.
Action: Please contact Nortel support to request a new Mobile X ISM.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2248 KEY 0 must be configured for the UEXT.
Action: Configure Key 0 for this UEXT.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SCH2249 ISM limit of Music connections is equal to 0.
Action:
Severity: Minor **Critical to Monitor:** No **SNMP trap:** No

SCH2252 AML configuration is not supported on MSDL/ESDI cards for CS 1000E systems.
Action:
Severity: Minor **Critical to Monitor:** No **SNMP trap:** No

SRPT: System Reports

SRPT0293 The hardware watchdog is disabled; contact Nortel technical support for further assistance.
Action: Please enable the hardware watchdog timer in advanced settings in BIOS. You can enter BIOS by pressing F2 in your BIOS screen during startup.
Severity: Major **Critical to Monitor:** Yes **SNMP trap:** Yes

SRPT0294 X is called from interrupt context, where X is a procedure name.
Action: Contact your technical support.
Severity: Info **Critical to Monitor:** No **SNMP trap:** No

SYS: System Loader

SYS0158 DISA DNs were not loaded because the DISA package is not equipped.
Action: This is an internal error; contact Nortel support.
Severity: Critical **Critical to Monitor:** Yes **SNMP trap:** Yes

SYS0159 MSA DNs were not loaded because the MOBX package is not equipped.
Action: This is an internal error; contact Nortel support.
Severity: Critical **Critical to Monitor:** Yes **SNMP trap:** Yes

Nortel Communication Server 1000

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